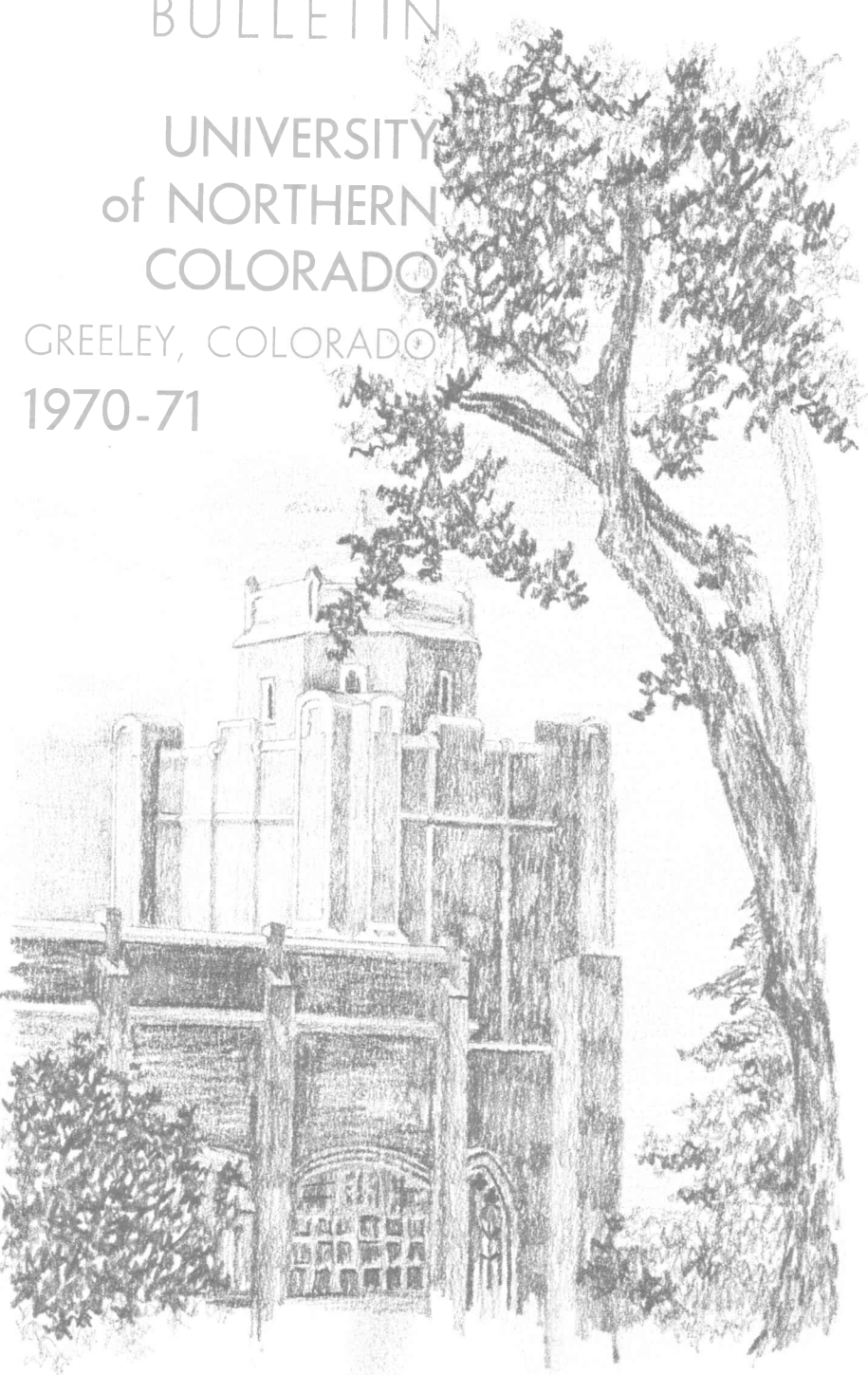


BULLETIN

UNIVERSITY
of NORTHERN
COLORADO

GREELEY, COLORADO

1970-71



GRADUATE SCHOOL CATALOG

COLLEGE CALENDAR

1970-1971

SEPTEMBER

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AUGUST

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Summer Quarter—1970

June 15-16—Registration

June 17—Classes Begin*

July 4—Independence Day—Holiday

July 20-25—Mid-term Week

August 15—Commencement—10:00 a.m.

August 19-20-21—Final Examinations

Fall Quarter—1970

September 14—Laboratory school opens

September 18—New students report

September 21-22—Registration

September 23—Classes begin

October 24—Homecoming

October 26-30—Mid-term week

November 14—Parents Day

November 25—Thanksgiving Vacation (begins at noon)

November 30—Classes resume

December 8—Commencement—10:00 a.m.—No classes

December 9-11—Final Examinations

December 18—Laboratory school closes

Winter Quarter—1971

January 4-5—Registration

January 6—Classes begin

January 29-30—Mid-Year Education Conference

February 8-12—Mid-term week

March 13—Commencement—10:00 a.m.

March 12, 15, 16—Final Examinations

Spring Quarter—1971

March 22-23—Registration

March 24—Classes begin

April 26-30—Mid-term week

May 28—Insignia Day

May 29—Commencement—10:00 a.m.

May 30—Memorial Day

May 31—Memorial Day vacation—No classes

June 1—Classes resume

June 2-4—Final Examinations

Summer Quarter—1971

June 14-15—Registration

June 16—Classes begin

July 4—Independence Day

July 5—Independence Day vacation—No classes

July 19-23—Mid-term week

August 17—Commencement 10 a.m.—No classes

August 18-20—Final Examinations

Effective May 1, 1970, the name of Colorado State College will be the University of Northern Colorado. The Colorado Legislature approved the name change in the 1970 session and the bill was signed by Governor John A. Love.



BULLETIN

UNIVERSITY OF
NORTHERN COLORADO

1970-71 GRADUATE SCHOOL CATALOG

Bulletin Series LXX ●

April, 1970 ● Number 4

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GRADUATE SCHOOL

Administration

Darrell Holmes, Ph.D.
President of the College

Donald Gilmore Decker, Ph.D.
Dean of the College

Arthur Rae Reynolds, Ph.D.
Dean of the Graduate School

George Henry Brooks, Ed.D.
Assistant to the Dean of the Graduate School

Graduate Council

The School of the Arts—William Erwin, Ed.D.; Dana Johnson, Ed.D.

The School of Arts and Sciences—Donald Elliott, Ph.D.; Cynthia Frease, Ed.D.; John Girault, Ph.D.; Kevin Kearns, Ph.D.; Paul Lehrer, Ph.D.; Royal Rich, Ph.D.

The School of Business—John Damgaard, Ed.D.; Alice Yetka, Ed.D.

The School of Education—Amos Claybaugh, Ed.D.; Bill Gearheart, Ed.D.; Samuel Houston, Ph.D.; Edward Kelly, Ph.D.; Theodore Nelson, Ph.D.; Arthur Partridge, Ed.D.; Richard Wolfe, Ed.D.

The School of Health, Physical Education and Recreation—Jerry Barham, Ed.D.; Nancy Van Anne, Ph.D.

The School of Music—Loren Bartlett, Ph.D.; James Miller, Ph.D.

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This catalog is a reservoir of programs and courses approved for offering at Colorado State College. The listing of a program or course in the catalog does not constitute a guarantee or a contract that the program will be offered or that the courses listed will be taught during the period of time covered by this catalog. Consult the schedule of classes for a listing of specific courses to be offered, in case of question consult your adviser or Department Chairman.

GENERAL INFORMATION

Functions of the College—Colorado State College provides balanced curricula to allow the student to develop into an effective citizen, to increase his capacity to use the processes of critical, reflective and creative thinking, and to increase his level of personal maturity. Within this framework professional and pre-professional courses are provided to enable each student to become a useful and productive member of society.

Colorado State College has a tradition and a national reputation in the preparation of teachers, offers a variety of majors in many academic disciplines, and is dedicated to the continuing advancement of knowledge.

Accreditation—Colorado State College is completely accredited by the North Central Association of Colleges and Secondary Schools as an institution conferring the Bachelor of Arts, the Bachelor of Science, the Master of Arts, the Specialist in Education, the Doctor of Education, and the Doctor of Philosophy degrees. Accreditation by the North Central Association of Colleges and Secondary Schools was first earned in 1916.

The college is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary teachers, secondary teachers, and school service personnel, with the doctorate degree as the highest degree approved.

The college is a member of the American Association of Colleges for Teacher Education, the American Council on Education, the Council of Graduate Schools in the United States, the Midwest Conferences on Graduate Study and Research, the Western Association of Graduate Schools, the American Association of State Colleges and Universities, and an associate member of the National Association of the Schools of Music.

History—The history of Colorado State College closely parallels much of the growth and development of the Greeley Union Colony. The Colony was organized in 1870 by Nathan C. Meeker, traveler and newspaper correspondent, and was named after Horace Greeley.

When the Colony was eighteen years old, a movement was started to establish a normal school to supply teachers for the community and state. The law creating the State Normal School was signed on April 1, 1889, and the cornerstone of the first building was laid on June 13, 1890. Classes were started October 6, 1890, with a staff of the principal, four instructors, and 96 students. Certificates were granted upon the completion of the two-year course.

In 1911 the name was changed to Colorado State Teachers College by the state legislature. The college was then offering four years of undergraduate work and granting the Bachelor of Arts degree. In 1935 the name of Colorado State College of Education was adopted to recognize the fully developed graduate program which was started in 1913. Early in 1957 the state legislature approved shortening the name to Colorado State College, effective October, 1957.

Government—The college is under the jurisdiction of the Trustees of the State Colleges in Colorado, a governing board consisting of seven members appointed by the Governor of the State. Funds for the operation of the college come from general appropriations of the legislature, student tuition and fees, and special federal and philanthropic grants.

Location—Colorado State College is in Greeley, a city of approximately 35,000. Greeley is 52 miles north of Denver and 52 miles south of Cheyenne, Wyoming. Estes Park is 51 miles west. The front range of the Rocky Mountains is 30 miles west of the campus. The elevation of Greeley is 4,648 feet, and the climate is invigorating and conducive to study.

Laboratory Schools—The college maintains a Laboratory School which includes Ernest Horn Elementary School and College High School with grades seven through twelve. For information on tuition and fees consult the Director of the Laboratory School.

The campus Special Education School, a cooperative project of School District No. 6 (Greeley, Evans and Ashton) and the college, is a laboratory school enrolling physically and mentally handicapped and emotionally disturbed children. College students observe and do student teaching in this school. For information consult the Chairman of Special Education.

A Nursery School is maintained under the direction of the Department of Home Economics. Please consult the department chairman for further information.

Campus—The 243-acre college campus is in a beautiful residential area in the southern part of Greeley. The campus is south of the main business district and is in three parts—East, Greeley, and College Park. Residence halls for men and women are located on the East and College Park campuses and residences for women on the Greeley Campus. Permanent college-owned apartments for married students and families are on the East Campus.

Athletic fields for major outdoor sports are on the East Campus, while recreational activity areas extend over all three campuses.

The \$3,175,000 College Center lies between the Greeley and College Park campus areas. Future plans of the college are to have the majority of single student residences and academic buildings on the 156-acre College Park Campus. Presently Ross Hall, the science complex; Bishop-Lehr, the laboratory school; and the new \$2,900,000 education-classroom building, McKee Hall, are on the College Park Campus. Three new coeducational residence halls on the College Park Campus—McCowen Hall, Harrison Hall and 13-story Turner Hall—can house 1,660. Capacity for housing in apartments, dormitories, and college-owned houses is 3,320.

A new \$5,000,000 library-classroom building is currently under construction on the College Park Campus.

Architectural plans are now being completed for a new physical education building and a new general classroom building for the arts and sciences, both to be located on the College Park campus. These buildings are scheduled for construction during 1970-71, at costs in excess of two million dollars each. The first phase of a new apartment style coeducational dormitory is also being planned. Ultimately this structure would house an additional 1000 students, and it is hoped that initial construction will take place in 1971.

The total physical plant of the campus includes 61 buildings, exclusive of college-owned fraternity and sorority houses.

The college also owns a mountain campus of 80 acres and five buildings adjacent to the city of Estes Park. This area, used for field trips by college classes, includes some of the most spectacular scenery in the Rockies.

Alumni Association—The Alumni Association of Colorado State College was re-established February 11, 1965. A non-profit corporation organization independent of the college, the Association is governed by a 21-man Board of Directors and has as its purpose the creation and encouragement of activities which are mutually beneficial to the college and its alumni. Local clubs are established in areas where 10 or more alumni indicate an interest. Regular Membership is available to any person who has enrolled in the college. Friends of the college may apply for an Associate Membership. For additional information, please contact the Alumni Office, Colorado State College.

Public Services—Coordinated through the Department of Public Services and Development, the college provides several types of services for students, schools, and communities. The services include off-campus classes and correspondence study, placement of graduates in professional positions, helping to plan and host various types of conferences on campus, scheduling staff members and students for speaking engagements, and assisting schools and communities with their educational problems. Recently the college has established the Colorado State College Foundation to help provide funding for college programs.

Off-Campus Instruction—One of the many services the college provides for Colorado is an extensive program of off-campus instruction.

Off-campus classes are offered in various sections of the state primarily as in-service courses to the teachers and the school systems.

6 / GENERAL INFORMATION

Tele-Lecture is a means of providing off-campus instruction in a number of sites widely separated and distant from the campus. Through the use of tape recorded lectures the professor is able to teach classes in several communities simultaneously. Visual materials and textbooks are used to supplement the taped lectures. Two-way communication is achieved through the use of amplified telephone conference calls which connect all class groups with the professor on the campus and with other class groups. The conference calls permit interaction between the individual student, other students, and the professor. All Tele-Lecture courses are offered for three quarter hours credit with approximately two hours per week devoted to taped lecture material and one hour per week to amplified telephone lecture and interaction with class groups.

Complete information on off-campus and Tele-Lecture courses may be obtained from the Office of Continuing Education, Colorado State College.

Placement Services—The Placement Center of Colorado State College offers its services to all persons who have completed course work at Colorado State College and who enroll for the service. The placement season extends from July 1 through June 30. Credentials will be filed for a period of five years from the end of the placement season during which an enrollment was completed. Unless materials are updated within a five-year span, they will be destroyed. This policy permits better service and provides current information which employers request.

Employment is not guaranteed but the Placement Center acts as an effective liaison with all educational institutions, business, and governmental agencies. An opportunity is provided for the prospective employer and the prospective employee to get together; a continuing service for the student to gain information and experience pertaining to career objectives; broad knowledge of the types of jobs available; experience in interviewing and in the writing of letters of application; and acceptance of a position as a part of the student's overall general education.

More than 70,000 vacancy notices are received throughout the year, with the largest number coming in January to June for positions in September. Personal interview schedules are publicized in advance in academic departments, residence halls, the *Mirror*, student center, and on the Placement Center's bulletin board. Many employers are unable to make a personal visit but list their vacancies throughout the year. Students and alumni are recommended to these employers who advise us of their needs, and credentials are furnished.

The office carries on numerous activities which include automated nominations; processing vacancy notices; mailing out credentials; conferring with prospective employers and applicants for positions. Vacancy lists are published and mailed to off-campus enrollees, and listings are placed in the Placement Center library for use by enrollees on campus. Personal interviews are conducted in six modern and private interview rooms. One of the main functions is the counseling of candidates whenever assistance is needed in regard to placement. The office attempts to maintain close relationship with former graduates who may desire to change positions or to make professional advancements in the field of education.

ACADEMIC SERVICES

There is a variety of academic services available to faculty and students and educators in the field which assists them in their academic endeavors. These services are administered by the Dean of College Academic Services and include Library Services, Instructional Materials Center and KCBL-FM, the Educational Planning Service, the Bureau of Research, the Computer and Data Processing Center, and the Office of Federal Programs.

Library Facilities—The main college library in Carter Hall contains approximately 270,000 volumes, including microfilms, periodicals, government documents, pamphlets, and reference materials. The book stacks are open to all students and other patrons. Study facilities are available in the stack areas as well as in other areas in Carter Hall.

A new general library is under construction on the College Park Campus, planned to meet the needs of a fast-growing student body and faculty. Occupancy is scheduled for sometime during 1971.

The music library is located in Frasier Hall 249. Selected volumes including certain reference materials together with music recordings, scores, and study facilities are available.

A Science Reading Room is located in Ross Hall 113. Certain current periodicals and selected science and math materials are available, together with study facilities in a well-lighted room.

The Educational Resources Center is located in McKee Hall. Certain educational materials, textbooks (K-12), curriculum guides, and testing materials are available for the student who is preparing to teach. The surroundings are new, comfortable and colorful.

The College Laboratory School libraries (K-6 and 7-12) are located in Bishop-Lehr Hall. The best of children's and young adult literature has been gathered in approximately 22,000 volumes for the laboratory school student and faculty use. College students preparing to teach should find this facility and its outstanding collection worth examining.

Instructional Materials Center—Services provided by the Instructional Materials Center cover the range of educational media. The Center provides a media consulting service for faculty and others.

Faculty film requests and orders are processed by this department. A library of 2,000 films, 900 filmstrips, several hundred audio recordings and numerous video tapes is available. All audio-visual equipment and films for the college and community are centrally located, supplied, and maintained in the Center. Student projectionists are provided for faculty members who desire this help.

Audio production studios provide disc and tape recording services, as well as a campus public address system. A graphics production staff is also available in the Center for the creation and reproduction of visual and photographic instructional materials. Through the facilities of CSC-TV, a television production studio is also available. A campus-wide six-channel distribution system allows for convenient playback of video tape or distribution of locally originated live telecasts.

Educational Planning Service—Consultant services for school districts and educational institutions are provided through the Educational Planning Service, which is organized to utilize the experience and specialized knowledge of the entire Colorado State College faculty. Services to schools and colleges include curriculum planning, administration and organization problems, planning educational facilities and planning for higher education. The Educational Planning Service is a self-supporting non-profit activity with the fees for services set on a cost basis.

Bureau of Research—Consultative services are provided to the college, individual faculty members, doctoral students, public schools and other educational organizations. Services include aid in preparing statistical designs, drafting of research proposals, seeking out sources of research funds and grants, dissemination of research reports, and aid in other phases of research and development. College and public school organizations are assisted in planning test programs, large scale research projects, innovative projects, and program evaluation.

Computer and Data Processing Center—The Computer and Data Processing Center is a service arm of Colorado State College. It supports both administrative data processing and academic automatic data processing programs at all levels of the institution. The facilities are available to all faculty, staff, and students of the College. Members of the Center staff provide consulting service and assistance to all users.

Office of Federal Programs—The Dean of College Academic Services serves as liaison officer between the college and all federal offices as well as private foundations which provide financial support to educational programs. This office serves as an information clearing house in that it receives and disseminates information about special programs to interested faculty and students. The Dean reviews and processes all proposals for projects, receives all grants and loans, and administers them through the various project directors.

KCBL-FM—The radio voice of Colorado State College. This 10-watt educational radio station is licensed to the Associated Students and is staffed by students interested in broadcasting. While quality music is the primary source of programming, emphasis is also given to the broadcasting of programs dealing with student life, programming from and about foreign countries, programs of general cultural and educational interest, and selected athletic events. KCBL-FM broadcasts at 91.3 megacycles on the FM frequencies. A monthly program guide describes the program offerings and is available free of charge.

Rocky Mountain Special Education Instructional Materials Center—An integral part of the special education program at Colorado State College is the new Rocky Mountain Special Education Instructional Materials Center. This facility is one of 14 such centers in the United States which grew out of two applications submitted to the U.S. Office of Education in 1964. The Center's chief function is to provide for acquisition and lending services of special education instructional materials to educators in a five-state area. The states within this area include Montana, Wyoming, Colorado, Utah and New Mexico.

Special education students at the Greeley campus will find the Center's storage of materials and data processing of annotated bibliographical listings most helpful in their studies and research. The Center is most anxious to put within the reach of students and educators alike an ever-expanding wealth of the latest in instructional materials.

STUDENT PERSONNEL SERVICES

Out-of-class activities and services for students are administered by the Department of Student Personnel under the direction of the Dean of Students. These include veterans counseling, registration for courses, record keeping, transcription of records, student health services, testing, counseling of a personal nature as well as academic guidance, remedial programs, living accommodations, recreational and social events, student employment, and student loans.

Counseling Services—Counseling services are available for all students of the college at the Counseling Center. These services provide an opportunity for students to receive help in determining and understanding their aptitudes and interests in order that they might select a course of study in keeping with their needs and desires. Help is also available for students who are having difficulty with course work or who present other types of problems which arise in college life, such as those of a personal nature involving social situations, physical and mental health, finances, or housing.

Student Employment—A large number of the students of the college have part-time employment on-campus to help defray their expenses. Other jobs are available in Greeley business places and homes. Each student employed on the college campus must maintain a satisfactory grade average. Inquiries concerning employment should be addressed to the Director of Financial Aid, Colorado State College.

Transcripts—Students may obtain official transcripts of their Colorado State College academic records on payment of \$1.00 per copy, payable in advance. Requests should be addressed to Records, Colorado State College.

Education of War Service Personnel—All ex-service personnel entering under the veterans' education and training program must present a Certificate of Eligibility valid for use at Colorado State College. This certificate must be presented at the time of registration. Further information concerning Veterans' Affairs may be obtained from the Director of Financial Aid, Colorado State College.

Photographs—A college photographer will take pictures of all new students on registration day. These pictures are for official files.

HEALTH SERVICES

The Student Health Center offers examination, treatment, and limited dispensary facilities with registered nurses in attendance at all times during the college day and with physicians available at specific office hours and for emergencies.

Off-Campus Services are available to all full-time students through a contract with the Medical Staff of the Weld County General Hospital. A student may go to the office of any physician included in the contract or, if necessary, the physician may make a home or hospital call. No surgical benefits are included. To obtain service, the student must show his current I.D. card. A list of physicians, their telephone numbers, and the services provided are listed in a yellow pamphlet distributed at registration. Doctor's charges are paid at the end of each quarter within the limits provided in the contracts. Students who are on off-campus assignments, outside the boundaries of Weld County, are provided comparable services in the area of their assignment. Instructions for this service are explained in the pamphlet.

A Student Group Hospitalization and Accident Insurance Policy which provides supplementary medical care for a low cost per student per quarter is contracted for by the college. Dependent coverage is available on an optional basis the first quarter of enrollment each school year, full annual premium required.

A Student Health Services Brochure is provided which may be consulted for further details regarding all services described above.

Copies of Medical Records will be sent to another institution for a \$2.00 fee.

Housing

Student Residence Halls—Room and board accommodations are available in college residence halls for undergraduate or graduate students on a contract basis for the full school year consisting of the fall, winter and spring quarters. No student is permitted to break this contract unless he or she is leaving the campus. Residence in these halls provides social, educational, and cultural advantages to the student. Each hall is under the supervision of a director chosen for his or her experience and interest in the personal and social growth of college-age students.

Desirable study conditions are to be maintained by all students at all times in residence halls, college-owned housing, and college-approved private homes.

Linens and Bedding—Students provide their own personal linens and towels. The college furnishes and launders college-owned bedding in the residence halls and college-owned houses.

Dining Rooms—Students living in the residence halls have their meals in the dining rooms maintained on the campus. Rates are established on a room-and-board basis. These rates may vary slightly depending upon location and size of the room as well as upon any marked fluctuations in food costs. Such changes are authorized by the Board of Trustees. Notification of changes in rates is given at least 30 days in advance of any school quarter.

Married Student Housing—There are 90 temporary apartment units in the Jackson Field Housing Project for students with families. These furnished apartments are provided with heat, electricity, and water.

There are an additional 98 permanent two-bedroom furnished apartments available for students and their immediate families. These units are located on college-owned property near the residence halls on the east campus between 17th and 18th Streets. Applications for rentals are made to the Director of Student Housing, Colorado State College. A \$50 deposit must accompany an application for all married housing units.

Loan Funds

Loan funds available to students are administered by a Committee on Loans which determines from time to time the policies and regulations under which loans may be made to students and approves all loans. All applications for loan funds are to be addressed to the Director of Financial Aid, Colorado State College.

Colorado State College participates in the American College Testing Program for the determination of financial need. All students seeking financial assistance are required to submit a copy of the Family Financial States (FFS) to the proper agency by February 15, designating Colorado State College as one of the recipients. The FFS forms may be obtained by contacting the Director of Financial Aid at Colorado State College.

National Defense Education Act Student Loan Program—Colorado State College has been approved as a participant in the National Defense Student Loan Program authorized by the Federal Government. Loans are available to college students in need of financial assistance to be able to attend college. Repayment provisions are especially favorable to graduates in teacher education who enter the teaching profession. Undergraduate students are given preference for such loans. Graduate students may borrow when money is available. Address inquiries to the Director of Financial Aid, Colorado State College.

United Student Aid Fund Loan Program—Colorado State College is collaborating with the United Student Aid Fund Loan Program whereby qualified students may obtain loans at cost from their local banks in most states. These loans are available to graduate students. For a student who qualifies under Federal Law, the Federal Government will pay the seven per cent interest until repayments are due to begin and three per cent interest while the student is repaying the loan. A fee of one-half of one per cent a year of the amount of the loan for the term of the loan is paid in advanced by the student. A maximum of \$1,500 may be borrowed for an academic year. Application forms are available at the Office of the Director of Financial Aid, Colorado State College.

Federal Low-Interest Bank Loans—Colorado State College also participates in the Federal Low-Interest Bank Loan Program which is the same type of program as the United Student Aid Fund Loan Program. The maximum is increased to \$1,500.00 for undergraduate and graduate students. In the State of Colorado, the program is administered by the Regional Office of Education in Denver for the state and the Federal Government. Outside the State of Colorado, students contact their State Department of Education to find out whether they are cooperating with United Student Aid Funds, Inc. or have their own administering agency. In the latter case, it will be necessary to obtain an application form used by the local administering unit designated by their state of residence. Additional information is available at the Office of the Director of Financial Aid, Colorado State College.

Scholarships

The Oliver M. Dickerson Memorial Scholarship—This fund was established to perpetuate the memory of Oliver M. Dickerson by providing a fund, the income of which shall be at least \$1,000 annually, which amount is to be awarded annually to an able and deserving college graduate recommended by the Scholarship Committee of the Department of History to do graduate work for an M.A. degree in the field of history at Colorado State College.

The Elizabeth P. Hall Memorial Graduate Scholarship in Biology—The Elizabeth P. Hall Memorial Graduate Scholarship of \$500 is established to assist in the continued education for one year of the most promising baccalaureate graduate specializing in any biological science, who would be unable otherwise, for financial reasons, to enter the Graduate School of Colorado State College. The recipient will receive during the ensuing academic year ten installments of \$50 each.

STUDENT ACTIVITIES

All campus organizations must apply each year through the Student Council to the Department of Student Personnel for charter approval. When organizations are recognized by the Student Council and the Department of Student Personnel, facilities of the campus, set aside for such purposes, may be used by the groups. The Activities Manager in the College Center is in charge of student activities.

College Center—All student activities are housed in the College Center. Located on 19th Street between 10th and 11th Avenues, the Center is designed to be the hub of campus community life. Most College Center facilities are open to all faculty, staff, students and visitors on a regular weekly schedule. The Center staff is coordinated by a Director, assisted by the Activities Manager, Food Services Manager, Book Store Manager, Recreation Supervisor and Building Services Supervisor.

Student Government—Student government and activities on the campus are administered by the members of the Associated Students under the direction of the Department of Student Personnel. The Associated Students elect in the Spring Quarter a student governing body, the Student Council. The Student Council serves in the succeeding school year.

Students registered for seven or more quarter hours of credit on the campus are automatically members of the Associated Students and are entitled to all regular college services and privileges accorded to this group.

Membership in the Associated Students permits students to attend most cultural, social, dramatic and athletic events without additional charge. Two student publications, the *Mirror*, weekly newspaper, and the *Cache la Poudre*, annual yearbook, are provided without charge to members. Facilities of the College Center are also available to members.

The student government does not function during the Summer Quarter, but comparable activities are provided to students under the direction of the Director of Summer Quarter and the Director of the College Center.

Athletics—The athletic activities of the college are governed by a Board of Athletic Control on which both students and faculty are represented. Intercollegiate athletic programs are scheduled in football, basketball, baseball, field and track, wrestling, swimming, gymnastics, tennis, and golf. Gunter Hall and Jackson Field athletic stadium, afford ample facilities for the major indoor and outdoor sports.

Colorado State College is a member of the Rocky Mountain Athletic Conference, and is bound by the rules of that body in governing eligibility of athletics and the conduct of students at or in connection with athletic events.

Little Theatre of the Rockies—The Little Theatre of the Rockies presents several outstanding plays during the school year. Students may try out for parts in the plays or work as stage carpenters, electricians, property managers, etc.

Religious Program—The college emphasizes the values of a religious life and encourages students to attend churches of their choice. Greeley is noted as a city of churches. Most denominations are represented by an active church. There are several student religious groups on the campus.

Music Organizations—The music program is an important part of college life. Qualified students are eligible to participate in the choirs, the college bands, the college orchestra, and the Greeley Philharmonic Orchestra. During the academic year, the School of Music presents special programs.

FINANCIAL INFORMATION

Quarterly Tuition and Fees

Required Tuition and Student Services Fees are incurred and collected during each quarterly registration period. Charges are assessed for the total of partial or full programs whether arranged for credit or audit. Assessments are uniform for each quarter and depend on the assigned status of the student as a resident or non-resident of Colorado.

On-Campus Instruction

FALL, WINTER, SPRING OR SUMMER QUARTERS

	Colorado Resident	Non-Resident
Six Credit Hours or less:		
Per Credit Hour of Enrollment.....	\$ 12.00	\$ 12.00
More than six credit hours:		
Tuition	85.00	235.00
Student Services Fees	38.00	38.00
Total	\$123.00	\$273.00

SUMMER QUARTER

	Colorado Resident	Non Resident
Six Credit Hours or less:		
Per Credit Hour of Enrollment	\$ 12.00	\$ 12.00
More than six credit hours:		
Tuition	85.00	235.00
Student Services Fees	30.00	30.00
Total	\$115.00	\$265.00

Off-Campus Instruction* (Extension—Continuing Education Services)

	Tuition Per Credit Hour	
Group Instruction	\$ 12.00	(Multiply credit
Correspondence Study	12.00	hour unit by
Research Study Credit*		number of
Doctoral Programs	12.00	credit hours of
		enrollment.)

*Residence status is not determined for or applied to these unit programs.

Payment of Tuition and the Student Services Fee entitles the registrant to instruction and a number of campus services.

On campus in the academic year a student enrolled for six or fewer credit hours is entitled to the services of the Student Health Center, library privileges, normal course materials, the student newspaper and the use of College Center facilities.

On campus or on student teaching assignment in the academic year, a student enrolled for seven or more credit hours is entitled to obtain every regular college service accorded to full-time registrants. In addition to the services above listed, the student is issued an identification card or validation stamp, which provides for admission to campus athletic events, performing art plays and productions, selected lectures and other public events specified for admission under the I.D. card. The college annual, *Cache la Poudre*, will be issued also each spring quarter to a student in residence who has enrolled for seven or more credit hours in each of the three quarters of the academic years. Full-time students are also covered by a student health services program. Details of this coverage may be obtained from the Student Health Center.

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During the Summer Quarter, the Student Services Fees do not provide for contractual medical treatment or hospitalization service. They are committed for use in an expanded and varied program of campus social, recreational and instructional activities as well as carrying the costs of the campus health offices.

The right of a student to classification as a resident for tuition payment purposes in a state institution of higher education is determined under state policy—Colorado Revised Statutes 1966 and Session Laws of Colorado 1967 as amended. Administrative procedures which fix status before or at the time of registration have been approved by the Trustees of the State Colleges in Colorado. If, following a registration and payment of tuition, the status conferred on a student is questioned for revision, appeal may be made on a specific form and the case will be reviewed by the College Committee on Residence Status. The determination by the committee following the review is final. All matters concerning residency status rulings shall be filed with the Office of the Registrar, where referrals will appropriately be made to the College Committee on Residence Status.

In planning a full program of courses, the typical single student on campus should be prepared to meet costs of approximately the following amounts:

	Status	
	Resident of Colorado	Non-Resident of Colorado
FALL, WINTER, AND SPRING QUARTERS		
Tuition and Student Services Fee.....	\$ 369.00	\$ 819.00
Books and Supplies (estimated).....	240.00	240.00
Board and Room (average).....	860.00	860.00
*Personal Expenses	350.00	350.00
Total Expenses Academic Year of Three Quarters	\$1,819.00	\$2,269.00
SUMMER QUARTER, EXCLUSIVELY		
Tuition and Student Services Fee.....	\$ 115.00	\$ 265.00
Books and Supplies	80.00	80.00
Board and Room	290.00	290.00
*Personal Expenses	115.00	125.00
Total, Full Quarter	\$ 600.00	\$ 760.00

Incidental Extra Fees Applicable Under Specified Conditions

Certified Statement of Issuance of Teaching Certificate and/or diploma.....	1.00
Change of Program: Assessed for each add-drop slip processed	2.00
Extension of Credit: Assessed if and when a deferred payment program is concluded to be effective within a quarter.....	3.00
<p>Assessed charges are due and payable at registration in each quarter. Deferments are arranged only for sufficient cause and only for payments by installments within the quarter. Any action which has the effect of postponing a cash collection beyond the date on which a charge is due will automatically invoke the applicable extension of credit charge. No registration is permitted without a down payment of at least one-third of total charges. No deferment is issued for a limited course program or for a campus residence of one month or less.</p>	
Late Registration Fee: Assessed for registration after scheduled registration time	5.00

*Amounts given for personal expenses are the estimated normal expenses incurred for clothing, sundries, entertainment, etc. Travel, unusual expenses of a wardrobe or auto maintenance should be added. Family expenses follow the regular family budget elsewhere maintained except for quoted college expenses. Graduate fees, music fees and certain incidental fees below must also be added to the above estimates where applicable.

Assessed for each added day of late registration	2.00
(Late Fee Payment and Late Registration Fees will be coordinated to present double assessment.)	
Late Application for Graduation: Assessed for application made later than 30 days prior to the quarter of graduation	10.00
Late Fee Payment: Assessed for a fee payment completed on the first day following the day scheduled for regular fee payment	5.00
Assessed for each added day of late fee payment	2.00
Meal ticket replacement	5.00
Official Transcript of College Records, per copy	1.00
Optional Student Health Insurance Coverage Summer Quarter Only	10.00
(Full-time students for 1969-70 academic year have prepaid coverage for the Summer Quarter).	
Proficiency Examination	2.00
Reading Improvement Programs:	
1. Reading Center Diagnosis	40.00
2. Reading Center Group Tutoring, per clock hour	2.50
3. College Study Skills Laboratory Registration, per quarter	10.00
Special Billing: Assessed when an itemized invoice of an account is requested by the student or a supporting agency	1.00
Special Examination: Assessed when permission is granted to take an examination at a time other than regularly scheduled	5.00
Special Program Fees such as bowling, skiing, field trips, golf, etc.	At Cost
Special tests by the Counseling Service	5.00
Student Identification Card Replacement	5.00
Transcript Evaluation Fee for applications for the baccalaureate and master's degrees and graduate student certification program	10.00

Fees Added for Graduate Study

Doctoral Research Studies* (assessed to each doctoral applicant in successive quarters of enrollment up to six quarters) for a total (minimum-maximum) of \$300.00. This fee is assessed as follows:

First quarter	\$25.00
Second quarter	25.00
Third quarter	50.00
Fourth quarter	75.00
Fifth quarter	75.00
Sixth quarter	50.00

Doctoral Research Abstract Publication (assessed at the time when the study is accepted)

40.00

Specialist in Education Research Studies* (assessed to each applicant in successive quarters of enrollment up to three quarters) for a total (minimum-maximum) of \$75.00. In sequence of registrations, the fee is payable as follows:

First quarter	25.00
Second quarter	25.00
Third quarter	25.00

*Enrollees in the doctoral or the specialist program pay all tuition and fees applicable to each regularly registered student in each quarter of attendance plus the applicable fees listed above. No Specialist in Education Research Studies fee may be used as partial payment of the Doctoral Research Studies fee. Each specialist and doctoral student *must* report to the Graduate School station a registration to have the appropriate quarter Research Studies fee assessed.

Doctoral candidates, when requesting registration for research credit (usually during the quarter in which the study is accepted) will pay \$12.00 tuition per quarter hour of research credit recorded in lieu of the tuition and Student Services Fees.

Any unclassified graduate student who possesses the Master of Arts degree and who subsequent to enrollment elects to enter the Specialist in Education degree program or the Doctor of Education degree program will be charged research studies fees commensurate with the amount of unclassified credit made.

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Binding and mailing Master's Thesis, Practicum or Doctoral Research Study (4 copies required)	16.00
Comprehensive Examination Retesting Fee	10.00
Foreign Language Examination required for doctoral program	10.00
Writing Laboratory for Graduate Students (required of students assigned to the laboratory following tests)	10.00
Graduate Record Examinations: (Area Test in Social Science, Natural Science and Humanities) (for specialist and doctoral students)	5.00

Fees for Music Instruction

Individual music lessons, per quarter	
Music Majors	\$12.50
Other college students	15.00
Persons not enrolled in the college or affiliated schools	25.00

Placement Center Charges

(The placement year begins July 1 and ends June 30)

Initial enrollment	10.00
Re-enrollment (Teacher Education)	10.00
Re-enrollment (Liberal Arts or Industrial Placement)	5.00
First and subsequent copies of teacher placement credentials mailed when applicant has not re-enrolled, per copy	2.00
First and subsequent copies of industrial placement credentials mailed when applicant has not re-enrolled, per copy	1.00
Telephone calls, telegrams, postage for Air Mail and Special Delivery are billed at actual cost.	

Policy on Reassessments, Refunds, Retentions on Withdrawal

By action of the Trustees of Colorado State College, adjustments in tuition or fees are permitted after registration only under specified conditions. In most circumstances, when allowed, changes in a course of study resulting in an increased or decreased registration for credit hours will not affect the charges initially assessed. When on a net basis, not more than two courses are dropped or added within the grace period of one week, the Change of Program Fee alone is applied. Program rebuilding, if advised and approved, will require a reassessment of charges.

To be eligible for a refund of any kind, the student must present a formal, approved Notice of Withdrawal or an Add-Drop Slip at the Accounting Office. The Records Office and Housing Office in the Department of Student Personnel will provide information on the application procedures required. Refunds are not prorated; rather, they are made in terms of the below policy statements and the Residence Hall Lease.

Refunds allowed against paid Tuition and Student Services Fees upon withdrawal are provided as follows:

On programs of three credit hours or less, none.

On programs of four through six credit hours, one-half if withdrawal occurs in the first two weeks following registration; thereafter none.

On programs of seven or more credit hours, three-fourths if withdrawal is before the close of the second week, one-half if before the close of the third week, one-fourth if before the close of the fourth week, and thereafter none.

Refunds allowed against assessed quarterly board and room charges and annual apartment rentals are permitted under the terms of the Residence Halls Lease. The Housing Office, when consulted at withdrawal, will provide information on the computations applied. Deposit refunds are calculated separately and apart from board and room charges and are remitted or credited only after all requirements of a withdrawal in good standing are met.

Incidental fees are not refunded for any cause at any time.

Residence Hall Charges

All rates quoted shall apply to the Summer and Fall Quarters of 1970 and the Winter and Spring Quarters of 1971, but are subject to a continuous provision of the Trustees that the college reserves the right to change Tuition, Fees and other charges on notice not later than thirty days prior to the beginning of any school quarter. All prices quoted include applicable taxes.

	Quarterly	
	Minimum	Maximum
All Residence Halls		
Single student occupancy, two persons per room.....	\$283.00	\$298.00
Occupancy, single person per room (available in summer quarter only)	333.00	333.00
Board Service Only		
Is available at the Residence Halls on a contract basis for students living off-campus.		
Turner Hall (Apartment style accommodations)		
Room only		
Per person per quarter		125.00
Board only (including tax)		
Breakfast only		47.00
Lunch only		78.00
Dinner only		94.00
Family facilities (limited to the student and three dependents; not available for single students) summer only per family, 10 weeks.....	235.00	250.00

	Monthly	
	Minimum	Maximum
Apartments, Student-Family Development, East Campus (includes furnishings and utilities).....	\$115.00	\$115.00
Apartments, Jackson Village	42.00	50.00
All rentals are restricted to student families.		

	Per Week
Partial Session—Summer Session Only	
Board and Room Men or Women's Residence	
Occupancy, two persons to a room.....	31.00
Occupancy, single person per room.....	\$35.00
Occupancy, where permitted for an approved partial session of eight weeks or less, shall be at the above per week rates. Sessions of nine or more weeks shall be assessed at the full session (10 weeks) service rate quoted above.	

Address the Housing Office, Department of Student Personnel, when applying for any type of campus housing. A deposit of \$50.00 must be advanced to confirm a reservation. If it is decided not to attend Colorado State College, and a written statement is received by the Housing Office to that effect, the policy in regard to refunds will be as follows:

FALL QUARTER: When cancellations are received prior to August 15, \$25.00 will be refunded. Cancellations received on or after August 15, or no notice of intent to forego attendance at the college result in a full forfeiture of the deposit. **WINTER QUARTER:** When cancellations are received prior to November 15, \$25.00 will be refunded. Cancellations received on or after November 15 or no notice of intent to forego attendance at the college result in a full forfeiture of the deposit. **SPRING QUARTER:** When cancellations are received prior to February 15, \$25.00 will be refunded. Cancellation received on or after February 15 or no notice of intent to forego attendance at the college result in a full forfeiture of the deposit. **SUMMER QUARTER:** Cancellations received prior to May 15, \$25.00 will be refunded. Cancellations received on or after May 15 or no notice of intent to forego attendance at the college result in a full forfeiture of the deposit. A housing deposit for a student who is in assigned college housing will be held during all consecutive reservation periods and the full period of residence. Penalties assessed for damages to property, when incurred, will be deducted from the housing deposit and any remaining balance returned by mail in approximately sixty days after campus residence terminates.

A residence halls lease (housing contract) cannot be terminated unless the student withdraws from college or marries. When a student withdraws from college and vacates a college residence prior to the end of a school quarter, he forfeits the deposit and receives no credit on the rental for a room or apartment. Refunds on charges for board are provided by calculating all days remaining in the quarter and the account is then accredited or refunded from the balance assessed.

Major Facilities Provided in College Housing

A resident of a college dormitory or fraternity-sorority residence is expected to provide his own towels and personal linens. The college furnishes and launders college-owned sheets, pillowcases, mattress pads, blankets, certain couch covers and drapes. Residence Halls contain all furniture required; the student is not encouraged to provide supplements to the college pieces available. All residence halls rooms contain Centrex-connected telephones at no added cost. Board service is provided cafeteria style and scheduled for twenty meals per week. Board and room during the academic year for single students is provided and priced with no deviations from the standard plan authorized.

A resident of a student-family apartment is offered a skeleton set of furnishings in the Temporary Housing Project (Pre-Fabs). Permanent apartments contain all furniture required. All utilities are provided for apartments except telephones. During Summer Quarters, married student and student-family apartments are available in designated, converted residence halls with all facilities adequate for housekeeping. Consult the Housing Office for added information when desired.

GRADUATE ACADEMIC INFORMATION

Program—Colorado State College offers advanced programs of professional work leading to the Master of Arts degree, Specialist in Education degree, Doctor of Education degree, and Doctor of Philosophy degree. Graduate study was first offered during the Summer Session of 1913, and the first master's degree was conferred in June, 1914. In 1929 the Board of Trustees authorized the college to provide a program leading to the doctoral degree, and in 1952 the specialist's degree was approved.

Organization—The members of the Graduate Faculty are designated by the President of the College from the regular faculty, after nomination by the appropriate Deans and department chairmen, and approval by the Dean of the Graduate School. The Graduate Faculty establishes the policies for graduate work. In the interim between meetings of the Graduate Faculty, the Graduate Council serves as the legislative body. Members of the Graduate Council are elected by the Graduate Faculty. Graduate Council meetings are held on Thursdays from 2:30 to 4:00 p.m. in the Faculty Senate Room.

Admission—Candidates for all graduate degrees must file with the Dean of the Graduate School an application and two copies of certified transcripts of all previous academic credits *thirty days before registration*.¹ The application for the Master of Arts degree must be accompanied by a \$10.00 transcript evaluation fee. This fee is non-refundable. The College requires that the Graduate Record Examination Aptitude Test (verbal and quantitative) scores accompany the doctoral application. If a student scores below the minimum acceptable score in the Aptitude Test he will be denied admission to the doctoral program.

Following admission of the student, one copy of his application and one copy of the transcript(s) are placed in *his* file in the Graduate School Office. Two Xerox copies of the application (including the Graduate School Office. Two of admission and the time limit to complete the degree) and one copy of the transcript(s) are sent to the major adviser *via* the department chairman or school dean who has made the appointment of the major adviser. The adviser should keep one copy of the application (ADVISER'S COPY) and the transcript(s). The other copy of the application (STUDENT'S COPY) should be handed by the adviser to the student. This copy serves as a contract between the institution and the student. *Initial admission* to any graduate program remains valid for one calendar year. If admission requirements have been changed after one year has elapsed, the student must satisfy the new requirements.

Health—Prior to final admission and following a medical examination by a qualified medical practitioner, a student shall submit to the Student Health Service of the college a health report which is acceptable to the staff of the Student Health Service indicating the student is in good physical and mental health, has no communicable disease, and has no defects or deficiencies which would hinder satisfactory progress in his curriculum.

Photograph—Each student is required to furnish two photographs, application size of 2 by 3 inches, for the official files of the college. These photographs are for identification purposes only and not a criterion for admission.

Course Work May Count for Next Degree—Students in the last quarter of academic study for one degree may register for graduate courses which are in excess of the requirements for that degree when application for admission to the next higher degree program has been filed prior to the final quarter. If a student is admitted, he must complete a Petition to Count Work on the Next Higher Degree in the quarter *prior* to enrolling in the courses(s). Students will be held for final examinations in the courses taken for the next higher degree.

¹Foreign students must file application and transcripts sixty days before registration.

Registration and Advisement—The Dean of the Graduate School will request the department chairman or school dean to appoint an adviser for those students who have completed admission requirements. All degree programs will be planned with and approved by the student's adviser.

If a student wishes to change his major, he must complete a Request For Change of Major form at the Graduate School Office. The request is forwarded to the departments involved for acceptance or rejection and the departments will return the form to the Graduate School Office. If permission is granted, the Dean of the Graduate School requests the new department chairman to appoint an adviser and notifies the former adviser of the change.

Unclassified Graduate Student—Graduate students who are not candidates for advanced degrees or who have not been admitted officially to a degree program will register as unclassified students. Each student is urged to apply for a degree program at the beginning of his graduate experience. None of the work taken by a graduate student who is enrolled in an unclassified status may be counted in meeting the minimum residence requirements. All residence requirements must be completed after the student has been admitted to a degree program. The Assistant to the Dean of the Graduate School, or one designated by him, must sign the registration forms of all unclassified graduate students. If an unclassified graduate student later decides to apply for admission to a degree program, a maximum of one quarter (or 15 quarter hours if the student carried *only one* course per quarter) of completed unclassified graduate work may be counted in his degree program if not needed to satisfy the minimum grade point average for admission.

Competency in English Usage—All classified graduate students, and all graduate students enrolled in a Teacher Certification program, are required to take the English usage examination, consisting of an objective English usage test and an essay. The essays are read independently by two members of the English Department and their judgment on the worth of the essays is *final*.

Students scoring in the 80th percentile and above in the English usage test are excused from the Writing Laboratory for Graduate Students.

Students in the Master of Arts program scoring in the 20th through the 79th percentiles in the English usage test are excused from the Writing Laboratory for Graduate Students providing they have written an acceptable essay.

Students in the Specialist in Education, Doctor of Education and Doctor of Philosophy programs scoring in the 40th through the 79th percentiles are excused from the Writing Laboratory for Graduate Students providing they have written an acceptable essay.¹

A non-credit Writing Laboratory for Graduate Students (ID 302) will be required of those students who fail to meet minimum standards on the English usage examination. During the quarter that a student registers for ID 302, he shall not register for more than 16 additional credit hours. Students who are required to enroll in the Writing Laboratory must attain a satisfactory level of proficiency. Students who fail to satisfactorily complete ID 302 by the end of their second attempt will have their degree programs terminated. This requirement must be met before a student will be permitted to take the comprehensive examination in any degree program.

English Proficiency for International Students—The Test of English as a Foreign Language (TOEFL) is required by Colorado State College for all students with a native language other than English. The TOEFL test is given periodically at testing centers throughout the world. Arrangements to take this test can be made by writing to the following address:

Test of English as a Foreign Language
Educational Testing Service
Princeton, New Jersey, U.S.A., 08540

The TOEFL scores must be sent to the Graduate School Office, Colorado State College, when applying for admission to a graduate degree program.

Effective Dates of this Catalog—The effective dates of this catalog are from June 1, 1970 to May 31, 1971. Students *enrolling* for the first time at the college during these effective dates will follow the regulations and requirements in this catalog until their graduation.

Student Responsibility—The graduate student is expected to know the requirements for the degree he plans to earn. While the personnel of the Graduate School Office and the student's adviser will endeavor to aid in every way possible, the responsibility for any error in his enrollment or in the interpretation of the rules rests with the student.

Course Load, Credit, and Off-Campus Courses—The normal load for graduate credit applicable to a degree is fifteen hours per quarter. Overloads (16 to 19 quarter hours) must be approved by the Dean of the Graduate School. Under no circumstances may a student count in a degree program more than 19 hours of course work in a quarter.

A student holding a full-time teaching contract may count in a degree program only one course not to exceed five quarter hours during any quarter in which he is in full-time employment.

With the exception of SFE 240, SFE 250, SFE 251, SFE 252, SFE 260, SFE 261, and SFE 262, all courses bearing catalog numbers of 200 or above carry graduate credit.

Graduate credit is not given for any course taken by correspondence.

A student may register for a class for no credit by paying appropriate tuition fees. No audit or visitors cards are issued.

A student may earn a maximum of nine quarter hours of credit applicable to the master's degree and a maximum of fifteen quarter hours of credit applicable to the specialist or doctoral degrees in off-campus courses or Tele-Lecture courses taught by regular full-time Colorado State College faculty members.

Grading System—Alphabetical grades are used: A, B, C, D, F. Other marks used are "Inc." incomplete; "W" approved withdrawal; "TF" unapproved withdrawal; "WF" failing at withdrawal; "S" satisfactory or "U" unsatisfactory for ID 423, Doctoral Dissertation. An "Inc." must be removed within the first four weeks of the succeeding quarter or it automatically becomes a grade of "IF."

Each of the letters of the grading system has a numerical value. The letter "A" has a value of 4 points per unit of credit; "B" a value of 3 points; "C" a value of 2 points; "D" a value of 1 point; and "F" a value of zero.

No student grade can be changed after the first two weeks of the quarter following the receipt of the original grade by the Recorder.

Late Enrollment—No student will be permitted to enroll in a course after the first week of the Fall, Winter, Spring and Summer quarters. This regulation applies to new registrations and to students wishing to change programs.

Attendance at the first day of every class is of utmost importance to the student, the faculty, and the staff; hence all students are expected to register at the designated time and attend the first meeting of each class. The late registration fee will be charged all students who complete registration later than the stated catalog date.

Attendance—Regular attendance in all classes will be assumed and encouraged. The instructor will determine the relationship between class attendance and the objectives of his class and the way in which he will evaluate attendance as a factor in the achievement of the student.

The instructor has the responsibility to inform students of his policies as these policies relate to the students' grades. The student also has the responsibility of knowing the policies in each course.

Withdrawal from Class—No withdrawals from classes are permitted during the last two weeks of a quarter. If a student discontinues class attendance he must withdraw *officially* from the course or a grade of TF (Technical Failure) will be recorded.

¹Master of Arts students continuing into the doctoral or specialist degree program who scored in the 40th percentile or above on the English usage test and who were judged competent on the written essay, hence exempted from the ID 302, Writing Laboratory for Graduate Students, are excused from retaking the English usage examination. Students who pass the Writing Laboratory in one degree program have satisfied the English Usage requirement for all graduate programs.

Final Examinations—A final examination in each class is to be taken by the student on the dates officially announced. Students granted permission to take a final examination at times other than officially scheduled must pay a fee.

The schedule of final examinations is printed in the Schedule of Classes published each year. Final examinations are usually scheduled during the last three days of the quarter.

Citizenship Standards—A student is expected to be a good citizen of his college community. When a student shows evidence of lacking any of the essential qualities of scholarship, health, and character, he may be suspended by the college.

Speech Skills—A student is expected to have such speech skills as will enable him to progress satisfactorily in his chosen curriculum and to perform adequately when in his later vocation.

Graduation Exercises—Participation in Graduation Exercises is required unless the student has been excused. Graduating graduate students may obtain forms in the Graduate School Office for requesting an excuse from Graduation Exercises.

It is the student's obligation to keep the Graduate School Office informed at all times in regard to his graduation plans, such as: any change in the proposed quarter of graduation after the application for graduation has been filed, any change of address, etc.

Course Numbers—The course numbers are divided into three groups: (a) 1 to 199 may be taken for undergraduate credit only; (b) 200 to 299 may be taken by undergraduates for undergraduate credit and by graduates for graduate credit;¹ (c) 300 to 499 may be taken for graduate credit only. 400 to 499 courses are for doctoral and specialist candidates only.

Course Descriptions—Courses offered are listed alphabetically by departmental prefix. The course description gives the course number and title, the quarter hours of credit offered, and explanation of the content of the course.

Schedule of Classes—The college publishes a Schedule of Classes Bulletin which lists courses being offered during Fall, Winter and Spring Quarters. Courses offered in the Summer Quarter are listed in the Summer Bulletin.

English Style Form Standards—A *Manual for Writers of Term Papers, Theses and Dissertations*, Third Edition, Revised, by Kate L. Turabian, is the standard style form to be followed for all written material. There are exceptions in some departments and schools and the student should check with his major department to determine the specific style form to be used in that discipline. Turabian manual is available for purchase in the College Bookstore.

Limitations on Enrollment—

1. Members of the faculty of Colorado State College above the rank of instructor are not permitted to enter any graduate degree program.
2. Only one doctorate may be earned at this institution.
3. A student who has earned two degrees at this institution must secure approval from his major department to pursue another degree at Colorado State College.
4. Minimum Grade Point Average to Continue in Degree Programs:
 - a. Doctoral grade point average—A doctoral student must maintain a cumulative 3.0 grade point average. If he drops below 3.0 one quarter, he is sent a warning letter. If he drops below 3.0 a second quarter, his degree program is terminated. If the student was granted *conditional admission* and he does not maintain a 3.0 grade point average during his first quarter (or first fifteen quarter hours if the student carried *only one* course per quarter) his program is terminated at the end of the first quarter. If the *conditional admission* student's cumulative grade point average drops below 3.0 at the end of any quarter, his program is terminated. A student must have a 3.0 grade point average *before* credit may be given for his dissertation.

¹With the exception of ID 222, SFE 250, SFE 251, SFE 252, SFE 260, SFE 261, and SFE 262, all courses bearing catalog numbers of 200 or above carry graduate credit.

- b. Specialist grade point average—A specialist student must maintain a cumulative 3.0 grade point average. If he drops below 3.0 one quarter, he is sent a warning letter. If he drops below 3.0 a second quarter, his degree program is terminated. A student must have a 3.0 grade point average *before* credit may be given for his specialist practicum.
- c. Master of Arts grade point average—A master's student must maintain a cumulative 3.0 grade point average. If he drops below 3.0 one quarter, he is sent a warning letter. If he drops below 3.0 a second quarter his degree program is terminated. If he was admitted on a 60 hours Master of Arts program and does not maintain a 3.0 grade point average during his first quarter (or first fifteen hours of course work), his program is terminated at the end of the first quarter. If his cumulative grade point average drops below 3.0 at the end of any quarter, his program is terminated.
5. If a student has any graduate degree program terminated because of low grade point average, or because of failure to pass the retake of the comprehensive examination, he may not be readmitted at this degree level in any field.

Teacher Education

GRADUATE STUDENT CERTIFICATION PROGRAM INFORMATION

Colorado State College offers a certification program for the individual who holds the Bachelor's degree in a non-teacher education program or who holds a Bachelor's degree in a teacher education program but now wishes a recommendation for certification in a different area. Students pursuing this CSC certification program are not automatically enrolled in a Master of Arts degree program. Separate application must be made to the Graduate School for the latter.

To enroll in the Graduate Certification Program, an individual must make formal application with the Graduate School for admission in order to pursue this program. The application must be accompanied by a \$10.00 transcript evaluation fee. The prospective student indicates in which teaching area he wishes to seek certification; i.e., elementary education or a specific secondary teaching area such as English or Chemistry. The Graduate School must be supplied with two complete and official transcripts of all previous work. An over-all grade point average of 2.3 is required to be admitted to this program. Also the student must submit a report of a health examination. A completed health report should be mailed to the Graduate School by the student's personal physician. Appropriate forms are available from the Graduate School.

Recommendation for teacher certification presupposes the successful completion of the three basic components of Teacher Education: 1. General Education; 2. Professional Education; and 3. Subject Matter Specialization. In order to secure a Colorado State College institutional recommendation for certification an individual must meet the College's standards as to quality and quantity in each of the three categories mentioned above with respect to work taken prior to coming to Colorado State College and after arrival on the campus.

GRADUATE CERTIFICATION PROGRAM: BASIS OF EVALUATION

- A. Satisfactory completion of college or university course work in the following areas: 1. Communications; 2. General Psychology; 3. Humanities; 4. Personal Living; 5. Science; 6. Social Science.
- B. Satisfactory completion of professional education courses which are the following: (students may receive exemptions on the basis of evaluation of transcripts from previously attended colleges or universities except as noted)

Professional Education:

Course No.	Course Title	Hours	Credit
EDHP	101—Basic Concepts of Education	5	
EDHP	295—Philosophy of Education	3	
*EDCI	140—Introduction to Student Teaching (for elementary certification).....	2	
*ELED	139—Introduction to Student Teaching (for secondary certification).....	2	
*EDCI	141—Methods of Teaching (for secondary certification only).....	3	
PSY	140—Educational Psychology	5	
*SFE	240-279—Student Teaching	18	

*These specific courses MUST be satisfactorily completed AT COLORADO STATE COLLEGE.

- C. Satisfactory completion of courses designated by the school or department concerned upon the basis of an evaluation of transcripts from previously attended colleges and universities. The Department of Psychology, Counseling and Guidance and the Department of Special Education require a second teaching area.

Once admitted to the certification program by the Graduate School, transcripts are forwarded to the Assistant to the Dean, School of Education for evaluation with respect to General Education and Professional Education. He, in turn, forwards the transcripts and evaluation form to the academic teaching area for evaluation with respect to the teaching area selected. An adviser is then appointed by the department involved. Every student thus evaluated will receive the original typed copy of the evaluation form which indicates exactly what course work must be completed in order for him to be recommended for certification. Information is available in Room 518, McKee Hall of Education.

ADVANCED TEACHER EDUCATION PROGRAM

Only students of definite professional promise are admitted to the Advanced Teacher Education Program (ATE) and allowed to pursue one of the teacher education curricula at an advanced level. Admission is based upon scholarship, personality, character and the physical characteristics requisite to successful teaching.

Graduate students who have been admitted to the Graduate School of Colorado State College for the purpose of meeting certification requirements automatically are afforded tentative admission to the Advanced Teacher Education Program (ATE) for their first quarter in residence. However, tentative admission does *not* constitute full admission. They must submit their applications for formal admission to ATE during the *first two weeks of the first quarter* of enrollment (not mailed in ahead of time).

The applications for ATE will then be checked and if they are complete, the graduate students who submitted them will be afforded a second quarter of probationary admission. A graduate student's application for formal admission will be reprocessed during his second quarter in residence and the student will be notified by letter of the Teacher Education Committee's action concerning the application. No formal admission is granted without a positive recommendation from the schools or departments offering the teaching programs for which recommendation for certification is sought; therefore, it behooves every graduate student seeking certification to obtain the guidance of his adviser at the time of his first registration concerning specific school or departmental requirements for recommendation for both ATE admission and certification. School or departmental recommendation implies satisfactory completion of work in programs related to basic school or departmental requirements. Application forms and directions may be secured from the School of Education office, Room 518, McKee Hall of Education.

During the first quarter on campus the student must satisfactorily complete an English usage examination which will consist of an objective English usage test and an essay. Students scoring between the 21st and 80th percentiles on the standardized examination may be excused from the Writing Laboratory for Graduate Students on the basis of creditable essay evaluation. Students scoring below the 21st percentile on the standardized examination will be held for the Writing Laboratory for Graduate Students. Students scoring above the 80th percentile are excused. Students are responsible for reading official notices in the college newspaper concerning time and place of the English usage examination. No graduate student will be afforded full admission to ATE until he has satisfactorily completed the English usage examination or met the Writing Laboratory requirement.

Any student who changes his teaching area after being admitted to ATE must file a new application for evaluation in the new teaching area.

If at any time after admission to ATE a department or school wishes to revoke its endorsement of a candidate a statement of desire for removal of the candidate must be presented to the Teacher Education Committee.

Any student admitted to ATE who is placed on probation or suspended by the college is automatically afforded the same status with respect to ATE. Students suspended and later readmitted to the college must reapply for admission to ATE.

Any student who has had his admission to ATE revoked or who has been denied admission to the Advanced Teacher Education Program may request a hearing from the Chairman of the Teacher Education Committee. The hearing shall be scheduled within ten days of the date the request is filed provided the college is in session at that time. The results of the hearing held by the Review Sub-Committee of the Teacher Education Committee shall then be transmitted in writing to the student within 24 hours.

STUDENT TEACHING AND INTERNSHIP

Quarterly student teaching assignments and year-long internships are made in cooperating school districts throughout the state. These placements are made with the approval of the Coordinator of Student Field Experiences upon the recommendation of the student's academic department and of the Teacher Education Committee.

The minimum requirement for a teaching certificate is 18 quarter hours. Only limited student teaching placements are available in the summer quarter.

The following requirements must be completed before beginning *student teaching*:

1. Completed at least two quarters as a full-time student on the college campus. (A minimum of 10 quarter hours per quarter is considered a full-time load for graduate students.)
2. Completed the following courses or an approved equivalent: PSY 140 and EDHP 101.
3. Completed a minimum of 18 quarter hours in Elementary Teacher Education courses including ELED 139, READ 222 or READ 223, and ELED 112 or ELED 312 if applying for student field work at the elementary educational level. At least one quarter must intervene between the completion of ELED 139, READ 222 or READ 223, and ELED 112 or ELED 312 at the beginning of student field work.
4. Met all specific departmental requirements for student teaching.
5. Completed EDCI 140, and 141 (or equivalents) in all subject matter areas, major or minor wherein secondary school student teaching is contemplated.
6. Been afforded *full* admission to ATE.
7. Been approved by the Teacher Education Committee for student teaching upon the recommendation of the appropriate department or school.

Students making application for student teaching must secure the approval and signature of their adviser.

Internship students must meet all of the above-mentioned prerequisites and also complete certain other requirements as may be set by the Teacher Education Committee before beginning the intern assignment.

All students must file application in the office of Student Field Experiences. It is to be clearly understood that assignments are initiated and confirmed by the office of Student Field Experiences only and that students must be prepared to accept the assignment regardless of its geographical location.

Firm Quarterly application deadlines for student field experiences are as follows; all above requirements must be completed by these dates:

- For fall student teaching: May 15.
- For winter student teaching: October 15.
- For spring student teaching: February 15.
- For summer student teaching:
May 1 of the preceding spring term.
- For internship: March 1.

INTERDISCIPLINARY AND INDIVIDUAL STUDIES

Interdisciplinary Studies are offered in appropriate areas and levels of instruction. These courses may be offered through the coordinated efforts of two or more disciplines or by one department (Vocational Education) offering courses that are appropriate to several courses of study. (see below)

Individual studies are available in most disciplines. This type study involves a great amount of self-directed study on the part of the individual student under the guidance of an instructor. The following policies concerning registration apply:

1. The study must be an original project that can be completed only by independent study.
2. The study must be limited to four hours per quarter.
3. The study must be approved in the quarter before enrollment for the course.
4. Application for enrollment in either 222 or 322 must be made in writing to the Dean of the School. The application must have the approval, evidenced by signature, of the instructor who will direct the study, the student's adviser, and the Dean of the School in which the study is to be done.
5. The application must consist of a letter to the Dean of the School concerned stating the reasons for requesting approval for enrollment and an outline of the study describing the problem, the method of solution, the relationship of the study to the student's major field of interest, and the expected date of completion. The letter must state the subject matter field and the course number (222 or 322) and the local address. The student must also provide his student number and class (Freshman, Junior, Master's, Doctor's, etc.) in the application letter.
6. No application forms will be used since one of the requirements for the successful completion of individual studies is the ability to express ideas in writing and to organize information. The letter and outline will provide some evidence of the student's ability to work independently and report his ideas clearly.
7. No application will be approved for the purpose of substitution for a regular course.
8. An individual study must be done on the campus under the constant supervision of the instructor.
9. The class card will be made by Dean of the Graduate School, for ID 222-322.
10. The student's permanent record will indicate the subject matter field in which the study is made (Individual Studies-German).

MASTER OF ARTS DEGREE

Admission—A student must hold a baccalaureate degree from an accredited college or university to be admitted to a Master of Arts degree program. An overall grade point average of C+ (2.5) is required to be admitted. Applicants having a cumulative grade point average between 2.3 and 2.49 may be admitted by the Dean of the Graduate School on departmental recommendation accompanied by a statement of the reason for the recommendation. The Dean will take the recommendation of the department into account in making his admission decision. His decision shall be final.

Transfer of Credit—A maximum of eight quarter hours of graduate credit in which grades of A and B are recorded may be transferred from institutions approved by a recognized accrediting agency to offer a graduate program leading to the master's degree. No transfer credit shall be counted that was earned more than five years prior to *completion* of the degree. This credit must be compatible with the student's area of concentration and can not be used to meet the requirement that 22 hours of the course work must be in courses numbered 300 or above and taken in residence at Greeley. Student must complete a transfer of credit petition at the Graduate School Office. The request for transfer of credit must be made by the student in person (not by mail) and must be approved by the Assistant to the Dean, Graduate School, *prior* to securing approval of the major adviser. The student must return the completed transfer form and the official transcript to the Graduate School Office before any transfer of credit will occur. *No transfer of credit will be accepted after 4:00 p.m. Friday of the second week of the quarter in which the student plans to graduate.* Graduate credit is not transferable if earned in off-campus classes or in courses classified as "extension" unless these credits are acceptable toward a master's degree at the "parent institution." Transferred credit may not be used to make up "D" or "F" grades received in required courses.

Residence and Time Requirement—Candidates for the Master of Arts degree must satisfactorily complete a minimum of ten weeks attendance and ten quarter hours of graduate credit in the campus program each of two quarters in order to satisfy minimum residence requirements. All residence requirements must be completed after the candidate has been admitted to the master's degree program. Ten quarter hours credit equals two-thirds of a regular load, and by definition enables the candidate to be technically classified as a full-time student. The remaining requirements may be satisfied by regular full- or part-time attendance, or by a combination of part-time attendance and transfer credit. (See conditions of transfer of credit.)

The maximum time limit for completion of the graduate program for the master's degree is five calendar years. If the student does not complete his program within the time limit, his degree program will be terminated.

Introduction to Graduate Study—In the first quarter in residence all graduate students working toward the Master of Arts degree are required to register for ID 300, Introduction to Graduate Study.¹ In this course standards for graduate study, research methods, evaluation of printed research, bibliographical tools and other items will be emphasized. The candidate should take Introduction to Graduate Study and a course with his adviser during his first quarter.

Minimum Requirements for the Major—For the degree of Master of Arts, the student must have a minimum of 64 quarter hours of graduate and undergraduate credit in the major field. At least 24 quarter hours of graduate credit for the degree of Master of Arts must be in the field of the major and must be taken at Colorado State College.

¹Following course substitutions may be made in lieu of ID 300: Health, Physical Education and Recreation, HPER 302; Biogeological Science, BIO 357; Chemistry, at least CHEM 285 and two hours in CHEM 346; Elementary Education: Early Childhood, ELED 331; History, HIST 399; Mathematics (liberal arts), MATH 310, 3 hours; Mathematics (Teacher Education), MED 372; Music, MUS 300; Physics, at least four hours in PHYS 361; Science Education, SCED 373; Social Science with concentration in Sociology, SOC 371.

The student whose undergraduate record shows a high specialization in a few areas at the expense of general cultural background in the arts and sciences may be required to earn part of his graduate credit in these areas.

Specific Requirements for Graduation—In addition to the general requirements of the Graduate School and the departmental specific requirements for a Master of Arts degree, the student shall:

1. Earn a minimum of 45 quarter hours of graduate credit and maintain a 3.0 (B) grade average. At least 22 hours of this credit must be in courses open only to graduate students (courses numbered 300 and above) and taken in residence at Greeley.

Candidates electing to write a thesis must, 17 days before the end of the quarter in which they expect to graduate, present to the Graduate School Office four copies of the thesis in final typed form, approved and signed by the adviser. The thesis must be presented to the adviser for final reading by the beginning of the fourth week of the quarter in which the student plans to graduate.

After being signed and bound, three copies of the thesis become the property of the college and one is sent to the student. The original and one copy are filed in the college library, and one copy is delivered to the student's major adviser. A charge is made for binding and mailing the four copies.

The student must provide with each bound copy of the thesis an abstract of the study. In addition an extra copy of the abstract shall be filed with the student's record in the Graduate School Office.

With the approval of the adviser and the Dean of the Graduate School, a creative project in educational media, fine arts, literature, or music may be undertaken as the equivalent of the thesis for the master's degree. Upon the completion of the project, the student shall submit a detailed written explanation of its contribution to contemporary thought and life to be filed in the Graduate School Office at least 17 days before the end of the quarter in which the candidate plans to graduate. This paper must have the signature of the adviser.

A maximum of 15 quarter hours of credit is granted for the thesis or creative project.

2. Pass a written comprehensive examination in the major field. The student must obtain from the Graduate School Office a "Permit To Take Written Comprehensive Examination." His examination paper, after being evaluated by the adviser, will be filed in the Graduate School Office at least 17 days before the end of the quarter in which the candidate expects to graduate. The comprehensive examination may not be taken until the student has completed, or has in progress, the basic required program of his major, and has the approval of his major adviser and the Graduate School Office. (The English usage requirement must be met before a student will be permitted to take the comprehensive examination.)

In case of failure to pass the comprehensive examination the student may be permitted to retake the test. One quarter must intervene before the examination may be retaken. A special examination fee will be charged for this additional test. The student must pay the fee at the Accounting Office and present his receipt at the Graduate School Office to secure a permit for the retake. Failure to pass the retest will terminate the candidate's degree program.

If a student fails the comprehensive examination in one discipline and is permitted to change to another discipline, he may take the comprehensive examination only once in the new discipline.

Formal Application for Graduation—The student *must* make a formal application for graduation at the Graduate School Office not later than 30 days prior to the quarter in which the candidate expects to graduate. A late fee will be charged for failure to apply on time. *No application will be accepted after 4:00 p.m., Friday of the second week of the quarter in which the student expects to graduate.*

SPECIALIST IN EDUCATION DEGREE

The Specialist in Education degree program shall prepare one to be a specialist. It is not necessarily a program of more courses and more credits in the same departmental patterns as those usually found in the present master's and doctor's programs.

Each applicant for admission to the program will be considered as an individual case in terms of the area in which he wishes to specialize, his background and experience preparing him for such specialization, and the possibility of a program being provided to offer him the opportunity he desires. The applicant will be expected to have a very clear idea of his proposed area of specialization.

The college does not have the facilities, offerings, or staff to support all of the areas that might be suggested by the applicant. Programs may cut across departmental lines.

A candidate might wish to specialize in areas similar to the following:

- a. The Supervision of Student Teaching
- b. The Supervision of Science Instruction
- c. Conservation Education
- d. Testing in the Elementary School
- e. Consultant in School Buildings
- f. Curriculum Consultant
- g. Outdoor Education
- h. Information Specialist for Public Schools, Colleges, Universities, Business, Industry and Government
- i. Speech Communication

In some disciplines the course of study is partially or fully prescribed to satisfy certification requirements. A student should consult the departmental statement in the discipline of his interest.

Candidates who choose to continue work toward a doctoral degree on completion of the Ed.S. degree may apply for admission to the doctoral program. A maximum of 35 quarter hours of credit which have been earned in the specialist program and which are applicable to the doctoral degree may be transferred. These hours must be approved by all members of the student's Research and Examining Committee.

Preparation of Junior College or Community College Teachers—Since there is a large and growing demand for teachers in the various disciplines at the junior college or community college level, a student who holds a master's degree in a content area may desire to continue his preparation through the specialist degree and then seek employment in such institutions.

Admission—1. Although a master's degree from an accredited college or university is usually a prerequisite for admission, students may be admitted with a bachelor's degree from an accredited college or university and permitted to by-pass the Master of Arts degree requirements, depending upon the general nature of the specialist program which is requested. In such cases the student must earn a minimum of 90 quarter hours for the specialist's degree.

2. The applicant must have an adequate academic background in the areas involved in his plan of specialization. If inadequate, the Supervising Committee will require course work in addition to the minimum requirements of the Ed.S. degree.

3. The applicant must have an undergraduate and graduate scholastic average of 2.7 (B-) or better. An applicant may be admitted who is slightly below this level but has a satisfactory combined score on the quantitative and verbal parts of the Aptitude Test of the Graduate Record Examination.

4. Two years of successful teaching experience is a prerequisite for admission to work for the Specialist in Education degree (exception: Rehabilitation Counseling).¹

¹Psychology, Counseling and Guidance areas require as a prerequisite two years of teaching or equivalent psychological experience. One year of this experience must be obtained prior to admittance to the program. Educational Administration requires as a prerequisite sufficient experience to indicate probable success as an administrator.

5. In addition to the admission requirements, the applicant is required to take the Graduate Record Examination Aptitude Test; the Area Test in Social Science, Natural Science and Humanities; and a standardized English usage examination during his first quarter in residence. Colorado State College is a national center for administering the Graduate Record Examinations. The Aptitude Test and the Advanced Test in each discipline will occur on the Greeley campus on October 24, 1970, and on June 19, 1971. Applications forms to take the examinations may be secured from the Counseling and Testing Office, Cranford 112, or from the Educational Testing Service, 1947 Center Street, Berkeley, California 94704. A student must apply about three weeks prior to taking the test. The Area Test in Social Science, Natural Science and Humanities will occur at 8:00 a.m. on the second Saturday of each quarter: Fall; Winter; Spring; Summer. The fee of \$5.00 is payable at the Accounting Office, Frasier 11. The student must take his receipt to the Counseling and Testing Center to obtain admission to the test. The English usage examination will be given at 1:00 p.m. on the second Saturday of each quarter: Fall; Winter; Spring; Summer. There is no fee for the English usage examination, but the student must obtain a ticket of admission at the Counseling and Testing Center.

Advisement—When a student has been admitted to a specialist program, he is notified of his admission and that the chairman of the department of his specialization will appoint his Supervising Committee (major adviser and one additional member) with the approval of the Dean of the Graduate School.

Transfer of Credit—A maximum of eight quarter hours of graduate credit in which grades of A and B are recorded may be transferred from institutions approved by a recognized accrediting agency to offer a graduate program leading to specialist or doctoral degrees. No transfer credit shall be counted that was earned more than six years prior to completion of the degree. This credit must be compatible with the student's area of concentration and cannot be used to meet the requirement that 24 hours of the course work must be in courses number 300 or above and taken in residence at Greeley. The student must complete a transfer of credit petition at the Graduate School Office. The request for transfer of credit must be made by the student in person (not by mail) and must be approved by the Assistant to the Dean, Graduate School, prior to securing approval of the major adviser. The student must return the completed transfer form and the official transcript to the Graduate School office before any transfer of credit will occur. *No transfer of credit will be accepted after 4:00 p.m. Friday of the second week of the quarter in which the student plans to graduate.* Graduate credit is not transferable if earned in off-campus classes or in courses classified as "extension." Transferred credit may not be used to make up "D" or "F" grades received in required courses.

Residence and Time Requirements—Candidates for the Specialist in Education degree must satisfactorily complete a minimum of ten weeks attendance and ten quarter hours of graduate credit in the campus program each of two quarters in order to satisfy minimum residence requirements. All residence requirements must be completed after the candidate has been admitted to the specialist degree program. Ten quarter hours credit equal two-thirds of a regular load, and by definition enable the candidate to be technically classified as a full-time student. The remaining requirements may be satisfied by regular full- or part-time attendance, or by a combination of part-time attendance and transfer credit. (See conditions of transfer of credit.)

The maximum time limit for completion of the graduate program for the specialist's degree is six calendar years. If the student does not complete his program within the time limit, his degree program will be terminated.

Specific Requirements for Graduation—In addition to the general requirements of the Graduate School and the departmental specific requirements for the specialist degree, the student shall:

1. Earn a minimum of 45 quarter hours of graduate credit beyond the master's degree (90 hours if the student enters the program with only a baccalaureate degree) and maintain a 3.0 (B) grade average. At least 24 quarter hours of this credit must be in courses open only to graduate students (courses numbered 300 and above) and taken in residence at Greeley. The required practicum, ID 401, or its equivalent, hours may be counted to meet this requirement.

Specialized interests of the student for which no regularly scheduled courses are available will be cared for through Individual Studies (ID 322), Practice in School Administration (EDAD 345), Practicum (ID 301).

2. Complete the course, Introduction to Doctoral Research (ID 400), or its equivalent unless a comparable course on the graduate level has been completed and is accepted by the adviser.

3. Demonstrate that he has a knowledge and understanding in the three areas of Natural Science, Social Science, and Humanities. Candidates who fail to make satisfactory scores on the Area Test will be held for the Graduate Readings course(s). These requirements will be imposed in addition to the minimum requirements for the specialist's degree.

4. Present the Specialist Degree Practicum (ID 401) representing his major interest and for which eight quarter hours of credit will be given.¹ A written plan for the required practicum shall be filed in the Graduate School Office by the end of the eighth week of the second quarter in residence and must have been approved by the supervising committee. Supervising Committee is composed of the major adviser and one additional member who will direct the preparation and evaluation of the required practicum.

At least 17 days before the end of the quarter in which the student plans to graduate, four typewritten copies of the practicum which has been approved by the student's Supervisory Committee shall be filed in the Graduate School Office. The four copies will be bound. The original and one copy will be placed in the library, one copy will be delivered to the major adviser, and one copy will be sent to the student. A binding and mailing fee will be charged.

5. Pass a written comprehensive examination over his specialty and his practicum, and meet such other final requirements as his committee may prescribe. The student must obtain from the Graduate School Office a "Permit To Take Written Comprehensive Examination." This written examination, when approved, shall be filed with the student's records in the Graduate School Office at least 17 days before the date of graduation. (The English usage requirement must be met before a student will be permitted to take the comprehensive examination.)

In case of failure to pass the comprehensive examination the student may be permitted to retake the test. A special examination fee will be charged for this additional test. The student must pay the fee at the Accounting Office and present his receipt at the Graduate School Office to secure a permit for the retake. One quarter must intervene before the examination may be retaken. Failure to pass the retest will terminate the candidate's degree program.

If a student fails the comprehensive examination in one discipline and is permitted to change to another discipline he may take the comprehensive examination only once in the new discipline.

Formal Application for Graduation—The student *must* make a formal application for graduation at the Graduate School Office not later than 30 days prior to the quarter in which he expects to graduate. A late fee will be charged for failure to apply on time. *No application will be accepted after 4:00 p.m., Friday of the second week of the quarter in which the student expects to graduate.*

¹Students in Rehabilitation Counseling, and School Psychology, will be required to complete supervised field experience in lieu of the required practicum. Students in Rehabilitation Counseling will register for SPED 394, Supervised Clinical Practice in Rehabilitation Counseling, 16 quarter hours; students in School Psychology will register for PCG 390, Internship in School Psychology, 16 quarter hours. Students in School Counseling will be required to substitute three 3-hour practicums selected from PCG 410, 411, 413, 414, 415 in lieu of the required practicum.

DOCTOR OF EDUCATION AND DOCTOR OF PHILOSOPHY DEGREES

Admission—1. An applicant must possess at least a baccalaureate degree from an accredited college or university. Those students who enter the doctoral degree program with only the baccalaureate degree must earn a minimum of 135 quarter hours of credit. Those students who enter the doctoral degree program with the master's degree must earn a minimum of 90 quarters hours of graduate credit. He will be admitted if his previous academic average is B or better, and if he has a satisfactory combined minimum score on the quantitative and verbal parts of the Aptitude Test of the Graduate Record Examination. *The College requires that the aptitude scores accompany the doctoral application.*

2. Sixty-four quarter hours in professional education courses are prerequisites for admission to the doctoral program in Special Education,¹ forty quarter hours in English Education, and thirty-four quarter hours in Music Education.

Professional education courses necessary for a teacher to be certified to teach in his state are prerequisite for admission to Health and Physical Education, Mathematics Education, and Science Education.

3. Although teaching experience is not a prerequisite for admission, the candidate may be required by the department to obtain two years teaching experience before the degree will be conferred.²

4. In addition to the admission requirements, the applicant is required to take the Area Test in Social Science, Natural Science, and Humanities, as well as a standardized English usage examination during his first quarter in residence. The Area Test will occur at 8:00 a.m. on the second Saturday of each quarter: Fall; Winter; Spring; Summer. The fee of \$5.00 is payable at the Accounting Office, Frasier 11. The student must take his receipt to the Counseling and Testing Center, Cranford 112, to obtain admission to the test. The English usage examination will occur at 1:00 p.m. on the second Saturday of each quarter: Fall; Winter; Spring; Summer. There is no fee for the English usage examination, but the student must obtain a ticket of admission at the Counseling and Testing Center.

Continuation in Doctoral Program—1. All candidates must realize that the Graduate Council is directed to continuously provide realistic evaluation of student progress, and to discourage any student from continuing whenever it seems advisable. Multiple criteria (scores on the English usage examination; the Graduate Record Examination; Area Test; the faculty interview; the professional recommendations; recommendations from the major adviser and/or major department; and the cumulative grade point average for all prior work and for the first quarter in the program) are used to determine whether the candidate is to be either encouraged to continue, or denied further participation, in the program at the close of his first quarter of study.

Course Program—In the first quarter in residence, students in the doctoral program must enroll for the course ID 400, Introduction to Doctoral Research, or in a substitute course recommended by the major adviser.³

Not later than the second quarter in residence, the candidate will work out a long range program of studies with his adviser. One copy of this proposed program will be placed in the student's folder in the Graduate School Office; one copy will be presented to the adviser; and if the student has a supporting area or minor, one copy is sent to that department.

¹Exception: Rehabilitation Counseling.

²Psychology, Counseling and Guidance requires two years of teaching or equivalent psychological experience. One year of this experience must be obtained prior to admittance to the program. Educational Administration requires sufficient experience to indicate probable success as an administrator. Mathematics Education requires two years teaching experience prior to graduation.

³Following course substitutions may be made in lieu of ID 400: Health and Physical Education, HPER 302, HPER 401, and HPER 403; Science Education, SCIED 373.

At least 36 hours of course work applicable to the doctoral degree must be in courses open only to graduate students (courses numbered 300 or above) and taken in residence at Greeley. Only courses taught by members of the faculty with an earned doctoral degree will apply to the Ed.D. or Ph.D. Exceptions are approved by the Graduate Council.

Candidates concentrating in Business Education, English Education, Industrial Arts Education, or Music Education must complete the basic foundational courses which are: EDHP 461, Philosophical Foundations of Education; EDHP 463, Sociological Foundations of Education; PCG 441, Psychological Foundations of Education.

Research—A dissertation (ID 423, Doctoral Dissertation is) required for which the student receives 18 quarter hours of credit. The student will pay a research fee in lieu of the tuition and Student Services Fee.

The dissertation shall be under the supervision of the adviser and a Research and Examining Committee. The committee will consist of four members. The committee shall represent the area of concentration, the supporting area(s), if any, and one member representing faculty-at-large. The committee will be appointed by the Dean of the Graduate School on recommendation of the major adviser.

A preliminary outline of the dissertation must be prepared by the student in consultation with his committee. Six copies of this outline are required. One copy must be on red-lined bond paper and is filed in the Graduate School Office. The Graduate School Office will xerox five copies—one copy for each member of the committee and one copy for the student (See *Graduation Requirements* for filing of approved dissertation.)

Candidacy for the Degree—To be eligible for admission to candidacy for the degree of Doctor of Education or Doctor of Philosophy, the student shall have:

1. Earned at least 36 hours beyond the master's degree (81 hours if the student enters the program with only a baccalaureate degree) with a 3.00 (B) or better grade average.
2. Passed satisfactorily the written and oral comprehensive examinations.
3. Presented an approved outline for the dissertation.
4. Successfully completed the English usage requirement.
5. Demonstrated that he has a knowledge and understanding in the three areas of Natural Science, Social Science and Humanities.
6. Met the research tools requirement in programs requiring such competency.

No student will be graduated at the end of the quarter in which he is admitted to candidacy.

Residence and Time Requirements—Minimum residence for the doctorate is three consecutive quarters (a minimum of ten weeks attendance and ten hours credit per quarter) and must be completed in the campus program after the candidate has been admitted to the doctoral degree program. This is comparable to one academic year. Ten quarter hours credit equal two-thirds of a regular load, and by definition enable the candidate to be technically classified as a full-time student. The remaining requirements may be satisfied by regular full- or part-time attendance, or by a combination of part-time attendance and transfer credit. (See conditions of transfer of credit.)

The maximum time limit for earning the doctoral degree is eight calendar years. If the student does not complete his program within the time limit, his degree program will be terminated.

Transfer of Credit—A maximum of 12 quarter hours of graduate credit in which grades of A and B are recorded may be transferred from institutions approved by a recognized accrediting agency to offer a graduate program leading to a doctoral degree. No transfer credit shall be counted that was earned more than eight years prior to *completion* of the degree. This credit must be compatible with the student's area of concentration and can not be used to meet the requirement that 36 hours of the course work must be in courses numbered 300 or above and taken in residence at Greeley. In some cases additional transfer credit may be accepted by the candidate's Research and Examining Committee after he has been encouraged to continue toward the doctoral objective by the Graduate

Council Sub-Committee on Admission. He may apply for transfer up to a maximum of 35 quarter hours (including the original 12 quarter hours previously accepted). Student must complete a transfer of credit petition at the Graduate School Office.

The request for transfer of credit must be made by the student in person (not by mail) and must be approved by the Assistant to the Dean, Graduate School, prior to securing approval of the major adviser. The student must return the completed transfer form and the official transcripts to the Graduate School Office before any transfer of credit will occur. *No transfer of credit will be accepted after 4:00 p.m. Friday of the second week of the quarter in which the student plans to graduate.* Graduate credit is not transferable if earned in off-campus classes or in courses classified as "extension." Transferred credit may not be used to make up "D" or "F" grades received in required courses.

The Graduate Council reserves the right to send doctoral students to another accredited institution which offers the doctorate to earn a maximum of 15 quarter hours in specific courses.

Advisement—When a student has been admitted to a doctoral program he is notified of his admission and that the chairman of the department of his area of concentration will assign his major adviser. The members of the Research and Examining Committee are nominated by the major adviser and appointed by the department chairman. At least one member must be from a department other than the major department. No faculty member will be appointed to a doctoral committee without his consent. The department chairman will transmit the committee roster to the Dean of the Graduate School, who in turn will check to avoid overloading any individual faculty member, will approve the committee membership, and will notify each member of his appointment. A request for change in committee membership may be initiated by the major adviser, by the student, or by a member of the committee. All such requests must be presented to the major department for review. The department will decide whether the request shall be granted and, if approved, will designate the necessary replacement. The replacement also must be approved by the Dean of the Graduate School who will notify each individual involved. If a member of the Research and Examining Committee is not on campus during the quarter in which the dissertation *outline* is defended, or in which the dissertation is defended, the major adviser may secure the appointment of a new committee member or he may continue with a three member committee. At least three members of the committee, one of whom must be the major adviser, must sign the outline and the corrected and approved dissertation.

Research Adviser—A the request of the adviser a research adviser may be appointed to direct the dissertation. If the research adviser supervised the preparation of the dissertation, the hooding of the candidate shall be done by the research adviser.

Graduation—In addition to the general requirements of the Graduate School and the departmental specific requirements for the doctoral degree, the student shall:

1. Be recommended for graduation by his committee.
2. Earn a minimum of 90 quarter hours of graduate credit beyond the master's degree (135 hours if the student enters the program with only a baccalaureate degree) and maintain a 3.00 (B) grade average. At least 36 quarter hours of this credit must be in courses open only to graduate students (courses numbered 300 or above) and taken in residence at Greeley (58 quarter hours if student enters the program with only a baccalaureate degree).
3. Demonstrate that he has a knowledge and understanding in the three areas of Natural Science, Social Science, and Humanities. Candidates who fail to make satisfactory scores on the Area Test will be held for the Graduate Readings course(s). These requirements will be imposed in addition to the minimum requirements.
4. Demonstrate competency in two acceptable research tools for the Doctor of Philosophy degree. These research tools include foreign language(s), applied statistics, mathematical statistics, computer science language, and an acceptable collateral field. Demonstrate competency in one foreign language for Doctor of Education degree in English and English Education.

5. Pass satisfactorily the following examinations in addition to the usual course examinations. (No oral examination or dissertation defense will be scheduled during the last two weeks of an academic quarter.)

(a) *Comprehensive written and oral examinations covering course work.* These examinations will take place after the student has successfully completed at CSC with a 3.00 (B) grade average, 36 hours beyond the master's degree (81 hours if the student enters the program with only a baccalaureate degree). The supporting area or minor examination may be taken whenever permission is given by the supporting area or minor department. The written examination will be given before the oral examination and will be available to all members of the Research and Examining Committee *prior* to the oral examination and finally shall be filed in the student's folder in the Graduate School Office. (The English usage requirement must be met before a student will be permitted to take the comprehensive examination. The student must obtain from the Graduate School Office a "Permit To Take Written Comprehensive Examination.") The members of the Research and Examining Committee will evaluate the written and oral examinations as follows:

- (1) Passed with honors.
- (2) Passed.
- (3) Passed with stated conditions. The student must remove the conditions before he will be cleared for graduation.
- (4) Unsatisfactory with the privilege of additional examinations for which a fee will be charged. One quarter must intervene before the examinations may be given again. A second retest will not be permitted.
- (5) Failure. In case of failure the student will have eliminated himself from further work applicable to the doctorate and may not present himself for further examinations.

Oral examination in defense of the dissertation. Each doctoral candidate must present his dissertation in acceptable form to the Graduate School Office three weeks prior to the scheduling of the defense examination. The Graduate School Office will xerox the appropriate number of additional copies. The three week period will be used by the Research and Examining Committee to read the study. The Graduate School Office will arrange the time and place for the defense examination. This examination must occur at least three weeks *prior* to graduation. If it is impossible to meet this requirement, the examination date will be moved into the following quarter, subject to the same deadline conditions.

6. File in the Graduate School Office at least 17 days before graduation all copies of the corrected and approved dissertation and a 600 word abstract. A research fee is charged in lieu of the tuition and Student Services Fee. (See Financial Information Section for *Fees Added for Graduate Study*).

7. Pay for the publication of the dissertation. The dissertation is microfilmed and the abstract is published in *Dissertation Abstracts*. For the purpose of publication the student must provide the Graduate School Office with two extra copies of the abstract. If the abstract is longer than 600 words the student will be required to pay an additional publication charge.

8. Pay for the binding and mailing of the dissertation. At least four copies of the study, including the abstract, are required to be bound. After being bound, the original and one copy are filed in the college library, one copy is delivered to the student's adviser and one copy is sent to the student.

9. File a vita to be included in the permanent record.

Formal Application for Graduation—The student must *make* a formal application for graduation at the Graduate School Office not later than 30 days prior to the quarter in which the candidate expects to graduate. A late fee will be charged for failure to apply on time. *No application will be accepted after 4:00 p.m. Friday of the second week of the quarter in which the student expects to graduate.*

Graduate Degrees Offered by Departments or Disciplines

Anthropology ¹	M.A.
Biological Science	M.A., Ed.S.
Botany	M.A., Ed.D.
Business	M.A., Ed.S., Ed.D.
Chemistry	M.A., Ed.S., Ed.D.
College Student Personnel Work	Ed.S., Ph.D.
Curriculum and Instruction	M.A., Ed.S., Ed.D.
Economics ¹	M.A.
Educational Administration	M.A., Ed.S., Ed.D.
Educational Media	M.A., Ed.S.
Elementary Education and Reading	M.A., Ed.S., Ed.D.
English	M.A., Ed.S., Ed.D.
Fine Arts	M.A.
Geography ¹	M.A., Ed.D.
Health, Physical Education and Recreation	M.A., Ed.D.
History	M.A., Ed.D.
Home Economics	M.A.
Industrial Arts	M.A., Ed.S., Ed.D.
Mathematics	M.A., Ed.S., Ed.D.
Music	M.A., Ed.S., Ed.D.
Physical Science	M.A.
Physics	M.A., Ed.S., Ed.D.
Political Science ¹	M.A.
Psychology, Counseling and Guidance	M.A., Ed.S., Ed.D.
Research and Statistical Methodology	Ph.D.
Science Education	M.A., Ed.D.
Social Science	M.A., Ed.D.
Sociology ¹	M.A.
Special Education	M.A., Ed.S., Ed.D.
Speech Communication and Journalism	M.A., Ed.S.
Theatre Arts	M.A.
Zoology	M.A., Ed.D.

¹The departments of Anthropology, Economics, Geography, Political Science, and Sociology offer a Master of Arts degree in Social Science. The student may concentrate in the discipline of his choice.

In addition, a *doctoral* student may be required by the major adviser or department to take a number of additional hours in one or more of the following supporting areas:

Business Education	Industrial Arts Education
College Student Personnel Work ¹	Mathematics
Curriculum and Instruction	Mathematics Education
Educational Administration	Music Education
Educational Media ¹	Outdoor Education
Elementary Education ¹	Psychology, Counseling and Guidance ¹
English Education	Reading ¹
Health and Physical Education	Science
Higher Education ¹	Science Education
History and Philosophy of Education ¹	Social Science
	Statistics and Measurement ¹

A *doctoral* student may be permitted to declare a minor of at least 24 quarter hours under a plan approved by the department in which the proposed minor is declared. The student will be required to pass a separate comprehensive examination administered by the department in which the student has declared a minor.

¹Candidates taking this supporting area must earn 24 quarter hours in this discipline.

POSTDOCTORAL PROGRAMS

Programs of research and advanced study for persons holding the earned Doctor of Philosophy or Doctor of Education degree are available in selected areas within the field of education. Admission is on an individual basis, and the specific research project or program of studies pursued is planned by the postdoctoral student in conference with a faculty committee appointed to advise him and to make an assessment of his progress at the end of the program. Work on the postdoctoral level may be taken in areas such as administration, college student personnel work, educational psychology, curriculum and instruction, elementary education, higher education, special education, and statistics. Further information regarding admission procedures and fellowship aid for the support of postdoctoral study may be obtained from the Dean of the Graduate School.

GRADUATE DEGREE REQUIREMENTS

Anthropology

Master of Arts Degree

A concentration in Anthropology is offered within the major in Social Science. See Social Science, page 92.

Biological Sciences

Degrees in biological science are administered by the Department of Biological Sciences.

Master of Arts Degree in the Teaching Professions

Minimal Requirements:

BIO	350—Seminar in Biological Sciences	3
BIO	357—Biological Research (Substitute for ID 300).....	5
	(Should be taken as soon as possible after beginning of graduate program)	
	Selected courses in Biological Science assuring an understanding of the basic principles of botany and zoology. Course work must be recommended and approved by Biological Science Advisory Committee.....	37

Thesis not required. 45
Proficiency in chemistry through general biochemistry is strongly recommended for this degree.

Botany

Degrees in botany are administered by the Department of Biological Sciences.

Master of Arts Degree in the Arts and Sciences

Minimal Requirements:

BIO	350—Seminar in Biological Sciences	3
BIO	357—Biological Research (Substitute for ID 300).....	5
	(Should be taken as soon as possible after beginning of graduate program)	
	Course of instruction as determined by the Biological Science Advisory Committee in consultation with the student. (This includes up to 8 hours ID 399)	37

Proficiency in chemistry through general biochemistry is required for this degree. 45

Master of Arts Degree in the Teaching Professions

Minimal Requirements:

BIO	350—Seminar in Biological Sciences	3
BIO	357—Biological Research (Substitute for ID 300).....	5
	(Should be taken as soon as possible after beginning of graduate program)	
	Course of study as determined by the Biological Science Advisory Committee in consultation with the student. (This includes up to 8 hours ID 399.).....	37

Proficiency in chemistry through general biochemistry is strongly recommended for this degree. 45

Doctor of Education Degree

General Requirements:

BIO	350—Seminar in Biological Sciences	3	
BIO	357—Biological Research (Waived if master's degree included thesis) (Substitute for ID 400) (Should be taken as soon as possible after beginning of graduate program)	5	8

Professional Requirements:

RSM	204—Descriptive Statistics	5	
SCED	278—Instructional Materials in the Teaching of Science	4	
SCED	374—Instructional Problems in Teaching Science	3	
SCED	376—Construction of Achievement Tests in Science	3	15

Additional Suggested Courses:

ID	301—Practicum (supervised science education professional activity to improve science teaching)	4	
EDHP	395—Philosophy of Education	3	
SCED	477—Evaluation and Testing in Science	3	
SCI	200—History of Biology	3	
SCI	376—History of Science	3	
SCI	379—Philosophy of Science	3	
	Course of instruction as determined by Biological Sciences Ad- visory Committee in consultation with student. (This includes 18 hours ID 423.)		90

Business

The degree of *Master of Arts* is offered in: Business Education

The degree of *Specialist in Education* is offered. See the Specialist in Education section of the Graduate Academic Information.

The degree of *Doctor of Education* is offered in: Business Education.

Master of Arts Degree

Business Education

Specific Course Requirements:

ID	300—Introduction to Graduate Study
BUED	372—Curriculum Construction in Business Education
BUED	373—Current Problems in Business Education
2 courses	—Improvement of Instruction

15 hours of Business and Economic courses including BUS 301, Foundations of Business.

At least 15 quarter hours of electives from Business, Economics, and Business Education or other related areas.

Specialist in Education Degree

The student and the adviser discuss the courses to be taken to meet the special needs of the person concerned.

Doctor of Education Degree

Business Education

Specific Course Requirements:

ID	400—Introduction to Doctoral Research (If a similar course has not been taken previously.)
ID	423—Doctoral Dissertation
BUED	401—Analysis of Research in Business Education
BUED	402—Issues and Trends in Business Education
BUED	403—Post High School Business Education
EDHP	461—Philosophical Foundations of Education
EDHP	463—Sociological Foundations of Education
PCG	441—Psychological Foundations of Education
RSM	304—Descriptive Statistics
RSM	305—Statistical Inference

Business, Economics, and Business Education Courses may be elected by students in the Doctoral program. (Graduate courses in other departments may also be elected.)

Chemistry

Master of Arts Degree in the Arts and Sciences

Prerequisites:

1. Chemistry—A student must have completed acceptable courses in each of the four major fields of chemistry: organic, inorganic, analytical, and physical.
2. College mathematics through differential and integral calculus.
3. College physics—one year.
4. Language—the reading knowledge of one foreign language (preferably German).
5. If these requirements are not fulfilled, a student may be admitted on a provisional basis. The deficiencies are to be removed as soon as possible, but graduate credit will not be allowed.

Requirements:

1. Thirty quarter hours of course work distributed between major and minor. Two thirds of these courses must be in the major field, and on approval of the adviser all thirty hours may be in the major.
2. An acceptable thesis on research work. Registration for fifteen quarter hours in ID 399 is required. The thesis must be defended in an oral examination before the student's graduate committee.
3. Pass a written and oral comprehensive examination covering the subject matter in the graduate program and any other material which may seem pertinent in the opinion of the committee.
4. The minor (if elected) should be in a related field (preferably physics or mathematics).

Courses Required in Chemistry if not taken on undergraduate level:

CHEM	280—Organic Qualitative Analysis	3
CHEM	284—Instrumental Methods of Analysis	5
CHEM	285—Chemical Literature	1
		9

Courses Required in Chemistry (18 hours from the following):

CHEM	342—Special Topics in Organic Chemistry	2
CHEM	343—Stereochemistry of Organic Compounds	3
CHEM	344—Theoretical Organic Chemistry	3
CHEM	345—Reactions and Reaction Mechanisms in Organic Chemistry.....	3
CHEM	346—Seminar in Chemistry	3

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CHEM	347—Special Topics in Analytical Chemistry	3	
CHEM	348—Special Topics in Inorganic Chemistry	3	
CHEM	349—Advanced Inorganic Chemistry	3	
CHEM	381—Chemical Thermodynamics	3	
CHEM	382—Statistical Thermodynamics	3	
CHEM	384—Chemical Spectroscopy	4	
CHEM	385—Advanced Physical Chemistry	3	
CHEM	386—Quantum Chemistry	3	18
	Thesis		15
	Complete program to 45 hours with chemistry courses numbered 287 or above or with selected minor courses approved by the adviser		0-9
			45

Master of Arts Degree in the Teaching Professions

Prerequisites:

1. The courses in chemistry required for the B.A. degree in chemistry (teaching) at Colorado State College or suitable substitutes.
2. Twelve hours of physics.
3. Mathematics through integral calculus.
4. If these requirements are not fulfilled, a student may be admitted on a provisional basis. The deficiencies must be removed as soon as possible and graduate credit will not be allowed.

Requirements:

1. A minimum of 45 hours of course work distributed between chemistry and professional courses.

Required Courses:

SCED	372—Science Curriculum in the Secondary School	3	
SCED	373—Research in Science Education	3	
SCED	382—Problems in Teaching Chemistry	4	10
CHEM	285—Chemical Literature	1	
CHEM	346—Seminar in Chemistry	3-4	
CHEM	249—Inorganic Chemistry II	3	
CHEM	280—Organic Qualitative Analysis	3	
5	CHEM 284—Instrumental Methods of Analysis		
CHEM	281—Physical Chemistry I	5	
CHEM	282—Physical Chemistry II	5	
CHEM	283—Physical Chemistry III	5	
	<i>or</i>		
CHEM	340—Principles of Physical Chemistry I	6	
CHEM	341—Principles of Physical Chemistry II	6	12-15 26-30
	Electives (with approval of major adviser)		4-8
			45

Electives may be selected from the following chemistry or science education courses or from any physics courses numbered above 200:

Recommended Electives:

CHEM	287—Physical Biochemistry
CHEM	342—Special Topics in Organic Chemistry
CHEM	343—Stereochemistry of Organic Compounds
CHEM	344—Theoretical Organic Chemistry
CHEM	345—Reactions and Reaction Mechanisms in Organic Chemistry
CHEM	347—Special Topics in Analytical Chemistry
CHEM	348—Special Topics in Inorganic Chemistry
CHEM	349—Advanced Inorganic Chemistry
CHEM	381—Chemical Thermodynamics
CHEM	382—Statistical Thermodynamics
CHEM	383—Chemical Kinetics

CHEM	384—Chemical Spectroscopy
CHEM	385—Advanced Physical Chemistry
CHEM	386—Quantum Chemistry
SCED	374—Instructional Problems in Teaching Science
SCED	376—Construction of Achievement Tests in Science
SCED	477—Evaluation and Testing in Science
SCI	376—History of Science

Doctor of Education Degree

Chemistry (Teaching)

General Requirements:

CHEM	285—Chemical Literature
CHEM	346—Seminar in Chemistry (minimum 4 hours, maximum 6 hours)

Major Requirements:

CHEM	281—Physical Chemistry I
CHEM	282—Physical Chemistry II
CHEM	283—Physical Chemistry III
	<i>or</i>
CHEM	340—Principles of Physical Chemistry I
CHEM	341—Principles of Physical Chemistry II
CHEM	249—Inorganic Chemistry II
CHEM	284—Instrumental Methods of Analysis
CHEM	344—Theoretical Organic Chemistry
CHEM	381—Chemical Thermodynamics
ID	423—Doctoral Dissertation

Professional Requirements:

SCED	372—Science Curriculum in the Secondary School
SCED	374—Instructional Problems in Teaching Science
SCED	477—Evaluation and Testing in Science
RSM	204—Descriptive Statistics

Recommended Major Electives:

PHYS	266—Electricity and Magnetism II
PHYS	267—Optics II
PHYS	269—Nuclear Physics I
CHEM	280—Organic Qualitative Analysis
PHYS	268—Atomic Physics
CHEM	342—Special Topics in Organic Chemistry
CHEM	343—Stereochemistry of Organic Compounds
CHEM	345—Reactions and Reaction Mechanisms in Organic Chemistry
CHEM	347—Special Topics in Analytical Chemistry
CHEM	348—Special Topics in Inorganic Chemistry
CHEM	349—Advanced Inorganic Chemistry
CHEM	382—Statistical Thermodynamics
CHEM	383—Chemical Kinetics
CHEM	384—Chemical Spectroscopy
CHEM	385—Advanced Physical Chemistry
CHEM	386—Quantum Chemistry

Recommended Professional Electives:

SCI	376—History of Science
SCED	373—Research in Science Education
SCED	378—Science Education Seminar
SCED	382—Problems in Teaching Chemistry
RSM	305—Statistical Inference

It is assumed that a student selecting this curriculum is preparing to teach chemistry or physical science in a secondary school or in a junior college. The student is also expected to be informed in the field of professional science education and some of the significant research in this area.

Any of the required courses (or their equivalents) listed above which have already been taken are not to be repeated. Additional work, both in subject matter and professional courses can be taken in place of these courses. If previously taken courses are out-dated, a student may be requested to validate them and bring them up-to-date.

If required courses have unsatisfied prerequisites, these prerequisites must be made up.

Although the oral examination is primarily on the research work, it is not necessarily limited to it.

A major comprehensive examination will be written in the physical sciences. A minor comprehensive will be written in professional science education.

College Student Personnel Work

Specialist in Education Degree

The Department of College Student Personnel Work offers the opportunity to earn the Specialist in Education Degree. Each person who enters the program is considered on an individual basis. Course work to be taken will be determined by the student's background and experience as well as his area of interest and future plans. The student will be expected to complete a minimal number of courses offered by the department. He also will be encouraged to gain practical experience through internships offered by the department. The student and his adviser will cooperatively plan the program to complete graduate requirements for the Specialist in Education Degree.

Doctor of Philosophy Degree

The program of studies is especially planned for the preparation of persons for college and university positions in all divisions of student personnel work. The rationale underlying the program maintains that persons in student personnel work in higher education need a strong background in liberal arts, a broad understanding of educational psychology, a thorough knowledge of the field of student personnel work, ability to teach college students, and skill in measurement, statistics, and research.

The following is the required program:

1. The major is composed of not less than 94 quarter hours credit in course work, and 18 quarter hours credit in original research, for a minimum of 112 quarter hours credit. The major must be accompanied by a graduate minor or a supporting area of not less than 24 quarter-hours credit.

2. The total minimum of 136 quarter hours for the degree program is made up as follows:

	<i>Hours Credit</i>
A. Courses in College Student Personnel Work	33
B. Internships in College Student Personnel Work	14
C. Courses in Psychology	24
D. Elective courses in social sciences, natural sciences, humanities, and measurement and statistics	23
E. Doctoral Dissertation	18
<hr/>	
Total (minimum) in major	112
Total (minimum) in minor or supporting area	24
<hr/>	
Total (minimum) Ph.D. Program	136

Applicants for admission to the program must have a Baccalaureate degree from an accredited institution and prior graduate work. A Master's degree is strongly recommended.

A personal interview is mandatory. Work experience to indicate probable success as a Student Personnel Work is required.

		<i>Hours Credit</i>
A. Courses in College Student Personnel Work		
CSPW 351—Philosophy and History of College Student Personnel Work.....		3
CSPW 352—Student Housing		3
CSPW 353—College Counseling and Health Services		3
CSPW 354—Admissions and Records		3
CSPW 355—Student Government, Activities and Sponsorship		3
CSPW 356—Placement Service		3
CSPW 357—Financial Aids		3
CSPW 450—The College and the Student.....		3

GRADUATE DEGREE REQUIREMENTS / 45

CSPW	451—Organization and Administration of College Student Personnel Work.....	3
CSPW	452—Current Issues in College Student Personnel Work	3
CSPW	453—Research and Evaluation in College Student Personnel Work.....	3

B. Internships in College Student Personnel Work

The student shall select no less than 14 quarter hours of internship credit from the following:

		<i>Hours Credit</i>
CSPW	358—Seminar in College Student Personnel Work	0
CSPW	359—Internship in College Student Personnel Work—Housing	2
CSPW	360—Internship in College Student Personnel Work—Health	2
CSPW	361—Internship in College Student Personnel Work—College Teaching	2
CSPW	362—Internship in College Student Personnel Work—Student Activities	2
CSPW	363—Internship in College Student Personnel Work—Counseling	2
CSPW	364—Internship in College Student Personnel Work—Placement Services.....	2
CSPW	365—Internship in College Student Personnel Work—Dean's Office	2
CSPW	366—Internship in College Student Personnel Work—Financial Aids.....	2
CSPW	367—Internship in College Student Personnel Work—Admissions and Records.....	2

Each quarter that the student registers for an internship, he must concurrently register for CSPW 358—Seminar in College Student Personnel Work. Interns are required to meet once per week in seminar with the faculty of the major.

C. Courses in Psychology

The student shall select 24 quarter hours of course work from the following groups of courses with one or more courses being selected from each group:

		<i>Hours Credit</i>
PSY	220—General Psychology and Principles of Behavior.....	3
PSY	240—Psychology of Perception and Learning	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
PCG	334—Psychology of Individual Differences	3
PCG	340—Theories of Learning	5
PCG	332—Psychology of Adolescence	3
PCG	324—Theories of Motivation	3
PCG	380—Theories of Personality	3
PCG	384—Group Dynamics in Human Relations	3
PSY	288—Abnormal Psychology	3
PCG	315—Counseling Theories	3
PCG	316—Clinical Methods in Psychology	3
PCG	333—Psychology of College Students and Other Adults.....	3
PCG	411—Introductory Supervised Practice in Counseling	3
PCG	415—Supervised Practice in Counseling with Adults.....	3
PCG	370—Principles and Practices in Testing and Measurement.....	3
PCG	371—Aptitude and Achievement Analysis	3
PCG	373—Individual Tests of Intelligence	4
PCG	374—Supervised Practice in the Use of Individual Tests of Intelligence	6
PCG	381—Survey of Projective Techniques	3
PCG	382—Introduction to Rorschach Administration and Scoring	3
PCG	383—Projective Technique	3
PCG	412—Analysis of the Individual	3
PCG	—Other Approved Courses	3

D. Elective Courses: A student shall elect 12 quarter hours of courses in statistics unless he is pursuing a minor or supporting area in Statistics and Measurement or unless he is presenting 12 hours or more of statistics in lieu of one research tool. Other electives are selected, with the adviser's approval, from the wide range of college graduate offerings.

E. Doctoral Dissertation: Original research in the field of College Student Personnel Work.

Curriculum and Instruction

Master of Arts Degree

Secondary Curriculum and Instruction

Intent: Designed to prepare secondary classroom teachers and subject area supervisors as specialists in the instruction of a given subject area.

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Core Requirements: (required of all candidates)

		<i>Hours Credit</i>
ID	300—Introduction to Graduate Study (or departmental substitute)	3
EDCI	361—Secondary Instruction	3
EDCI	362—The Development of Instructional Practice	3
EDCI	366—Foundations for Curriculum Development	3

A minimum of one of the following:

PSY	240—Psychology of Learning	3
PCG	332—Psychology of Adolescence	3
PCG	340—Theories of Learning	5

Professional Competencies: (required unless candidate had equivalent undergraduate credit).

EDHP	295	
	or 395—Philosophy of Education	3
EM	206—Introduction to Educational Resources	5
PCG	317—Foundations of Guidance	3
PCG	370—Principles and Practices in Testing and Measurement	3
	or	
RSM	204—Descriptive Statistics	4

Content Area Courses: A minimum of 20 hours selected to develop instructional competency.

Recommended Electives: Determined by candidate's need to strengthen understandings and competencies.

EDAD	243—School Law I	3
READ	217—Reading in the Content Fields	3
IDVE	210—Principles of Vocational Education	3
EDCI	260	
	or 360—Professional Roles and Responsibilities of Teachers	3
READ	317—Remedial Reading in the Secondary School	4
EDCI	367—Modern Curricular Programs	3
EDCI	368—Seminar in Curriculum and Instruction	Max. 9
ELED	314—The Elementary School Curriculum	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
RSM	204—Descriptive Statistics	4
SFE	351—Supervision of Student Teachers	3
ID	399—Thesis (15 hours maximum)	

Comprehensive Exam: A formal paper relating to the instruction of the subject area in the secondary schools, prerequisite to the written examination unless the candidate writes a thesis. A comprehensive written examination relating to the instruction of the subject area in the secondary schools.

Junior High School Curriculum and Instruction

Intent: Designed to prepare classroom teachers and subject area supervisors as specialists in the instruction of a given subject area in the junior high school.

Core Requirements: (required of all candidates)

		<i>Hours Credit</i>
ID	300—Introduction to Graduate Study (or departmental substitute)	3
EDCI	363—Curriculum in the Junior High School	3
EDCI	364—Seminar in Junior High School Instruction	6

A minimum of one of the following:

PSY	240—Psychology of Learning	3
PCG	332—Psychology of Adolescence	3
PCG	340—Theories of Learning	5

Professional Competencies: (required unless candidate had equivalent undergraduate credit)

EDHP	295	
or	395—Philosophy of Education	3
EM	206—Introduction to Educational Resources	3
PCG	317—Foundations of Guidance	5
PCG	370—Principles and Practices in Testing and Measurement	3
	or	
RSM	204—Descriptive Statistics	4

Content Area Courses: A minimum of 20 hours to be selected to develop instructional competency.

Recommended Electives: Determined by candidate's need to strengthen understandings and competencies.

EDAD	243—School Law I	3
READ	217—Reading in the Content Fields	3
IDVE	210—Principles of Vocational Education	3
EDCI	260	
or	360—Professional Roles and Responsibilities of Teachers	3
READ	317—Remedial Reading in the Secondary School	4
EDCI	261	
or	361—Secondary Instruction	3
EDCI	364—Seminar in Junior High School Instruction	6
EDCI	366—Foundations for Curriculum Development	3
EDCI	367—Modern Curricular Programs	3
EDCI	368—Seminar in Curriculum and Instruction (maximum 9 hours)	9
ELED	314—The Elementary School Curriculum	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
RSM	204—Descriptive Statistics	4
SFE	351—Supervision of Student Teachers	3
ID	399—Thesis (15 hours maximum)	

Comprehensive Exam: A formal paper relating to the instruction of the subject area in the junior high school, prerequisite to the written examination unless the candidate writes a thesis. A comprehensive written examination relating to the instruction of the subject area in the junior high school.

Specialist in Education Degree

Curriculum and Instruction: Content Area

Intent: Designed to prepare secondary classroom teachers and subject area supervisors as specialists in the instruction of a given subject area. The program is predicated on adaptation to the candidate's particular interests and area of specialization.

Core Requirements: (required of all candidates)

		<i>Hours Credit</i>
ID	400—Introduction to Doctoral Research (or its equivalent)	3
ID	401—Specialist Degree Practicum	8

Areas of Competency: The candidate shall demonstrate competency, *usually* by completion of advanced graduate course work, in each of the following areas. Specific courses noted are *recommended*.

1. Comprehension of historical, philosophical, and cultural factors affecting curriculum, and ability to utilize these in the development of the instructional program.

		<i>Hours Credit</i>
IDVE	210—Principles of Vocational Education	3
EDCI	361—Secondary Instruction	3
EDCI	362—The Development of Instructional Practice	3
EDCI	363—Curriculum in the Junior High School	3

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EDCI	364—Seminar in Junior High School Instruction	Max. 6
EDCI	366—Foundations for Curriculum Development	3
EDCI	367—Modern Curricular Programs	3
EDCI	368—Seminar in Curriculum and Instruction	Max. 9
ELED	314—The Elementary School Curriculum	3
HIED	393—The Junior and Community College	3
HIED	493—The College and University Curriculum	3

2. Comprehension of psychological factors, especially learning theory, human growth and development and mental hygiene, skill in employing classroom guidance techniques, and ability to utilize these in the development of the instructional program.

		<i>Hours Credit</i>
PSY	240—Psychology of Learning	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
PCG	314—Techniques in Group Guidance	3
PCG	332—Psychology of Adolescence	3
PCG	340—Theories of Learning	5

3. Comprehension of the dimensions and structure of a specialized subject field or discipline, and skill in ordering this content into teachable concepts:

Usually a *minimum* of 35 hours of graduate level study in a given content area, including master's preparation.

4. Development of skill in applying various technologies to the development of the instructional program of the school system.

		<i>Hours Credit</i>
READ	217—Reading in the Content Fields	3
READ	317—Remedial Reading in the Secondary School	4
EM	206—Introduction to Educational Resources	5
EM	208—Design and Construction of Audio-Visual Materials	3
PCG	370—Principles and Practices in Testing and Measurement	3
PCG	371—Aptitude and Achievement Analysis	5
PSY	293—Sociodrama	2
PSY	294—Sociometry	2
RSM	204—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	403—Analysis of Variance and Covariance	3
RSM	420—Seminar in Dissertation Evaluation	0
SFE	351—Supervision of Student Teachers	3
SFE	352—Organization of Student Teaching Programs	Max. 8

Comprehensive Exam: A comprehensive written examination over the speciality and the practicum.

General Curriculum Coordination

Intent: Designed to prepare curriculum directors for coordination of the instructional program of a school system. While not necessarily intended to meet certification requirements for the superintendency, the program is predicated on adaptation to the candidate's particular area of interest and specialization.

Core Requirements:

		<i>Hours Credit</i>
ID	400—Introduction to Doctoral Research (or its equivalent)	3
ID	401—Specialist Degree Practicum	8

Areas of Competency: The candidate shall demonstrate competency, *usually* by completion of advanced graduate course work, in each of the following areas. Specific courses noted are *recommended*.

1. Comprehension of historical, philosophical, social and cultural factors affecting curriculum, and ability to utilize these in the development of the instructional program.

		<i>Hours Credit</i>
IDVE	210—Principles of Vocational Education	3
EDCI	361—Secondary Instruction	3
EDCI	362—The Development of Instructional Practice	3

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EDCI	363—Curriculum in the Junior High School	3
EDCI	364—Seminar in Junior High School Instruction (maximum 6 hours).....	6
EDCI	366—Foundations for Curriculum Development	3
EDCI	367—Modern Curricular Programs	3
EDCI	368—Seminar in Curriculum and Instruction (maximum 9 hours).....	9
ELED	314—The Elementary School Curriculum	3
HIED	393—The Junior and Community College	3
HIED	493—The College and University Curriculum	3

2. Comprehension of psychological factors, especially learning theory, human growth and development and mental hygiene, skill in employing these in the development of the instructional program.

		<i>Hours Credit</i>
PSY	240—Psychology of Learning	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
PCG	332—Psychology of Adolescence	3
PCG	340—Theories of Learning	5
PCG	371—Aptitude and Achievement Analysis	5

3. Comprehension of organizational processes and factors influencing administrative decisions, and skill in ordering and applying these techniques to the administration of a system's instructional program.

		<i>Hours Credit</i>
EDAD	342—School Administration—Federal, State, Local	3
EDAD	343—School Finance	3
EDAD	344—School Plant Planning	3
EDAD	348—School Law II	3
EDAD	355—Organization, Administration, and Supervision of the Elementary School	4
EDAD	365—Secondary School Organization, Administration, and Supervision.....	4

4. Development of skill in applying various technologies to the development of the instructional program of the school system.

		<i>Hours Credit</i>
READ	217—Reading in the Content Fields	3
READ	317—Remedial Reading in the Secondary School	4
EM	206—Introduction to Educational Resources	5
EM	208—Design and Construction of Audio-Visual Materials	3
PSY	293—Sociodrama	2
PSY	294—Sociometry	2
PCG	370—Principles and Practices in Testing and Measurements.....	3
PCG	371—Aptitude and Achievement Analysis	5
RSM	204—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	403—Analysis of Variance and Covariance.....	3
RSM	420—Seminar in Dissertation Evaluation	0
SFE	351—Supervision of Student Teachers	3
SFE	352—Organization of Student Teaching Programs.....	Max. 8

Comprehensive Exam: A comprehensive written examination over the speciality and the practicum.

Doctor of Education Degree

Curriculum and Instruction

Plan I — Generalist in Curriculum Theory

Intent: Designed to prepare candidates to work in curriculum and instruction in the several content areas included in the program of the secondary schools.

Core Requirements:

		<i>Hours Credit</i>
ID	400—Introduction to Doctoral Research (or equivalent).....	3
ID	423—Doctoral Dissertation (18 hours). Relating to the development of instructional and curricular programs	18

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EDHP	461—Philosophical Foundations of Education	3
EDHP	463—Sociological Foundations of Education	3
PCG	441—Psychological Foundations of Education	3

Areas of Competency: The candidate shall demonstrate competency, *usually* by completion of advanced graduate course work, in *each* of the following areas. Specific courses, unless noted, are *recommended*.

1. Comprehension of historical, philosophical, social and cultural factors affecting curriculum, and ability to utilize these in the development of instructional programs.

		<i>Hours Credit</i>
IDVE	210—Principles of Vocational Education	3
EDCI	361—Secondary Instruction	3
EDCI	362—The Development of Instructional Practice.....	3
EDCI	363—Curriculum in the Junior High School.....	3
EDCI	364—Seminar in Junior High School Instruction	3
EDCI	366—Foundations for Curriculum Development	3
EDCI	367—Modern Curricular Programs	3
EDCI	368—Seminar in Curriculum and Instruction.....	Max. 9
EDCI	468—Advanced Seminar in Curriculum and Instruction	Max. 9
ELED	314—The Elementary School Curriculum	3
HIED	393—The Junior and Community College	3
HIED	493—The College and University Curriculum	3

2. Comprehension of psychological factors, especially learning theory, human growth and development and mental hygiene, skill in employing classroom guidance techniques, and ability to utilize these in the development of the instructional program.

		<i>Hours Credit</i>
PSY	240—Psychology of Learning	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
PCG	314—Techniques in Group Guidance	3
PCG	332—Psychology of Adolescence	3
PCG	340—Theories of Learning	5

3. Comprehension of organizational process and factors influencing administrative decisions, and skill in ordering and applying these techniques to the administration of a school system's instructional program.

		<i>Hours Credit</i>
EDAD	342—School Administration—Federal, State, Local	3
EDAD	343—School Finance	3
EDAD	344—School Plant Planning	3
EDAD	348—School Law II	3
EDAD	355—Organization, Administration, and Supervision of the Elementary School	4
EDAD	365—Secondary School Organization, Administration, and Supervision.....	4

4. Development of skill in applying various technologies to the development of the instructional program of the school system.

		<i>Hours Credit</i>
RSM	204—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	403—Analysis of Variance and Covariance	3
RSM	420—Seminar in Dissertation Evaluation	0
READ	217—Reading in the Content Fields	3
READ	317—Remedial Reading in the Secondary School.....	4
EM	206—Introduction to Educational Resources	5
EM	208—Design and Construction of Audio-Visual Materials	3
PSY	293—Sociodrama	2
PSY	294—Sociometry	2
PCG	370—Principles and Practices in Testing and Measurements.....	3
PCG	371—Aptitude and Achievement Analysis.....	5
SFE	351—Supervision of Student Teachers	3
SFE	352—Organization of Student Teaching Programs.....	Max. 8

Support Area: A minimum of 24 quarter hours of graduate level work in a specific area in support of the area of concentration.

Comprehensive Written and Oral Exams: Relating to the development of instructional and curricular programs.

Oral Examination in Defense of the Doctoral Dissertation,

Curriculum and Instruction

Plan II — Specialization in Content

Intent: Designed to prepare candidates to work in curriculum and instruction in a given subject area, such as supervisors or coordinators of a content area, methods teachers, supervisors of student teaching.

Core Requirements:

		<i>Hours Credit</i>
ID	400—Introduction to Doctoral Research (or equivalent)	3
ID	423—Doctoral Dissertation (18 hours). Relating to the development of instructional and curricular programs	18
EDHP	461—Philosophical Foundations of Education	3
EDHP	463—Sociological Foundations of Education	3
PCG	441—Psychological Foundations of Education	3

Areas of Competency: The candidate shall demonstrate competency, *usually* by completion of advanced graduate course work, in *each* of the following areas. Specific courses, unless noted, are *recommended*.

1. Comprehension of historical, philosophical, social and cultural factors affecting curriculum, and ability to utilize these in the development of instructional programs.

		<i>Hours Credit</i>
EDCI	361—Secondary Instruction	3
EDCI	362—The Development of Instructional Practice	3
EDCI	363—Curriculum in the Junior High School	3
EDCI	364—Seminar in Junior High School Instruction	Max. 6
EDCI	366—Foundations for Curriculum Development	3
EDCI	367—Modern Curricular Programs	3
EDCI	368—Seminar in Curriculum and Instruction	Max. 9
EDCI	468—Advanced Seminar in Curriculum and Instruction	Max. 9
ELED	314—The Elementary School Curriculum	3
HIED	393—The Junior and Community College	3
HIED	493—The College and University Curriculum	3

2. Comprehension of psychological factors, especially learning theory, human growth and development and mental hygiene, skill in employing classroom guidance techniques, and ability to utilize these in the development of instructional programs.

		<i>Hours Credit</i>
PSY	240—Psychology of Learning	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
PCG	314—Techniques of Group Guidance	3
PCG	332—Psychology of Adolescence	3
PCG	340—Theories of Learning	5

3. Comprehension of organizational process and factors influencing administrative decisions, and skill in ordering and applying these techniques to the administration of a school system's instructional program.

		<i>Hours Credit</i>
EDAD	342—School Administration—Federal, State, Local	3
EDAD	343—School Finance	3
EDAD	344—School Plant Planning	3
EDAD	348—School Law II	3
EDAD	355—Organization, Administration, and Supervision of the Elementary School	4
EDAD	365—Secondary School Organization, Administration, and Supervision	4

4. Development of skill in applying various techniques to the development of the instructional program of the school system.

		<i>Hours Credit</i>
RSM	204—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	403—Analysis of Variance and Covariance	3
READ	217—Reading in the Content Fields	3
READ	317—Remedial Reading in the Secondary School	4
EM	206—Introduction to Educational Resources	5
EM	208—Design and Construction of Audio-Visual Materials	3
PSY	293—Sociodrama	2
PSY	294—Sociometry	2
PCG	370—Principles and Practices in Testing and Measurements	3
PCG	371—Aptitude and Achievement Analysis	5
SFE	351—Supervision of Student Teachers	3
SFE	352—Organization of Student Teaching Programs	Max. 8

5. **Content Area:** Comprehension of the dimensions and structure of a specialized subject field or discipline, and skill in ordering this content into teaching concepts:

Usually a minimum of 50 hours of graduate level study in a given content area, including masters' preparation.

NOTE: This competency replaces the typical Support Area of the doctoral program.

Comprehensive Written and Oral Exams: Relating to the instruction of the content area at the appropriate levels.

Oral Examination in Defense of the Dissertation.

Curriculum and Instruction

Plan III — Professional Field Experience

Intent: Designed to prepare candidates to work in curriculum and instruction in the several content areas such as coordinators, methods teachers, consultants in student teaching.

Core Requirements:

		<i>Hours Credit</i>
ID	400—Introduction to Doctoral Research (or equivalent)	3
ID	423—Doctoral Dissertation (18 hours). Relating to the development of instructional and curricular programs	18
EDHP	461—Philosophical Foundations of Education	3
EDHP	462—Psychological Foundations of Education	3
PCG	441—Sociological Foundations of Education	3

Areas of Competency: The candidate shall demonstrate competency, *usually* by completion of advanced graduate course work, in *each* of the following areas. Specific courses, unless noted, are *recommended*.

1. Comprehension of factors involved and practices utilized in the development and management of programs in student teaching and other field experiences.

SFE	351—Supervision of Student Teachers	3
SFE	352—Organization of Student Teaching Programs	3
ID	451—Supervised Practicum in College Teaching	Max. 9
ID	452—Internship in Supervising College Teaching	3
ID	322—Individual Studies	Max. 12
HIED	391—Higher Education in the United States	3
HIED	492—The College Teacher	3
HIED	493—The College and University Curriculum	3

NOTE: This competency replaces the typical Support Area of the doctoral program.

2. Comprehension of historical, philosophical, social and cultural factors affecting curriculum, and ability to utilize these in the development of K-12 instructional programs.

IDVE	210—Principles of Vocational Education	3
ELED	314—Elementary Curriculum	3
EDCI	361—Secondary Instruction	3

EDCI	362—The Development of Instructional Practice	3
EDCI	363—Curriculum in the Junior High School	3
EDCI	364—Seminar in Junior High School Instruction	Max. 6
EDCI	366—Foundations for Curriculum Development	3
EDCI	367—Modern Curricular Programs	3
EDCI	368—Seminar in Curriculum and Instruction	Max. 9
EDCI	468—Advanced Seminar in Curriculum and Instruction	Max. 9
HIED	393—The Junior and Community College	3
HIED	493—The College and University Curriculum	3

3. Comprehension of psychological factors, especially learning theory, human growth and development and mental hygiene, skill in employing classroom guidance techniques, and ability to utilize these in the development of the instructional program.

PSY	240—Psychology of Learning	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
PCG	314—Techniques of Group Guidance	3
PCG	332—Psychology of Adolescence	3
PCG	340—Theories of Learning	5

4. Comprehension of organizational process and factors influencing administrative decisions, and skill in ordering and applying these techniques to the administration of a school system's instructional program.

EDAD	342—School Administration—Federal, State, Local	3
EDAD	343—School Finance	3
EDAD	344—School Plant Planning	3
EDAD	348—School Law II	3
EDAD	355—Organization, Administration, and Supervision of Elementary School	3
EDAD	365—Secondary School Organization, Administration, and Supervision	3

5. Development of skill in applying various technologies to the development of the instructional program of the school system.

RSM	204—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	313—Planning and Methodology of Research	3
RSM	420—Dissertation Evaluation	0
EM	206—Audio-Visual Materials in Education	4
EM	207—Audio-Visual Administration Workshop	3
EM	208—Local Production of Audio-Visual Instructional Materials	3
PCG	370—Principles and Practices of Tests and Measurements	3
PCG	371—Aptitude and Achievement Analysis	5
PSY	293—Sociodrama	3
PSY	294—Sociometry	3
READ	217—Reading in the Content Fields	3
READ	317—Remedial Reading in the Secondary Schools	3

Comprehensive Written and Oral Exams: Relating to the development of instructional competency, particularly through field experience.

Oral Examination in Defense of the Dissertation.

Supporting Area

Those wishing to use Secondary Curriculum and Instruction as a supporting area in their doctoral programs should take a minimum of 24 quarter hours of advanced graduate work selected with the departmental adviser's approval from the following:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
EDCI	360—Professional Roles and Responsibilities	3
EDCI	361—Secondary Instruction	3
EDCI	362—The Development of Instructional Practice	3
EDCI	363—Curriculum in the Junior High School	3
EDCI	364—Seminar in Junior High School Instruction	Max. 6
EDCI	366—Foundations for Curriculum Development	3
EDCI	367—Advanced Curriculum Concepts	3
EDCI	368—Seminar in Curriculum and Instruction	Max. 9
EDCI	468—Advanced Seminar in Curriculum and Instruction	Max. 9

Economics

Master of Arts Degree

A concentration in Economics is offered within the major in Social Science. See Social Science, page 92.

Educational Administration

Generally, degree programs in this department constitute the basis for institutional recommendation for administrative certification in Colorado and, increasingly, in a number of other states as well. Because certification programs are approved annually by the State Board of Education as of October 1, specific requirements may vary slightly from those published in this catalog. Students entering a degree program will be expected to meet the requirements of the officially approved program in effect at the time of their admission.

In all degree programs in this department, the student's adviser has the prerogative of waiving specific course requirements on the basis of the student's previous experience and training.

Master of Arts Degree

Completion of the M.A. degree qualifies for the principal's certificate in Colorado. All M.A. students must meet the following course requirements:

Course No.	Course Title	Hours	Credit
ID	300—Introduction to Graduate Study	3	
EDAD	342—School Administration—Federal, State, and Local	3	
EDAD	343—School Finance	3	
EDAD	344—Problems in Educational Facility Planning	3	
EDAD	348—School Law II (EDAD 243, School Law I, may be substituted)	3	
EDCI	366—Foundations for Curriculum Development	3	
PCG	370—Principles and Practices in Testing and Measurement	3	
RSM	204—Descriptive Statistics	4	

1. Sufficient experience to indicate probable success as an administrator is required.

In addition to the above common requirements, each emphasis has unique course requirements, as follows:

Elementary School Administration

Course No.	Course Title	Hours	Credit
EDAD	355—Organization, Administration, and Supervision of the Elementary School	4	
ELED	314—The Elementary School Curriculum	3	
PCG	307—Guidance in the Elementary School	3	

Those who do not have a background of preparation for elementary teaching are required to take four of the following:

Course No.	Course Title	Hours	Credit
ELED	310—Reading in the Elementary School	3	
ELED	311—English in the Elementary School	3	
ELED	312—Mathematics in the Elementary School	3	
ELED	313—Social Studies in the Elementary School	3	
SCED	371—Science Curriculum in the Elementary School	3	
	Electives to complete graduation requirements		

Junior High School Administration

Course No.	Course Title	Hours	Credit
EDAD	365—Secondary School Organization, Administration, and Supervision.....	4	
EDCI	363—Curriculum in the Junior High School	3	
EDCI	364—Seminar in Junior High School Instruction	6	
PCG	317—Foundations of Guidance	3	
	Electives in Psychology	3-6	
	Electives to complete graduation requirements		

Secondary School Administration

Course No.	Course Title	Hours	Credit
EDAD	365—Secondary School Organization, Administration, and Supervision.....	4	
EDCI	361—Secondary Instruction	3	
PCG	317—Foundations of Guidance	3	
	Electives in psychology	3-6	
	Electives to complete graduation requirements		

Specialist in Education Degree

Elementary School Administration

The following is the required program:

1. Sufficient experience to indicate probable success as an administrator is required.
2. Completion of all specific requirements for the M.A. in Elementary School Administration.
3. Course requirements listed below:

		Hours	Credit
ID	400—Introduction to Doctoral Research	3	
ID	401—Specialist Degree Practicum	8	
EDAD	441—Seminar in Administrative Theory and Research	3	
EDAD	442—Seminar in Communication Theory	3	
EDAD	443—Seminar in Decision Theory	3	
RSM	305—Statistical Inference	5	

Three of the following:

Course No.	Course Title	Hours	Credit
ELED	320—Analysis of Reading Methods	3	
ELED	321—Seminar in Elementary School English	3	
ELED	322—Seminar in Elementary School Mathematics	3	
ELED	323—Seminar in Elementary School Social Studies.....	3	
SCED	373—Research in Science Education	3	

Two of the following:

Course No.	Course Title	Hours	Credit
EDHP	461—Philosophical Foundations of Education	3	
EDHP	463—Sociological Foundations of Education	3	
PCG	441—Psychological Foundations of Education	3	

4. Electives to complete requirements for graduation, including at least six quarter hours outside the field of education.

Secondary School Administration

The following is the required program:

1. Sufficient experience to indicate probable success as an administrator is required.
2. Completion of all specific requirements for the M.A. in Secondary School Administration.

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3. Course requirements listed below:

Course No.	Course Title	Hours	Credit
ID	400—Introduction to Doctoral Research	3	
ID	401—Specialist Degree Practicum	8	
EDAD	441—Seminar in Administrative Theory and Research	3	
EDAD	442—Seminar in Communication Theory	3	
EDAD	443—Seminar in Decision Theory	3	
EDCI	383—Curriculum in the Junior High School	3	
EDCI	387—Advanced Curriculum Concepts	3	
RSM	305—Statistical Inference	5	

Two of the following:

Course No.	Course Title	Hours	Credit
EDHP	461—Philosophical Foundations of Education	3	
EDHP	463—Sociological Foundations of Education	3	
PCG	441—Psychological Foundations of Education	3	

4. Electives to complete requirements for graduation, including at least six quarter hours outside the field of education.

General School Administration

The following is the required program:

1. Sufficient experience to indicate probable success as an administrator is required.
2. Completion of the common requirements for the M.A. in administration.
3. Course requirements listed below:

Course No.	Course Title	Hours	Credit
ID	400—Introduction to Doctoral Research	3	
ID	401—Specialist Degree Practicum	8	
EDAD	355—Organization, Administration, and Supervision of the Elementary School	4	
EDAD	357—School Personnel Administration	3	
EDAD	365—Secondary School Organization, Administration, and Supervision	4	
EDAD	441—Seminar in Administrative Theory and Research	3	
EDAD	442—Seminar in Communication Theory	3	
EDAD	443—Seminar in Decision Theory	3	
EDCI	366—Foundations for Curriculum Development	3	
ELED	314—The Elementary School Curriculum	3	
RSM	305—Statistical Inference	5	

Two of the following:

Course No.	Course Title	Hours	Credit
EDHP	461—Philosophical Foundations of Education	3	
EDHP	463—Sociological Foundations of Education	3	
PCG	441—Psychological Foundations of Education	3	
	Two methods courses in elementary education	6	

4. Electives to complete requirements for graduation, including at least six quarter hours outside the field of education.

NOTE: Completion of this degree qualifies for the superintendent's certification in Colorado.

NOTE: An alternative to this degree plan is the "EDAD 430 program," consisting of six two-week seminars on campus during the academic year plus one quarter of full-time residence. Admission by invitation of the department. Inquiries should be sent to the department.

School Business Management

This program is designed to prepare persons for careers as school district business officials. Generally, applicants will have preparation and experience in business or in education, but typically not in both. Most candidates, therefore,

may be required to take a minimum number of undergraduate courses (in business or in education) to complement previous training and to acquire the necessary competence in this program.

Specific courses should be selected from the following:

Course No.	Course Title	Hours	Credit
ID	400—Introduction to Doctoral Research	3	3
ID	401—Specialist Degree Practicum	8	8
BUS	240—Introduction to Insurance	3	3
BUS	252—Office Management	3	3
BUS	256—Business Policies and Management	3	3
BUS	270—Financial Management	3	3
BUS	280—Systems and Procedures	3	3
BUS	287—Electronic Data Processing	3	3
BUS	320—Management Accounting	3	3
BUS	330—Applied Business Law	5	5
BUS	353—Seminar in Personnel Management	2	2
BUS	390—Operations Analysis	3	3
EDAD	342—School Administration—Federal, State, and Local	3	3
EDAD	343—School Finance	3	3
EDAD	344—Problems in Education Facility Planning	3	3
EDAD	346—School Budgeting	2	2
EDAD	347—School Purchasing and Warehousing	4	4
EDAD	348—School Law II	3	3
EDAD	349—Auxiliary Management Services	2	2
EDAD	441—Seminar in Administrative Theory and Research	3	3
EDAD	442—Seminar in Communication Theory	3	3
EDAD	443—Seminar in Decision Theory	3	3

Doctor of Education Degree

Students in the doctoral program may specialize in elementary school administration, secondary school administration, general school administration, or the administration of higher education. Generally, students are expected to complete the specific course requirements enumerated for the M.A. and Ed.S. degrees or to demonstrate competence in those areas.

Each student will plan *his* program in consultation with his adviser and in light of his background and specific needs. The following requirements apply to all doctoral students in school administration:

1. Sufficient experience to indicate probable success as an administrator is required.
2. Course requirements listed below:

Course No.	Course Title	Hours	Credit
ID	400—Introduction to Doctoral Research	3	3
ID	423—Doctoral Dissertation	18	18
EDAD	441—Seminar in Administrative Theory and Research	3	3
EDAD	442—Seminar in Communication Theory	3	3
EDAD	443—Seminar in Decision Theory	3	3
EDAD	444—Seminar in Executive Leadership	3	3
EDAD	445—Seminar in Management Systems and Analysis	3	3
EDAD	446—Cases in Educational Administration (Seminar)	3	3
EDHP	461—Philosophical Foundations of Education	3	3
EDHP	463—Sociological Foundations of Education	3	3
PCC	340—Theories of Learning	5	5
PCC	441—Psychological Foundations of Education	3	3

3. Electives to complete graduation requirements, including at least twelve quarter hours outside the field of education.

Educational Media

Master of Arts Degree

The purpose of this program is to prepare teachers as supervisors for what has been variously called the comprehensive library, educational media center, instructional materials center or learning resource center. While the title is not

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significant the concept of teachers trained and qualified to handle both print and non-print materials is important. This is particularly true for those teachers interested in working at the building level or in the small and medium size school systems.

EM 206, Introduction to Educational Resources or a comparable course is to be taken before, or concurrently with entrance into the program.

The following courses or their equivalent are required:

Course No.	Course Title	Hours	Credit
ID	300—Introduction to Graduate Study	3	
EM	301—Practicum	4	
EDCI	361—Secondary Instruction		
	<i>or</i>		
ELED	314—The Elementary School Curriculum	3	
PCG	340—Theories of Learning	5	
EM	208—Design and Construction of Audio-Visual Materials	3	
EM	280—Introduction to Classification and Cataloging	3	
EM	282—Reference Materials for Educational Resource Center	3	
EM	283—Evaluation and Selection of Educational Materials	5	
EM	286—Utilization of Educational Resources	3	
EM	287—Organization and Administration of Educational Resource Center.....	5	
EM	306—Trends and Issues in Educational Media	3	

Electives: to complete the minimum 45 hours required for the M.A., the student may select these or other electives as approved by his adviser.

Course No.	Course Title	Hours	Credit
SP	208—Introduction to Television Production	4	
EED	226—Literature and Materials in the Secondary School	4	
EED	227—Literature and Materials in the Jr. High School	4	
EM	281—Processing Educational Materials	3	
EM	305—Conservation and Preservation of Educational Resources	3	
EM	308—Production of Photographic Teaching Materials	3	
EM	380—Philosophy and Principles of Outdoor Education.....	3	
EDAD	344—School Plant Planning	3	
READ	315—Literature in the Elementary School	2	

Outdoor education affords students the opportunity to actively participate in learning experiences conducted beyond the classroom. Natural and community resources (including human) are utilized in providing direct, firsthand learning experiences. Students are provided an opportunity to participate in the outdoor school programs conducted in the Laboratory School, and in Special Education. Course offerings which have significance for this broad area are offered in every department of the college. Listed below are two specific courses which are introductory in nature.

Course No.	Course Title	Hours	Credit
EM	380—Philosophy and Principles of Outdoor Education	3	
ID	200—Workshop: Outdoor Education	3	

Elementary Education and Reading

Master of Arts Degree

Elementary Education

The following are required:

1. A student whose undergraduate major was not in elementary education must have evaluations by the School of Education and by the Department of Elementary Education and Reading.

2. Core course requirements. ELED 311, 312, 313, READ 320 must be taken at Colorado State College. A student who has recently completed ELED 111, 112, and 113 at Colorado State College will substitute ELED 321, 322 and 323 for ELED 311, 312, and 313.

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
ELED	311—English in the Elementary School	3
ELED	312—Mathematics in the Elementary School	3
ELED	313—Social Studies in the Elementary School	3
READ	320—Analysis of Reading Methods	3
SCED	371—Science Curriculum in the Elementary School	3

3. Background course requirements. The adviser may waive the following courses for a student who has had comparable courses on the undergraduate level; however, the student is held for the course content on comprehensive examinations. In reading select either READ 310 or READ 222 and 223. The adviser may substitute subject matter courses for education courses if the student has an extensive background in education and a limited background in subject matter.

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ELED	309—Handwriting and Spelling in the Elementary School	2
READ	222—Reading in the Primary Grades	3
READ	223—Reading in the Intermediate Grades	3
READ	310—Reading in the Elementary School	3
READ	315—Literature in the Elementary School	2
PCG	370—Principles and Practices in Testing and Measurement	3

4. Subject-matter course requirements. Subject matter courses totaling 15 quarter hours in one or more of the following areas. To be selected in consultation with the adviser. The adviser may substitute education courses for subject-matter courses if the student earned an undergraduate non-teaching degree in a subject area listed below.

Anthropology	Humanities
Biological Sciences	Philosophy
Chemistry	Mathematics
Earth Science	Music
Economics	Physics
English	Political Science
Fine Arts	Research and Statistical Methodology
Geography	Social Sciences
General Science	Sociology
History	Speech

5. Sufficient electives to complete 45 quarter hours of graduate academic credit.

Elementary Education: Early Childhood

The following are required:

1. A student whose undergraduate major was not in elementary education must have evaluations by the School of Education and by the Department of Elementary Education and Reading.
2. A student must have completed two years of classroom teaching experience at nursery school or elementary school level before completion of the program.
3. Required courses.

Block A. Core course requirements.

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ELED	227—Kindergarten Education	3
ELED	330—Early Childhood Education	3
ELED	331—Seminar: Early Childhood Education	3
ELED	332—Psycholinguistics	3
ELED	333—Nursery Schools for the Culturally Disadvantaged	3
READ	222—Reading in the Primary Grades	3
READ	319—Teaching the Culturally Disadvantaged to Read	3
PCG	330—Psychology of Early Childhood	3

Block B. A tract of 21 quarter hours is required.

1. Instructional tract. In consultation with adviser, select 21 quarter hours of electives.

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2. Research tract. By invitation of adviser, select 21 quarter hours of statistics, thesis, and related courses.

Reading: Elementary

The following are required:

1. A student whose undergraduate major was not in elementary education must have evaluations by the School of Education and by the Department of Elementary Education and Reading.

2. Core course requirements. READ 310, 320, 324, 325, 326 must be taken at Colorado State College. Select either READ 310 or 222 and 223.

Course No.	Course Title	Hours	Credit
ID	300—Introduction to Graduate Study	3	3
READ	222—Reading in the Primary Grades	3	3
READ	223—Reading in the Intermediate Grades	3	3
READ	310—Reading in the Elementary School	3	3
READ	315—Literature in the Elementary School	2	2
READ	320—Analysis of Reading Methods	3	3
READ	324—Remedial Reading in the Elementary School	4	4
READ	325—Remedial Reading Case Study	3	3
READ	326—Remedial Reading Internship	3	3

3. Elective courses in reading. A minimum of 30 quarter hours will be earned in core course requirements and elective courses in reading.

Course No.	Course Title	Hours	Credit
READ	217—Reading in the Content Fields	3	3
READ	308—Linguistic Foundations of Reading Instruction	3	3
READ	316—Developmental Reading in the Secondary School	3	3
READ	319—Teaching the Culturally Disadvantaged to Read	3	3
READ	327—Reading Center Internship: Reading Clinic, College Reading, Adult Literacy	Max. 9	
EED	226—Literature and Materials in the Secondary School	4	4
EED	227—Literature and Materials in the Junior High School	4	4

4. In consultation with adviser select 15 quarter hours in English and speech courses for an emphasis in developmental reading. For an emphasis in remedial reading select, in consultation with adviser, 15 quarter hours in psychology and special education courses.

Reading: Secondary

The following are required:

1. A student who does not hold certification as a secondary school teacher must have evaluations by the School of Education and by the department in which certification is sought.

2. Core course requirements. READ 316, 317, 320, 325, and 326 must be taken at Colorado State College. Select either EED 226 or 227.

Course No.	Course Title	Hours	Credit
ID	300—Introduction to Graduate Study	3	3
READ	217—Reading in the Content Fields	3	3
READ	316—Developmental Reading in the Secondary School	3	3
READ	317—Remedial Reading in the Secondary School	4	4
READ	320—Analysis of Reading Methods	3	3
READ	325—Remedial Reading Case Study	3	3
READ	326—Remedial Reading Internship	3	3
EED	226—Literature and Materials in the Secondary School	4	4
EED	227—Literature and Materials in the Junior High School	4	4

3. Elective courses in reading. A minimum of 30 quarter hours will be earned in core course requirements and elective courses in reading. If some of the core courses have been taken previously, the following electives may be substituted.

Course No.	Course Title	Hours	Credit
READ	216—Reading in the Secondary School	3	3
READ	222—Reading in the Primary Grades	3	3

READ	223—Reading in the Intermediate Grades	3
READ	308—Linguistic Foundations of Reading Instruction	3
READ	310—Reading in the Elementary School	3
READ	315—Literature in the Elementary School	2
READ	319—Teaching the Culturally Disadvantaged to Read	3
READ	327—Reading Center Internship: Reading Clinic, College Reading, Adult Literacy	Max. 9
EED	350—Seminar in Literature for Adolescents	4

4. In consultation with adviser select 15 quarter hours in English and speech courses for an emphasis in developmental reading. For an emphasis in remedial reading select, in consultation with adviser, 15 quarter hours in psychology and special education.

Specialist in Education Degree

Reading

The Specialist in Education Degree program is planned for each individual on the basis of his background and experience.

1. Core course requirements.

Course No.	Course Title	Hours Credit
ID	400—Introduction to Doctoral Research	3
ID	401—Specialist Degree Practicum	8
READ	327—Reading Center Internship: Reading Clinic, College Reading, Adult Literacy	Max. 9
READ	410—Seminar in Reading	3
RSM	304—Descriptive Statistics	4
RSM	305—Statistical Inference	5

2. In consultation with adviser select a minimum of 19 quarter hours in reading, psychology, English, speech, and special education.

Doctor of Education Degree

Elementary Education: Two-Year Program

The following are required:

1. RSM 304, an elementary education course preferably with the adviser, and ID 400 are required the first quarter, and RSM 305 is required the second quarter on the doctoral program unless exemption is granted by the adviser on the basis of previous course work.

2. Core course requirements. ELED 321, 322, 323, and READ 410 must be taken at Colorado State College.

Course No.	Course Title	Hours Credit
ID	423—Doctoral Dissertation	18
ELED	321—Seminar in Elementary School English	3
ELED	322—Seminar in Elementary School Mathematics	3
ELED	323—Seminar in Elementary School Social Studies	3
READ	410—Seminar in Reading	3
EDHP	461—Philosophical Foundations of Education	3
EDHP	463—Sociological Foundations of Education	3
PCG	441—Psychological Foundations of Education	3
RSM	420—Seminar in Dissertation Evaluation	0
SCED	377—Modern Development of School Science	3

3. Background course requirements. The adviser may waive the following courses for a student who has appropriate background; however, with the exception of ID 400 the student is held for the course content on comprehensive examinations. READ 222 and 223 may be substituted for Read 310. The adviser may substitute subject matter courses for education courses if the student has an extensive background in education and a limited background in subject matter.

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Course No.	Course Title	Hours	Credit
ID	400—Introduction to Doctoral Research	3	
ELED	309—Handwriting and Spelling in the Elementary School	2	
ELED	311—English in the Elementary School	3	
ELED	312—Mathematics in the Elementary School	3	
ELED	313—Social Studies in the Elementary School	3	
ELED	314—The Elementary School Curriculum	3	
READ	310—Reading in the Elementary School	3	
READ	315—Literature in the Elementary School	2	
READ	320—Analysis of Reading Methods	3	
PCG	370—Principles and Practices in Testing and Measurement	3	

4. Subject matter requirements. RSM 304 and 305 are required courses. Subject-matter courses to total 24 quarter hours in one or more of the following areas, to be selected in consultation with the adviser. If a student has earned more than 15 quarter hours of graduate credit in subject matter courses prior to the doctoral program, the adviser may substitute education courses in the amount of such excess of 15 quarter hours.

Course No.	Course Title	Hours	Credit
RSM	304—Descriptive Statistics	4	
RSM	305—Statistical Inference	5	

Anthropology	Humanities
Biological Sciences	Mathematics
Chemistry	Music
Earth Science	Philosophy
Economics	Physics
English	Political Science
Fine Arts	Research and Statistical Methodology
General Science	Social Sciences
Geography	Sociology
History	Speech

5. Sufficient electives to complete 90 quarter hours of graduate credit.

Elementary Education: Three-Year Program

The following are required:

1. First year. Complete the master of arts degree program in elementary education.
2. Second and third years. RSM 304 is required the first quarter of the second year, and RSM 305 is required the second quarter of the second year. ELED 321, 322, 323, and READ 410 must be taken at Colorado State College. A minimum of two of the courses HIED 391, 492, and 493 is required. A minimum of 24 quarter hours in subject-matter courses including RSM 304 and 305 is required. Sufficient electives to complete 90 quarter hours of graduate credit in the second and third years.

Course No.	Course Title	Hours	Credit
ID	423—Doctoral Dissertation	18	
ID	451—Supervised Practicum in College Teaching	3-9	
ELED	321—Seminar in Elementary School English	3	
ELED	322—Seminar in Elementary School Mathematics	3	
ELED	323—Seminar in Elementary School Social Studies	3	
READ	310—Seminar in Reading	3	
EDHP	461—Philosophical Foundations of Education	3	
EDHP	463—Sociological Foundations of Education	3	
HIED	391—Higher Education in the United States	3	
HIED	492—The College Teacher	3	
HIED	493—The College and University Curriculum	3	
PCG	441—Psychological Foundations of Education	3	
RSM	304—Descriptive Statistics	4	
RSM	305—Statistical Inference	5	
RSM	420—Seminar in Dissertation Evaluation	0	
SCED	377—Modern Development of School Science	3	

Reading: Two-Year Program

The program is based upon certification to teach in the elementary or secondary school and upon the completion of 12 quarter hours of psychology.

The following are required:

1. RSM 304 and ID 400 are required the first quarter, and RSM 305 is required the second quarter on the doctoral program unless exemption is granted by the adviser on the basis of previous course work.

2. In consultation with adviser select 66 quarter hours from among the following courses.

Course No.	Course Title	Hours Credit
ID	400—Introduction to Doctoral Research	3
ID	423—Doctoral Dissertation	18
ID	451—Supervised Practicum in College Teaching	3-9
ID	322—Individual Study: Reading	4
READ	217—Reading in the Content Fields	3
READ	308—Linguistic Foundations of Reading Instruction	3
READ	315—Literature in the Elementary School	2
READ	316—Developmental Reading in the Secondary School	3
READ	317—Remedial Reading in the Secondary School	4
READ	318—Developmental and Remedial Reading at the College Level	2
READ	319—Teaching the Culturally Disadvantaged to Read	3
READ	320—Analysis of Reading Methods	3
READ	324—Remedial Reading in the Elementary School	4
READ	325—Remedial Reading Case Study	3
READ	326—Remedial Reading Internship	3
READ	327—Reading Center Internship: Reading Clinic, College Reading, Adult Literacy	Max. 9
READ	410—Seminar in Reading	3
EED	226—Literature and Materials in the Secondary School	4
EED	227—Literature and Materials in the Junior High School	4
RSM	304—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	420—Seminar in Dissertation Evaluation	0

3. In consultation with adviser select 24 quarter hours of course work in English, speech, and psychology.

Reading: Three-Year Program

The following are required:

1. First year. Complete a master of arts degree. In consultation with adviser the subject matter courses will be selected from English, speech, psychology, and special education.

2. Second and third years. RSM 304 is required the first quarter of the second year, and RSM 305 is required the second quarter of the second year. In consultation with adviser select a minimum of 90 quarter hours from among the following courses and elective courses.

Course No.	Course Title	Hours Credit
ID	423—Doctoral Dissertation	18
ID	451—Supervised Practicum in College Teaching	3-9
ID	322—Individual Study: Reading	4
READ	217—Reading in the Content Fields	3
READ	308—Linguistic Foundations of Reading Instruction	3
READ	315—Literature in the Elementary School	2
READ	316—Developmental Reading in the Secondary School	3
READ	317—Remedial Reading in the Secondary School	4
READ	318—Developmental and Remedial Reading at the College Level	2
READ	319—Teaching the Culturally Disadvantaged to Read	3
READ	320—Analysis of Reading Methods	3
READ	324—Remedial Reading in the Elementary School	4
READ	325—Remedial Reading Case Study	3
READ	326—Remedial Reading Internship	3
READ	327—Reading Center Internship: Reading Clinic, College Reading, Adult Literacy	Max. 9
READ	410—Seminar in Reading	3
EED	226—Literature and Materials in the Secondary School	4

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EED	227—Literature and Materials in the Junior High School	4
HIED	391—Higher Education in the United States	3
PCG	315—Counseling Theory and Techniques	3
PCG	331—Child Psychology	3
PCG	340—Theories of Learning	5
PCG	373—Individual Tests of Intelligence	4
PCG	374—Supervised Practice in the Use of Individual Tests of Intelligence	6
RSM	304—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	420—Seminar in Dissertation Evaluation	0

English

Master of Arts Degree

As a minimum requirement, the student will take ID 300, Introduction to Graduate Study (English), and one course from each of the five groups which follow. Other courses may be elected as the student wishes.

- I.
 1. English 313—Chaucer and Middle English
 2. English 314—Shakespeare Seminar
 3. English 315—Milton Seminar
- II.
 4. English 311—Seminar in English Romantic Movement
 5. English 319—Literature of the Eighteenth Century
 6. English 320—Seminar in Victorian Literature
 7. English 321—Seminar in the Twentieth Century
- III.
 8. English 303—Seminar in Twentieth Century British and American Poetry
 9. English 305—Seminar in Major American Writers I
 10. English 306—Seminar in Major American Writers II
- IV.
 11. English 211—The English Language
 12. English 312—Old English
 13. English 323—Modern English Philology and Usage
- V.
 14. English 231—The Short Story
 15. English 232—Techniques of the Novel
 16. English 236—Modern Drama Since Ibsen

The comprehensive examination, to be taken during the quarter in which the student plans to graduate, will cover a knowledge of English and American literature and literary research and the ability to explicate a literary work.

Doctor of Education Degrees

The English Department offers two programs leading to the degree of Doctor of Education. One of these is designed to educate the candidate to become a successful college teacher of English; the other is a degree in English education to educate leaders in secondary school English teaching and college teachers of English methods. The requirements for each degree are given below.

The Program for College Teachers of English

1. Admission—A master's degree in English or its equivalent.
2. During his second quarter the candidate will take a qualifying examination in English which will serve as a screening examination and as a basis for planning course work for the remainder of the program.
3. Before completing his course work the student will demonstrate a reading knowledge of one foreign language.
4. The course of study consists of a major of 48 hours chosen from the graduate courses in American, English and world literature. The specific program will be planned in consultation with the student's major professor.

5. In addition to the major, the student will have a supporting area of 24 hours, at least 18 of which will be in the areas of linguistics, philosophy, and English education. The remaining course work may be selected from graduate offerings in history, speech, or foreign language as the program is planned with the major professor.

6. A dissertation yielding 18 hours of credit is required of each candidate.

7. At the termination of the candidate's course work, he will take written and oral examinations over his major area.

8. When the dissertation is complete, the student will be examined orally over his research study.

The Program in English Education

1. The requirements for admission are the master's degree in English or its equivalent, including at least 64 hours of English and 40 hours of professional education (including English education) at the undergraduate and/or graduate level.

2. If the student has not had a graduate course in bibliography and methods of research, he will be required to take ID 400, Introduction to Doctoral Research. He will also be required to demonstrate a reading knowledge of one foreign language or have taken at least 20 undergraduate hours of a single foreign language. The student will also take RSM 204, Descriptive Statistics.

3. The program consists of a minimum of 72 hours of course work (including ID 400 and RSM 204) which will be divided almost equally between academic courses in literature and linguistics and courses in education and English education. The specific program will be planned in consultation with the major professor.

4. At the conclusion of his course work, the candidate will take written comprehensive examinations covering his work in English education, English, and education.

5. The candidate will submit a dissertation in some phase of English education for 18 hours credit.

6. After the dissertation has been submitted, the candidate will be examined orally over the contents of his research study.

Fine Arts

Master of Arts Degree

1. Applications will be processed first by the graduate office.
2. Every applicant to the program with a Bachelor of Arts degree will be required to submit a portfolio and/or slides of his art work to the Department of Fine Arts before being accepted into the program.
3. After an evaluation of the portfolio by the Department of Fine Arts, the student will be accepted or rejected by the Department.
4. An applicant who does not have an undergraduate major in Fine Arts will be required to complete the basic requirements for an undergraduate degree before being considered for admission to the Master of Arts degree program.
5. Upon being accepted, each graduate student will be assigned to an advisor in Fine Arts by the Department of Fine Arts Chairman and can thereby specialize in an area of his choice such as: elementary art education, secondary art education, supervision of art, a general art education program, ceramics, crafts, drawing, history of art, painting, printmaking, or sculpture.
6. For specialization in specific areas of study students may complete 12 quarter hours of ID 322, Individual Studies (Fine Arts) and/or 12 quarter hours of ID 301, Practicum (Fine Arts). Eight quarter hours per quarter in either ID 322 or ID 301 is the maximum allowed.

Geography

Master of Arts Degree

Required Courses:

- ID 300—Introduction to Graduate Study in Geography
GEOG 305—Evolution of Geographic Thought

A minimum of 30 hours must be taken in Geography.

A thesis shall be required for which 9 hours credit will be given.

Note: This degree is primarily designed for those students intending to pursue further work in the geographic discipline.

Master of Arts in Social Science (Geography)

For concentrations in Geography, see the course requirements listed under Social Science Major.

Doctor of Education

Pre-requisites:

- (1) Meet general Graduate School admission requirements
- (2) Take advanced G.R.E. examination in Geography
- (3) Minimum of 20 hours of geography credit
- (4) Hold a Master's Degree

Program Requirements:

- (1) Minimum of 48 hours of geography including dissertation
- (2) Minimum of 15 hours of credit in related discipline and GEOG 305 and ID 300 (Geography)
- (3) Complete 27 hours of "electives" with approval of adviser
- (4) Write dissertation under direction of adviser in Geography Department (for which 18 hours of credit will be granted)
- (5) Indicate competency in either one language or statistics.

Health, Physical Education and Recreation

The degree of *Master of Arts* is offered in the following majors:

Health Education
Physical Education
Physical Education: Dance
Physical Education: Supervision¹
Recreation

The degree of *Specialist in Education* is offered. See the Specialist in Education section of the Graduate Academic Information.

The degree of *Doctor of Education* is offered in the following area of concentration:

Health and Physical Education

¹Major requires two years of actual teaching experience as a prerequisite.

Master of Arts Degree

Health Education

The following are the required courses in the major:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
HPER	302—Introduction to Research in Health, Physical Education and Recreation	3
HPER	304—School Health Administration	4
HPER	305—Public Health Problems	4
HPER	340—Curriculum in Health and Physical Education	4
HPER	350—Seminar in Health Education	2-4
ID	301—Practicum: Community Health Education	1-4
	Electives (to be selected with advisement to meet the student's professional objectives and complete deficiencies apparent following evaluation of previous college work)	22-27
		<hr/> 45

Physical Education for Men

The following are the required courses in the major:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
HPER	302—Introduction to Research in Health, Physical Education, and Recreation....	3
HPER	312—Evaluation in Health, Physical Education, and Recreation.....	4
HPER	322—Advanced Physiological Kinesiology	4
HPER	340—Curriculum in Health and Physical Education.....	4
	Electives (to be selected with advisement to meet the student's professional objectives and complete deficiencies apparent following evaluation of previous college work).....	30
		<hr/> 45

Physical Education for Women

The following are the required courses in the major:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
HPER	302—Introduction to Research in Health, Physical Education and Recreation....	3
HPER	312—Evaluation in Health, Physical Education, and Recreation	4
HPER	322—Advanced Physiological Kinesiology	4
HPER	340—Curriculum in Health and Physical Education.....	4

One elective from the following:

HPER	245—Advanced Techniques in Teaching Gymnastic Activities.....	4
HPER	246—Advanced Techniques in Teaching Individual Sports	4
HPER	247—Advanced Techniques in Teaching Team Sports	4
HPER	248—Advanced Techniques in Teaching Dance Activities.....	4
HPER	258—Dance Methods and Materials	4
	Electives (to be selected with advisement to meet the student's professional objectives and complete deficiencies apparent following evaluation of previous college work).....	26
		<hr/> 45

Physical Education—Dance

The following are the required courses in the major:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
HPER	256—Workshop in Modern Dance	4
HPER	257—Dance History and Philosophy	4
HPER	258—Dance Methods and Materials	4
HPER	302—Introduction to Research in Health, Physical Education and Recreation	3

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HPER	312—Evaluation in Health, Physical Education and Recreation.....	4
HPER	322—Advanced Physiological Kinesiology	4
HPER	340—Curriculum in Health and Physical Education.....	4
ID	301—Practicum: Supervised Dance Teaching	2-4
PCG	380—Theories of Personality	3
SP	213—Advanced Staging Techniques	4
	Electives (to be selected with advisement to meet the student's professional objectives and complete deficiencies apparent following evaluation of previous college work).....	7-9
		45

Physical Education—Supervision

The following are the required courses in the major:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
HPER	302—Introduction to Research in Health, Physical Education and Recreation....	3
HPER	312—Evaluation in Health, Physical Education and Recreation.....	4
HPER	322—Advanced Physiological Kinesiology	4
HPER	340—Curriculum in Health and Physical Education.....	4
HPER	344—Supervision of Physical Education and Recreation.....	4
	Electives (to be selected with advisement to meet the student's professional objectives and complete deficiencies apparent following evaluation of previous college work).....	26
		45

Recreation

The following are the required courses in the major:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
HPER	302—Introduction to Research in Health, Physical Education and Recreation....	3
HPER	310—Evaluation and Research in Parks and Recreation	4
HPER	344—Supervision of Physical Education and Recreation.....	4
HPER	375—Areas and Facilities in Physical Education and Recreation.....	4
HPER	376—Seminar in Contemporary Problems in Recreation.....	4
HPER	377—Parks and Recreation Management	4
	Electives (to be selected with advisement to meet the student's professional objectives and complete deficiencies apparent following evaluation of previous college work).....	26
		45

Doctor of Education Degree

Health and Physical Education

1. In addition to the general requirements listed in the front of this bulletin, students seeking a degree in this program must have two years of teaching experience before completion of the degree.

2. The following common courses or their equivalent are required: (When the word equivalent is used it indicates a student possesses the necessary knowledges and competencies, whether acquired through previous course experiences, substitute courses, or by experience. Competency examinations are provided by the School of Health, Physical Education and Recreation for individual student evaluation when requested.)

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
HPER	402—History of Health, Physical Education and Sport	4
HPER	403—Research Seminar in Health and Physical Education	4
*HPER	404—Problems in Human Movement	4

RSM	304—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	403—Analysis of Variance and Covariance	3
ID	423—Doctoral Dissertation	18
	Elective hours will be selected with advisement to attain knowledge and competency in specialty areas related to Health, Physical Education, and Recreation. Ninety hours of course work are considered to be the minimum for the doctoral degree	48
		<hr/> 90

*Graduate students should possess the knowledges related to advanced principles of structural, mechanical, physiological, psychological, and maturational kinesiology before enrolling in HPER 404. For a more detailed description of these knowledges see course descriptions for HPER 320, 321, 322, 323, 324. Students desiring to specialize in Health Education may substitute HPER 324 for HPER 404.

Higher Education

Doctor of Education Degree

Minor: Higher Education

Any five or more of the following courses including HIED 391:

		<i>Hours Credit</i>
HIED	391—Higher Education in the United States	3
HIED	392—Adult Education	3
HIED	393—The Junior and Community College	3
HIED	492—The College Teacher	3
HIED	493—The College and University Curriculum	3
HIED	494—College Administration	3

Electives are chosen by the student and his adviser working jointly.

Total Program: A minimum of 24 quarter hours.

Suggested electives:

		<i>Hours Credit</i>
CSPW	351—Philosophy and History of College Student Personnel Work	3
CSPW	450—The College and the Student	3
CSPW	451—Organization and Administration of College Student Personnel Work	3
SFE	352—Role of College Field Consultant	3
SFE	353—Leadership in The Development of Student Field Experience Programs	3

History

Master of Arts Degree

Admission and General Requirements:

Consult the graduate catalog for general Graduate School policies. Note: Graduate credit may be earned only in courses numbered 200 and above. At least one-half of the graduate work must be earned in courses numbered 300 and above. A minimum of 45 quarter hours of credit is required for the Master of Arts degree.

Departmental Requirements:

The candidate should consult with his adviser as early as possible to plan his course of study. The candidate should be aware of the following requirements in the major:

A minimum of 24 quarter hours must be earned at the 300 course level in History.

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The candidate's graduate and undergraduate hours of credit in History must total at least 72 hours.

HIST 200: "Introduction to Historical Research" or its equivalent is required of all majors.

HIST 399: "Historiography" is required of all majors, and is offered in lieu of ID 300, Introduction to Graduate Study.

A candidate who intends to pursue a doctoral program should consult with his adviser regarding the advisability of writing a Master's thesis and preparing himself in a foreign language. Candidates who elect to write a thesis are eligible for consideration for the Oliver M. Dickerson Scholarship which is a \$1000.00 stipend granted to a master's candidate majoring in History.

The Master's Comprehensive Examination:

Candidates for the M.A. in History must pass a comprehensive examination which consists of three fields of History. Each of the three parts of the examination will be of three hours duration. The candidate should plan to take the comprehensive examination no earlier than the fourth quarter of his graduate work.

The following fields are offered by the department:

Category I: (U.S. History)

1. Early America, 1607-1815
2. The U.S. Middle Period, 1815-1877
3. Recent America, 1877 to the Present
4. U. S. Diplomatic History
5. History of the American West

Category II: (European History)

1. Ancient History
2. Medieval History
3. Renaissance and Reformation
4. Early Modern Europe, 1600-1789
5. Modern Europe, 1789 to the Present
6. Russia and the Soviet Union

Category III:

1. Asia and the Far East
2. Latin America

The candidate must select one field from category I (U.S. History) and one field from category II (European History); the third field may be chosen from any of the three categories.

The candidate should consult with the professors who will constitute his examining committee in order that he may be aware of his responsibilities regarding the comprehensive examination.

The candidate must apply for and receive from the Graduate Office a "Permit to Take the Final Comprehensive Examination." This must be presented to the adviser before the student may take the examination.

In case of failure to pass at least 2 fields of one comprehensive examination, the candidate may be permitted, upon written request of the major adviser, to retake the entire examination. If the candidate fails just one field of the comprehensive examination he may be permitted, upon written request of his major adviser, to retake only that part of the examination he failed. In either case, failure to pass the second examination will eliminate the candidate from the degree program. At least one quarter must elapse before the candidate may retake the examination.

Doctor of Education Degree

The Department of History offers a program leading to the degree of Doctor of Education. This program is designed for those who are interested in teaching at the junior college or college level. In addition to the general Graduate School ad-

mission regulations for entrance, the following are the requirements of the Department of History:

1. Applicants for admission to the doctoral degree program in History should normally hold at least a B average in their previous academic work, and distinction in their work in History.
2. In addition to the general admission requirements for the graduate school, the Department of History also requires the Advanced Test in History. Information about the Graduate Record Examinations, Aptitude Test, and Advanced Test in History may be obtained from the Educational Testing Service, Princeton, New Jersey.
3. During the student's first quarter of residence, he will take an oral examination in History which will serve as a screening examination and as a basis for planning course work for the remainder of his program.
4. The course of study consists of a major of at least 72 hours chosen from graduate courses (numbered 300 or above) in United States, European, Asian, and Latin American History. History 399 (Historiography) is required of all candidates. As part of the requirement in History, the student may apply up to 18 hours of dissertation credit, the dissertation being a product of original research.
5. In addition to the major requirements, the candidate will, with the approval of his major professor, take a minor area outside of History of at least 18 hours, and will demonstrate reading proficiency in two foreign languages.
6. At the termination of the candidate's course work, and with the approval of his adviser, the candidate will take written and oral comprehensive examinations over his major and minor areas.
7. When the dissertation has been completed, the candidate will be examined orally over his research study.

History and Philosophy of Education

Doctor of Education Degree

Minor: History and Philosophy of Education

Alternative A: Emphasis on History of Education

Alternative B: Emphasis on Social Foundations of Education

Specific Course Requirements:

Alternative A: Emphasis on History of Education

		<i>Hours Credit</i>
EDHP	295—Philosophy of Education. (This course is assumed and required if it does not show on the candidate's transcript.)	3
EDHP	296—History of Education in the United States	3
EDHP	337—Comparative Education	3
EDHP	395—Philosophy of Education (advanced course)	3
EDHP	396—Historical Foundations of Education	3
EDHP	461—Philosophical Foundations of Education	3

Recommended Courses:

SP	294—Critical Thinking (or PHIL 220—Logic in Practice)	4
SP	360—General Semantics	4
PHIL	210—Ethics and Value—Theory	3

Total Program: 24 quarter hours minimum.

Alternative B: Emphasis on Social Foundations of Education

Specific Course Requirements:

EDHP	395—Advanced Philosophy of Education	3
EDHP	461—Philosophical Foundations of Education	3

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EDHP	463—Sociological Foundations of Education	3
EDHP	338—Social and Cultural Differences and Education	3
EDHP	339—Anthropological Foundations of Education	3
SOC	311—Sociological Theory	3

Recommended Courses:

ANT	323—Spanish-American Culture	3
SOC	302—American Society Today	3
SOC	222—The Sociology of Child Development	3
SOC	331—Seminar in Social Communication	3
EDHP	237—Comparative Education	3

Total Program: 24 quarter hours minimum.

Home Economics

Master of Arts Degree

1. Specific Requirements:

A. Core Courses

Course No.	Course Title	Hours Credit
ID	300—Introduction to Graduate Study	3
HEC	308—Directions in Home Economics	1

B. Areas of Emphasis:

Develop areas of emphasis by selecting courses from at least three of the following areas of home economics:

- Foods and Nutrition
- Textiles and Clothing
- Housing and Related Arts
- Family Living and Consumer Education
- Home Economics Education
- Child Development

2. Home Economics Courses in the 300 series from which selections may be made:

Course No.	Course Title	Hours Credit
HEC	342—Principles and Techniques of Cookery	4
HEC	348—Family Meal Management	4
HEC	355—Research in Foods	4
HEC	357—Food Economics	3
HEC	359—Seminar in Nutrition	3
HEC	366—Supervision of Student Teaching in Home Economics	3
HEC	367—Teaching Problems in Home Economics Education	4
HEC	368—Curriculum in Homemaking	3
HEC	369—Evaluation in Homemaking Education	3
HEC	376—Housing and Family Needs	3
HEC	378—Survey of Furniture Design	3
HEC	381—Advanced Textiles	3
HEC	383—Techniques of Textile Research	4
HEC	389—Seminar in Clothing and Textiles	3
HEC	394—Problems in Clothing Construction	3
HEC	395—Advanced Dress Design and Clothing Construction	3
HEC	396—Dress Design and Draping	4
HEC	398—History of Costume	3
HEC	399—Clothing Economics	3

See Course Descriptions section for appropriate courses in other departments and 200 series courses in home economics which may be elected to supplement these courses.

3. Vocational Credential

For students desiring to work for a vocational credential as part of their

graduate study see catalog section on state approved Interdisciplinary Courses in Vocational Education.

4. Thesis Option

A student may elect to write a thesis on recommendation of an advisor. RSM 204—Descriptive Statistics will be required for those students doing a statistical problem.

5. Individual Study

Study under ID 301 or ID 322 may be elected with the consent of a faculty member.

6. Comprehensive Examination

The candidate for the Master of Arts Degree in home economics must pass a written comprehensive examination based upon at least three of the areas of home economics that she has chosen for emphasis in her studies.

Industrial Arts

Master of Arts Degree

1. Each student upon graduation at the master's level is encouraged to have at least one course with a passing grade on his transcript at the graduate or undergraduate level in each of the following areas:
 - A. Crafts
 - B. Drafting
 - C. Electricity-Electronics
 - D. Graphic Arts
 - E. Metalwork
 - F. Power
 - G. Wood

Additional course work in history, philosophy, course organization, and evaluation in industrial arts may be required by the department.

2. Upon notification of acceptance by the Graduate School, the department will assign an adviser when requested by the applicant or when the student arrives on campus and registers for course work. The department will assign advisees to professors in the department who have the same area of interest; that is, a person with a metals interest will be assigned to a metals specialist. The advisee's graduate program will be planned by the major adviser and the student within the guidelines listed under number one above. The program will be tailor-made to fit the needs of the student wherever possible. The student will work out a program of studies with his major adviser and may elect areas of specialization from the following list: Crafts, drafting, electricity-electronics, graphic arts, metal, power, wood.
3. The comprehensive examination will be given during the fourth week of the last quarter in residence if possible. This means the third quarter or at a time when a student has completed or is enrolled in at least 40 hours of course work. Students on a 60 hour program write during their fourth quarter or after they have accumulated or are enrolled in at least 55 hours of course work.
4. No master's level student will be allowed to take the comprehensive examination until he has the consent of his major adviser.
5. The purpose of the comprehensive examination is to verify the attainment of the objectives of course work taken. It is used by the major adviser to make a recommendation to the department that the individual completing the examination is informed as to the purposes, philosophy, history, evaluation, and subject-matter areas within industrial arts.
6. If the response to the comprehensive examination is not thought to be of passing quality, a student will be held for an additional 15 quarter hours of work. Courses should be selected to strengthen weaknesses brought out by the examination.

Specialist in Education Degree

A program is designed by the student and the adviser to meet the special needs of the person concerned.

Doctor of Education Degree

General Program Requirements

1. The doctor's degree is designed to make the candidates: industrial arts program specialists, administrators, and producers or directors of research in industrial arts education. Its main function is to provide competent college teachers for industrial arts. The program will broaden the student's understanding of the purpose, philosophy, curriculum, administration, and general status of industrial education on a national level. In addition, a field of specialization in industrial arts should be developed to make the candidate an effective teacher in the classroom and laboratory.
2. Advisers will be assigned only when the student arrives on campus and registers for work on his doctoral program.
The department will assign advisees to professors in the department who have the same area of interest; that is, metals emphasis to a metals teacher. The advisee's program will be planned by the major adviser and the student. The program will be tailor-made to fit the needs of the student wherever possible.
3. Candidates concentrating in Industrial Arts Education must complete the basic foundational courses which are: EDHP 461, Philosophical Foundations of Education; EDHP 463, Sociological Foundations of Education; PCG 441, Psychological Foundations of Education; together with RSM 204, Descriptive Statistics or equivalent.
4. A candidate will complete 48 or more hours in industrial arts. This does not include credit for his research study. In addition to his area of concentration, a student will be required by the department to take a minimum of 24 quarter hours in one supporting area.
5. When the student completes approximately 50 quarter hours of course work (30 hours in IA beyond the masters and 20 hours in his supporting area beyond the masters), the student will take a written examination over his major field and supporting area. He will then be given an oral examination by his committee. This comprehensive examination which is approximately 12 hours in length will be given during the fourth week of each quarter.
6. In addition to all the general requirements for a doctor's degree the student shall:
 - A. Submit 250 word abstract of the dissertation to the department.
 - B. Submit a black and white 5 x 7 matte finish picture to the department for placing in the gallery of distinguished department graduates.

Specific Course Requirements

1. Build an area of specialization in one of the following areas of industrial arts:
 - Industrial Crafts
 - Drafting
 - Electricity-Electronics
 - Graphic Arts
 - Metals
 - Power
 - Wood
2. Select courses planned in conjunction with the major adviser from the following list:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credit</i>
IA	320—Organization and Administration of Industrial Education.....	3	3
IA	330—Organization and Administration in Industrial Arts	3	3
IA	331—A Critique of Modern Industrial Arts	3	3

GRADUATE DEGREE REQUIREMENTS / 75

IA	333—History of Industrial Arts	4
IA	334—Industrial Occupations	3
IA	335—Philosophy of Industrial Arts	3
IA	336—Critique for General Shop Organization	3
IA	337—Development of Instructional Aids in Industrial Arts	3
IA	338—Curriculum Development in Industrial Arts	3
IA	339—Evaluation in Industrial Arts	3
IA	430—Research in Industrial Arts	9
	Max.	9

Other Areas

EDAD	342—School Administration—Federal, State, Local	3
EDAD	343—School Finance	3
EDAD	344—School Plant Planning	3
EDCI	366—Foundations for Curriculum Development	3
EM	308—Production of Photographic Teaching Materials	3
HIED	391—Higher Education in the United States	3
HIED	393—The Junior and Community College	3
HIED	492—The College Teacher	3
HIPD	494—College Administration	3
PSY	317—Foundations of Guidance	3
RSM	305—Statistical Inference	5
SPED	290—Introduction to Vocational Rehabilitation Counseling	3
SPED	300—Education and Psychology of Exceptional Children	3

3. Complete 24 hours in a supporting area of concentration.

Mathematics

Master of Arts Degree in the Arts and Sciences

Each degree aspirant should complete two quarters of the modern algebra sequence, one of the sequences in either real or complex analysis, and one of the topology courses. In lieu of ID 300 he should complete 3 hours of MATH 310, Seminar in Mathematics. At least 22 hours of the mathematics courses must be open only to graduate students. MATH 280 may not be applied toward this degree.

Minimum program45

Master of Arts Degree in the Teaching Professions

<i>Course No.</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credit</i>
MATH	221—Modern Algebra I	3	3
MATH	222—Modern Algebra II	3	3
MATH	343—Modern Geometry I	5	5
MATH	344—Modern Geometry II	5	5
MED	372—Curriculum in Secondary School Mathematics (Substitute for ID 300)	5	5
MED	373—Problems in the Teaching of Secondary Mathematics	4	4
MED	374—Seminar in Teaching Secondary Mathematics	4	4
	Electives approved by adviser	16	16
	Minimum program		45

At least 24 hours must be taken in courses in mathematics.

Doctor of Education Degree

Mathematics

This program is intended to prepare a person to teach mathematics at the college level. To qualify for admission to the program, a candidate need not have professional teaching experience nor have a mathematics education background.

Minimum program72

Mathematics Requirements:*

Courses numbered 220 or higher (excluding MATH 280). At least 36 hours must be courses open only to graduate students. The core program should include the sequences in algebra, real analysis, and one of topology or complex analysis. Each aspirant should also acquire additional depth in at least one of the four basic areas in the Special Topics courses, MATH 311, 329, 339, or 349.

Dissertation

The students in this program should be encouraged to do research in mathematics, generally expository in nature.

Mathematics Education Major

The program for the Doctor of Education degree in Mathematics Education is designed to prepare a person for the following positions: master secondary school mathematics teacher, K-12 mathematics curriculum supervisor, supervising teacher of mathematics, college teacher of some lower division mathematics courses and of mathematics education courses including methods courses in teaching arithmetic and secondary mathematics.

The students in this degree program must pass a qualifying examination in mathematics. This examination covers the areas of modern algebra, modern geometry, and analysis. It will be administered by the Department of Mathematics. A student may not take the qualifying examination more than twice. The doctoral committee may not be appointed until the qualifying examinations have been passed.

The qualifying examinations must be taken at least one quarter prior to taking the comprehensive examinations. The comprehensive examinations may not be taken before the quarter in which the minimal course work requirements will be completed. A student must satisfactorily complete his comprehensive examinations before he may submit an outline for a dissertation to his committee.

The student will plan his program in consultation with his adviser. The student's career objectives will be taken into consideration when the program is being planned.

Mathematics Education Major, Minimum 48 hours

<i>Course No.</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credit</i>
MED	372—Curriculum in Secondary School Mathematics	5	3
MED	472—Theory and Practice of Teaching Mathematics	3	3
MED	473—Seminar in Mathematics Education	3	3
MED	474—Advanced Seminar in Mathematics Education	3	3
ELED	312—Mathematics in the Elementary School	3	3
ELED	322—Seminar in Elementary School Mathematics	3	3
PCG	340—Theories of Learning	5	3
RSM	305—Statistical Inference	5	3
RSM	403—Analysis of Variance and Covariance	3	3
MATH	251—Introduction to Mathematical Statistics I	4	4
MED	378—Special Topics in Mathematics Education	Min. 3	3
	Electives: may include courses in mathematics education, education, and psychology, and research and statistical methodology, and must be approved by the candidate's major adviser	Min. 8	8

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Supporting Areas, Minimum 16 hours

The student must select at least one supporting area in which he takes a minimum of 16 quarter hours of course work. Supporting areas may be selected from among the following areas: mathematics, research and statistical methodology, secondary curriculum and instruction, higher education, elementary education, educational administration, special education, and psychology, counseling, and guidance. The course work in the supporting area is to be selected with the approval of the student's major adviser and a faculty member in the supporting area. Courses in the supporting area which also occur as major requirements will apply to the supporting area and appropriate changes will be made in the major requirements.

Minimum total course work: 72 hours.

Music

The degree of *Master of Arts* is offered in the following majors:

Applied Music and Performance
 Music Education
 Supervision of Music¹

The degree of *Specialist in Education* is offered. See the Specialist in Education section of the Graduate Academic Information.

The degree of *Doctor of Education* is offered in the following area of concentration:

Music Education

¹Major requires two years of actual teaching experience as a prerequisite.

Applied Music

Credit for all individual music instruction will be entered in the student's registration under the title and course number appearing below:

100 series—Introductory work in the fundamentals of the chosen performance medium—technical studies and repertoire will be selected according to the student's need. FOR FRESHMEN AND SOPHOMORES.

200 series—Continuation of technical studies for further development of performance competency. Repertoire from the standard literature will be selected. Voice majors will begin to draw from Italian, German and French sources in the art song, opera and oratorio. FOR JUNIORS AND SENIORS.

300 series—Music study in performance at this level will assume a technical proficiency sufficient for extensive familiarity with the advanced repertoire, drawing upon all periods and styles of solo performance. FOR GRADUATE STUDENTS.*

*In some cases, the 100 series may be used to indicate a deficiency in applied music at the graduate level.

- 130, 230, 330. INDIVIDUAL PERFORMANCE IN VOICE. *One hour credit.*
- 131, 231, 331. INDIVIDUAL PERFORMANCE IN PIANO. *One hour credit.*
- 132, 232, 332. INDIVIDUAL PERFORMANCE IN ORGAN. *One hour credit.*
- 133, 233, 333. INDIVIDUAL PERFORMANCE IN STRINGS. *One hour credit.*
- 134, 234, 334. INDIVIDUAL PERFORMANCE IN WOODWINDS. *One hour credit.*
- 135, 235, 335. INDIVIDUAL PERFORMANCE IN BRASS. *One hour credit.*
- 136, 236, 336. INDIVIDUAL PERFORMANCE IN PERCUSSION. *One hour credit.*
- 137, 237, 337. INDIVIDUAL INSTRUCTION IN COMPOSITION. *One hour credit.*
- 138, 238, 338. INDIVIDUAL PERFORMANCE IN HARP. *One hour credit.*

Major Ensemble Performance

Credit for all music performance organizations will be entered on the student's registration under the title and course number appearing below:

- 100 series—Freshmen and Sophomores
 200 series—Juniors, Seniors and Graduate Students
 300 series—Graduate Students
- 170, 270, 370. SYMPHONIC WIND BAND. *One hour credit.*
 171, 271, 371. CONCERT BAND. *One hour credit.*
 172, 272, 372. MARCHING BAND. *One hour credit.*
 173, 273, 373. VARSITY BAND. *One hour credit.*
 174, 274, 374. STAGE BAND. *One hour credit.*
 175, 275, 375. SYMPHONY ORCHESTRA. *One hour credit.*
 176, 276, 376. CHAMBER ORCHESTRA. *One hour credit.*
 177, 277, 377. LABORATORY ORCHESTRA. *One hour credit.*
 178, 278, 378. MIXED CONCERT CHOIR. *One hour credit.*
 179, 279, 379. ORATORIO CHORUS. *One hour credit.*
 180, 280, 380. CHORUS AND ORCHESTRA WORKSHOP. *One hour credit.*
 181, 281, 381. WOMEN'S CONCERT CHOIR. *One hour credit.*
 182, 282, 382. VARSITY MEN'S GLEE CLUB. *One hour credit.*
 183, 283, 383. CHAMBER SINGERS. *One hour credit.*
 184, 284, 384. OPERA WORKSHOP. *One-three hours credit.*
 185, 285, 385. STRING ENSEMBLE. *One hour credit.*
 186, 286, 386. BRASS ENSEMBLE. *One hour credit.*
 187, 287, 387. WOODWIND ENSEMBLE. *One hour credit.*
 188, 288, 388. PERCUSSION ENSEMBLE. *One hour credit.*
 189, 289, 389. PIANO ENSEMBLE. *One hour credit.*
 199, 299, 399. CHAMBER BRASS CONSORT. *One hour credit.*

Master of Arts Degree

Qualified graduate students are accepted as candidates for degree Master of Arts in three areas: Music Education, Music Supervision, or Applied Music and Performance.

Advisory tests in music theory, history, literature and music education are administered prior to the first week of graduate study. The course of study for each student is arranged according to his individual needs and desires with the exception of the required courses listed below. If a student scores above a minimum standard determined by the faculty in any one of the area tests of the Advisory Exam, the required course in that particular area may be waived and the student may elect another course with the consent of the adviser. Although considerable latitude is granted the student and his major adviser in designing the course program, it is assumed that competency will include courses in music history, theory, literature, and music education. A comprehensive examination relating to the above areas is administered to candidates during their last quarter in residence (in place of the examination in music education, those students in the Applied Music program will be examined in the pedagogical area of their specialization).

Music Education

Required Courses:

Course No.	Course Title	Hours	Credit
MUS	—Music Performance		6
	(Maximum of 6 hours credit applicable to the degree program— 3 in applied, 3 in major organization)		
MUS	308—Seminar in Music Education		3
MUS	309—Symphonic Literature		3
MUS	352—Eighteenth Century Harmony and Forms		3
MUS	358—Music History I		3
MUS	359—Music History II		3

Additional electives to satisfy degree requirements.

Supervision of Music

Required Courses:

Course No.	Course Title	Hours	Credit
MUS	—Music Performance		6
	(Maximum of 6 hours credit applicable to the degree program— 3 in applied, 3 in major ensemble performance).		
MUS	302—Seminar in Music Education		3
MUS	309—Symphonic Literature		3
MUS	352—Eighteenth Century Harmony and Forms		3
MUS	358—Music History I		3
MUS	359—Music History II		3
	Additional electives to satisfy degree requirements.		

Applied Music and Performance

1. Admission requirements include advisory examinations in several fields and a qualifying examination in performance. Prior to registration a tape of solo performance must be submitted to the Dean of the Music School for distribution and evaluation by the faculty in the performance area. The qualifying examination is to be scheduled and held during the week of registration of the first quarter in residence in this degree program and will be presented for the faculty of the applied music area in which the student performs.

2. No graduate student may register for further courses for graduate credit in music after one quarter of study in residence until he has completed both the qualifying and advisory examinations.

3. On the basis of the qualifying examination and conferences with the faculty jury, the student will be rejected or accepted with or without conditions as a candidate for the Master of Arts degree in Applied Music and Performance.

4. Should the faculty deem it necessary, conditions may be stipulated for remedial work carrying no graduate credit. This may take the form of additional undergraduate hours of applied music, repertoire or diction courses, or formal language courses offered by the Department of Foreign Languages.

5. Of the minimum forty-five hours required for the degree, thirteen must be in the area of performance; six hours of which shall be in individual instruction.

6. A recorded, public recital and correlative paper will constitute four quarter hours of the applied major.

7. One quarter prior to the scheduled recital date a portion or all of the proposed program will be performed at a recital hearing before a committee composed of faculty members in the performing area of the student, as well as members from other departments within the School of Music. This hearing will be judged by ballot.

8. Should the recital hearing not be accepted, the candidate may be allowed one other hearing after further prescribed study. The minimum length of additional study will be determined by the committee. At the completion of the prescribed additional study, it will be the student's responsibility to request the second hearing.

9. The Composite grade evaluation of the student's graduate recital and correlative paper shall be determined by a faculty committee called by the chairman of that committee.

10. Candidates must meet undergraduate requirements for the Bachelor of Music degree. Courses taken to meet deficiencies are not applicable towards the Master of Arts degree.

Note: Vocal candidates will be expected to perform one or more art songs, oratorio or operatic arias in Italian, German, French and English for the qualifying examination. This examination will be heard by the voice faculty. At the time of the examination, the student shall present a complete list of repertoire studied prior to application for admission.

Candidates for the degree may be accepted in the areas of voice, keyboard, band and orchestral instruments.

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Required Courses:

Course No.	Course Title	Hours	Credit
MUS	-Applied Music		6
MUS	-Major Performing Organizations		3
ID	301-Practicum (recital and paper)		3
	or		
ID	322-Individual Studies (recital and paper)		4
MUS	309-Symphonic Literature		3
MUS	352-Eighteenth Century Harmony and Forms		3
MUS	358-Music History I		3
MUS	359-Music History II		3

Additional electives to satisfy degree requirements.

Specialist in Education Degree

A program is designed by the student and the adviser to meet the special needs of the person concerned.

Doctor of Education Degree

Purpose:

To offer a program of graduate study in all substantive areas of music with special concentration in the preparation for professional music personnel in education.

Planning the Course:

Considerable latitude will be granted the student and his major professor in designing the study and course program. It is assumed that competency for the doctorate in music education will include background in: 1) Foundation of the Arts in Education and Society; 2) Musicianship (theory and performance); 3) Music History, Literature and Styles and 4) Improvement of Instruction in Music (Methods, curriculum, supervision and administration).

Requirements:

1. Prior to admission, or during the first quarter on campus, the candidate will write a brief paper for his major professor in which he states his views on:
 - a. Current issues and needs in contemporary education as related to the arts.
 - b. What he would teach in a course in basic music for first-year college music majors.
 - c. Ways for strengthening the program in the arts as a part of the school curriculum, and the community.
2. In addition to the admission requirements of the Graduate School, the applicant is required to take the Graduate Record Examination Advanced Test in Music.
3. Two interviews will be scheduled during the first quarter of study. One interview will be with a committee of the graduate faculty representing the Graduate School. The second interview will be with a committee of the doctoral faculty representing the School of Music.
4. Performance auditions in one or more areas will be held for each doctoral student by the major adviser and a committee representative of all areas for the purpose of evaluating strengths and for making recommendations for continued study in applied music and participation in musical organizations.

Course Program:

1. A minimum of ninety (90) quarter hours are to be earned in graduate study beyond the master's degree and are distributed as follows:
 - a. Forty-eight (48) hours in graduate course credit in music.
 - b. Twenty-four (24) hours in graduate course credit in a related or supporting area.
 - c. Eighteen (18) hours in dissertation credit.

2. Required "foundational" courses are:

EDHP 461—Philosophical Foundations of Education

EDHP 463—Sociological Foundations of Education

PCG 441—Psychological Foundations of Education

3. During the first quarter enrolled in the program it is recommended that the student enroll in the courses listed below. Evidence of work done in the courses is intended to serve as a part of the appraisal of the student for continuation in the program:

a. MUS 420—Criteria for Music Analysis and Comparison

or

MUS 360—Historical Analysis of Music Structure

b. MUS 402—Foundations of Music Education

or

MUS 308—Seminar in Music Education

c. Applied Music and Performance

4. The candidate will, during his first quarter, elect one course in his area of special interest. If available, this course shall preferably be taught by his major professor. Special interest areas include:

a. Choral and Vocal Teaching and Conducting

b. Instrumental Teaching and Conducting

c. Theory, Composition and Analysis

d. History, Literature, and Styles

e. Music in Education

5. In addition to the major the student will reinforce his program with courses outside the major totalling twenty-four quarter hours. Such courses must:

a. Be authorized for doctoral credit by the school or department in which the course is offered;

b. Carry a prefix other than "music."

With the three required "foundations" courses totalling nine (9) quarter hours, an additional fifteen (15) hours of course credit will be elected to complete the supporting or related areas requirement.

Although a program of heterogeneous courses will satisfy the requirement the Music School doctoral faculty recommends that some degree of concentration be reflected in the program as planned by the student and his major professor (for examples of related areas programs see the Guide to the Doctoral Program in Music Education available at the School of Music and the Graduate School offices).

Physical Science

Master of Arts Degree in the Teaching Professions

Prerequisites:

1. Chemistry—a student must have completed the prerequisite courses for Physical Chemistry I.

2. Physics—a student must have completed the prerequisite courses for PHYS 261, 262, 268.

3. College Mathematics—two years (through integral calculus).

4. If these requirements are not fulfilled, a student may be admitted on a provisional basis. The deficiencies are to be removed as soon as possible, but graduate credit will not be allowed.

Requirements:

1. A minimum of 45 quarter hours of course work distributed between chemistry, physics, and professional courses.

Required Courses:

PHYS	261—Introduction to Research in Physics	2
CHEM	285—Chemical Literature	1
CHEM	346—Seminar in Chemistry	3
SCED	372—Science Curriculum in the Secondary School	3
SCED	373—Research in Science Education	3

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SCED	380—Problems in Teaching Physics	4	
	<i>or</i>		
SCED	382—Problems in Teaching Chemistry	4	4
PHYS	265—Mechanics II		3
PHYS	266—Electricity and Magnetism II		3
PHYS	268—Atomic Physics		5
CHEM	281—Physical Chemistry I	5	
CHEM	282—Physical Chemistry II	5	
CHEM	283—Physical Chemistry III	5	
	<i>or</i>		
CHEM	340—Principles of Physical Chemistry I	6	
CHEM	341—Principles of Physical Chemistry II	6	12-15
	Electives selected from physics, chemistry, or professional courses with approval of adviser to complete program to 45 hours.		

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Pass a written and oral comprehensive examination covering the subject matter in the graduate program and any other material which may seem pertinent in the opinion of the committee.

Physics

Master of Arts Degree in the Arts and Sciences

1. PHYS 361, Graduate Research in Physics (Substitute for ID 300).
2. Successfully complete a minimum of 45 hours in courses numbered 200 or above in physics and related fields. The candidate will select his graduate courses with the aid of his adviser.
3. Register for 10 quarter hours in ID 399. The candidate will submit an acceptable thesis in research work.
4. Pass a written and oral comprehensive examination in the candidate's graduate program.

Master of Arts Degree in the Teaching Professions

1. Required courses:

PHYS	261—Introduction to Research in Physics (Substitute for ID 300)
PHYS	265—Mechanics II
PHYS	266—Electricity and Magnetism II
PHYS	267—Optics II
PHYS	268—Atomic Physics
SCED	372—Science Curriculum in the Secondary School
SCED	373—Research in Science Education

2. Remaining hours in degree requirement will be taken in courses in physics and related fields with the consent of the adviser.

3. Candidate must pass a written comprehensive examination in physics based on the candidate's graduate courses.

Doctor of Education Degree

Physics (Teaching)

1. PHYS 361, Graduate Research in Physics (Substitute for ID 400).
2. Successfully complete a minimum of 72 hours in courses numbered 200 or above in physics and related fields and 18 hours of ID 423. The candidate will select his graduate courses with the approval of his adviser.

Political Science

Master of Arts Degree

A concentration in Political Science is offered within the major in Social Science. See Social Science, page 92.

Psychology, Counseling and Guidance

Degree programs offered in Psychology, Counseling and Guidance are as follows: (1) A Master of Arts Degree in Psychology or a Master of Arts Degree in Counseling and Guidance where elective and required courses are selected and program adaptations are made to fit the level of counseling on which the student plans to work, such as pre-school, elementary, junior or senior high, and junior or four year college or university levels; (2) a Specialist in Education Degree with specialties planned to meet the needs of individual students and with more specifically prescribed programs of courses and experiences in such areas as School Psychology, School Counseling, and Psychometry; (3) a Doctor of Education Degree in Psychology, Counseling and Guidance with individual programs planned to meet the needs of each doctoral candidate and providing advanced preparation in the areas of: Counselor Education (for pre-school through university and adult levels); School Psychology; Administration of Personnel and Guidance Services; and Learning and Instruction in Higher Education.

Specialization in school psychology can be obtained at both the specialist and doctoral levels. The basic core requirements for certification as a school psychologist are offered only during the regular academic year.

Two years of actual teaching or equivalent experience is a prerequisite to graduation for all the graduate degree programs in Psychology, Counseling and Guidance; one year is a prerequisite to admittance into the program. Upon petition to the Department of Psychology, Counseling and Guidance, however, other experience might be considered acceptable.

Students in the non-counseling program or those not wishing to engage in counseling should indicate this preference when entering the program. At graduation their transcripts of credit will be stamped as a non-counseling program.

To meet the specific certification requirements of a particular state, a candidate might be required to take specialized courses in addition to those generally required for the program.

All areas of concentration must be planned with the student's adviser. Copies of programs required for each degree may be obtained from the adviser or from the Psychology, Counseling and Guidance office.

Candidates for the Master of Arts Degree, the Specialist in Education Degree and the Doctor of Education Degree are required to demonstrate basic proficiency in the following six areas: (1) Counseling and Guidance; (2) General Psychology; (3) Growth and Development; (4) Educational Psychology and Learning; (5) Measurement, Evaluation, and Research; and (6) Personal, Emotional, and Social Adjustment. In addition, courses, individual studies, practicums, and internships designed to meet specific degree or certification requirements must be met.

Courses offered in each of the six areas listed above are as follows:

COUNSELING AND GUIDANCE (last two digits of PSY and PCG course numbers range from 00 through 19): **101**, Principles and Philosophies of Guidance; **200** Great Ideas Seminar; **307**, Guidance in the Elementary School; **308**, Guidance Institute; **309**, Guidance Workshop; **311**, Organization and Administration of Guidance Services; **313**, Occupational Information and Analysis in Vocational Guidance; **314**, Techniques in Group Guidance; **315**, Counseling Theories; **316**, Clinical Methods in Psychology; **317**, Foundations of Guidance; **318**, Occupational Information for Guidance in Elementary Schools; **310** or **410**, Supervised Practice in Guidance Services; **301** or **411**, Introductory Supervised Practice in Counseling; **412**, Analysis of the Individual; **303** or **413**, Supervised Practice in Counseling with children; **304** or **414**, Supervised Practice in Counseling with Youth; **305** or **415**, Supervised Practice in Counseling with Adults; **306** or **416**, Play Therapy.

GENERAL PSYCHOLOGY (last two digits of PSY and PCG course numbers range from 20 through 29); **20**, General Psychology; **21**, General Psychology and Human Performance; **22**, Exploration Seminar in Psychology I; **122**, Exploration Seminar in Psychology II; **175**, Introduction to Experimentation in Psychology; **220**, General Psychology and the Principles of Behavior; **222**, Seminar: Psychological Issues; **224**, Psychology: Field experience; **324**, Theories of Motivation; **325**, Human Neuropsychology; **420**, Development and Philosophy of Ideas in Psychology; **421**, Trends in Psychology, Counseling and Guidance; **422**, Seminar: Issues in Psychology, Counseling and Guidance.

GROWTH AND DEVELOPMENT (last two digits of PSY and PCG course numbers range from 30 through 39); **30**, Human Growth and Development; **230**, Child and Adolescent Psychology; **331**, Child Psychology; **332**, Psychology of Adolescence; **333**, Psychology of College Students and Other Adults; **334**, Psychology of Individual Differences.

EDUCATIONAL PSYCHOLOGY AND LEARNING (last two digits of PSY and PCG course numbers range from 40 thru 49); **140**, Educational Psychology; **142**, Teaching Learning Process; **240**, Psychology of Perception and Learning; **340**, Theories of Learning; **347**, Learning Disabilities: Diagnosis and Remediation; **441**, Psychological Foundations of Education; **443**, Internship in Supervision of Counseling; **444**, Internship in Supervision of Guidance Services; **445**, Internship in Supervision of Psychological Testing.

MEASUREMENT, EVALUATION AND RESEARCH (last two digits of PSY and PCG course numbers range from 70 through 79); **170**, Introduction to Measurement and Evaluation; **275**, Experimentation in Psychology; **370**, Principles and Practices in Testing and Measurement; **371**, Aptitude and Achievement Analysis; **372**, Aptitude and Achievement Analysis, K-6; **373**, Individual Tests of Intelligence; **374**, Supervised Practice in the Use of Individual Tests of Intelligence I; **375**, Supervised Practice in the Use of Individual Tests of Intelligence II; **376**, Supervised Practice in the Use of Individual Tests of Intelligence III; **377**, Use of Psychodiagnostic Testing Instruments with Children; **470**, Measurement: Prediction and Assessment; **471**, Measurement: Scaling and Related Techniques.

PERSONAL, EMOTIONAL AND SOCIAL ADJUSTMENT (last two digits of PSY and PCG course numbers range from 80 through 99); **84**, Group Processes and Human Relations; **184**, Industrial Psychology; **280**, Psychology of the Healthy Personality; **285**, Mental Hygiene and Emotional Adjustment; **288**, Abnormal Psychology; **293**, Sociodrama; **294**, Sociometry; **326**, Seminar in Perceptual Psychology; **380**, Theories of Personality; **381**, Survey of Projective Techniques; **382**, Introduction to Rorschach Administration and Scoring; **383**, Projective Techniques; **384**, Group Dynamics in Human Relations; **387**, Seminar in School Psychology; **389**, Advanced Psychopathology; **390**, Internship in School Psychology.

Master of Arts Degree

Psychology, Counseling and Guidance: Secondary and Junior College Counselors

The following courses or their equivalents are required:

Course No.	Course Title	Hours	Credit
ID	300—Introduction to Graduate Study	3	
PSY	220—General Psychology and the Principles of Behavior	3	
PSY	230—Child and Adolescent Psychology	3	
PSY	240—Psychology of Perception and Learning	5	
	or		
PCG	340—Theories of Learning	5	
PSY	280—Psychology of the Health Personality	3	
PSY	285—Mental Hygiene and Emotional Adjustment	3	
*PCG	311—Organization and Administration of Guidance Services (Recommended Prerequisite, PCG 315)	3	

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*PCG	313—Occupational Information and Analysis in Vocational Guidance (Secondary-Adult)	3
*PCG	314—Techniques in Group Guidance	3
*PCG	315—Counseling Theory and Techniques (Recommended Prerequisites, PCG 240 or 340; PCG 280 or 380)	3
*PCG	317—Foundations of Guidance	3
PCG	326—Seminar in Perceptual Psychology	3
PCG	370—Principles and Practices in Testing and Measurement	3
*PCG	371—Aptitude and Achievement Analysis (Recommended Prerequisite, PCG 370)	5
*PCG	310—Supervised Practice in Guidance Services (Concurrent with PCG 304)....	3
*PCG	301—Introductory Supervised Practice in Counseling (Prerequisites, PSY 280; PCG 313; 315; 371)	3
*PCG	304—Supervised Practice in Counseling with Youth (Prerequisite, PCG 301)	3
	<i>or</i>	
*PCG	305—Supervised Practice in Counseling with Adults (Prerequisite, PCG 301)	3
RSM	204—Descriptive Statistics	4

Other courses must be elected from each of the areas listed for the Psychology, Counseling and Guidance Department.

Students preparing for counseling and for counselor certification must complete the starred courses prior to graduation.

A minimum of forty-five quarter hours of credit are required for the master's degree. Students preparing to become counselors may need more than forty-five quarter hours of work to meet certification standards and/or to reach levels of proficiency needed to be cleared for counseling by the department and to be recommended for counseling positions. When this occurs, the student may petition to have the excess appropriate courses which were taken applied to the specialist or doctoral degrees in counseling provided that application is made prior to the quarter of graduation with the Master of Arts Degree and provided that at the same time he applies for admission to the specialist or doctoral program and is admitted.

Psychology, Counseling and Guidance: Elementary

School Counselors

The following courses or their equivalents are required:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
PCG	307—Guidance in the Elementary School	3
PSY	220—General Psychology and the Principles of Behavior	3
PSY	230—Child and Adolescent Psychology	3
PSY	280—Psychology of the Healthy Personality	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
*PCG	311—Organization and Administration of Guidance Services (Recommended Prerequisite, PCG 315).....	3
*PCG	314—Techniques in Group Guidance	3
*PCG	315—Counseling Theories (Recommended Prerequisites PSY 240 or PCG 340; PSY 280 or PCG 380)	3
*PCG	318—Occupational Information for Guidance in Elementary Schools.....	3
PCG	326—Seminar in Perceptual Psychology	3
PCG	340—Theories of Learning	5
PCG	370—Principles and Practices in Testing and Measurement	3
*PCG	372—Aptitude and Achievement Analysis, K-6 (Recommended Prerequisite, PCG 370)	5
*PCG	301—Introductory Supervised Practice in Counseling (Prerequisites, PSY 201, 280; PCG 307; 315; 318; 372)	3 or 6
*PCG	303—Supervised Practice in Counseling with Children (Recommended Prerequisite, PCG 301)	3
PCG	306—Play Therapy	3
RSM	204—Descriptive Statistics	4

Other courses must be elected from each of the areas listed for the Psychology, Counseling and Guidance Department.

Students preparing for counseling and for counselor certification must complete the starred courses prior to graduation.

A minimum of forty-five quarter hours credit are required for the master's degree. Students preparing to become counselors may need more than forty-five quarter hours of work to meet certification standards and/or to reach levels of proficiency needed to be cleared for counseling by the department and to be recommended for counseling positions. When this occurs, the student may petition to have the excess appropriate courses which were taken applied to the specialist or doctoral degrees in counseling provided that application is made prior to the quarter of graduation with the Master of Arts Degree and provided that at the same time he applies for admission to the specialist or doctoral program and is admitted.

Specialist in Education Degree

Psychology, Counseling and Guidance: School Counseling for Pre-School Through University and Adults

Upon entrance, a candidate must be able to satisfy degree requirements for the Master of Arts Degree in Psychology, Counseling and Guidance, or its equivalent, or must take additional courses to meet these requirements.

Specific Course Requirements:

Course No.	Course Title	Hours Credit
ID	400—Introduction to Doctoral Research	3
ID	401—Specialist Degree Practicum	Max. 8
PSY	288—Abnormal Psychology	3
PCG	331—Child Psychology	3
PCG	332—Psychology of Adolescence	3
PCG	334—Psychology of Individual Differences	3
PCG	384—Group Dynamics in Human Relations	3
PCG	411—Introductory Supervised Practice in Counseling (Recommended Prerequisites, PSY 280; PCG 313; 315; 371)	3 or 6
PCG	412—Analysis of the Individual	3
PCG	413 or 303—Supervised Practice in Counseling with Children (Recommended Prerequisite, PCG 301 or 411)	3
	or	
PCG	414 or 304—Supervised Practice in Counseling with Youth (Recommended Prerequisite, PCG 301 or 411)	3
	or	
PCG	415 or 305—Supervised Practice in Counseling with Adults (Recommended Prerequisite, PCG 301 or 411)	3
RSM	305—Statistical Inference	5
SPED	300—Education and Psychology of Exceptional Children	3

Highly Recommended Courses:

PSY	275—Experimentation in Psychology	3
PCG	373—Individual Tests of Intelligence	4
PCG	374—Supervised Practice in the Use of Individual Tests of Intelligence I (Prerequisite, PCG 373)	6
	or	
PCG	375—Supervised Practice in the Use of Individual Tests of Intelligence II (Prerequisite, PCG 373)	5
	or	
PCG	376—Supervised Practice in the Use of Individual Tests of Intelligence III (Prerequisite, PCG 373)	5

Total Program: A minimum of forty-five quarter hours beyond the Master of Arts Degree in Psychology, Counseling and Guidance.

Psychology, Counseling and Guidance: School Psychology

Upon entrance, a candidate must be able to satisfy degree requirements for

the Master of Arts Degree in Psychology, Counseling and Guidance, or its equivalent, or must take additional courses to meet these requirements.

Specific Course Requirements (including those taken for the Master of Arts Degree in Psychology, Counseling and Guidance):

A. Psychological Foundation

<i>Course No.</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credit</i>
*ID	400—Introduction to Doctoral Research		3
*PSY	280—Psychology of the Healthy Personality		3
*PCG	331—Child Psychology		3
	<i>or</i>		
*PSY	230—Child and Adolescent Psychology		3
*PCG	340—Theories of Learning		5
PCG	373—Individual Tests of Intelligence		4
*PSY	288—Abnormal Psychology		3

One of the following:

*PSY	220—General Psychology and the Principles of Behavior	3
*PSY	285—Mental Hygiene and Emotional Adjustment	3
*PCG	370—Principles and Practices in Testing and Measurement	3

B. Psychological Methods and Techniques

*PCG	315—Counseling Theories	3
*PCG	371—Aptitude and Achievement Analysis	5
	<i>or</i>	
PCG	372—Aptitude and Achievement Analysis, K-6.....	5
PCG	374—Supervised Practice in the Use of Individual Tests of Intelligence I.....	6
	<i>or</i>	
PCG	375—Supervised Practice in the Use of Individual Tests of Intelligence II.....	5
PCG	382—Introduction to Rorschach Administration and Scoring	3
PCG	383—Projective Techniques	3
*PCG 411 or 301	—Introductory Supervised Practice in Counseling	3 or 6

A minimum of one of the following Supervised Practice courses is required above the Master of Arts practicum requirement:

PCG 416 or 306	—Play Therapy	3
RSM	204—Descriptive Statistics	4

C. Professional Education

EDHP	295—Philosophy of Education	3
	<i>or</i>	
EDHP	395—Philosophy of Education	3
	<i>or</i>	
EDHP	461—Philosophical Foundations of Education	3
ELED	324—Remedial Reading in the Elementary School	4
PCG	347—Learning Disabilities: Diagnosis and Remediation	3
SPED	300—Education and Psychology of Exceptional Children	3

D. Electives—choose from such courses as these (10 hrs.):

SPED	210—Introduction to Mental Retardation.....	4
SPED	302—Appraisal of Exceptional Children	4
SPED	303—Practicum in Appraising Exceptional Children.....	3
SPED	411—Medical and Psychological Aspects of Mental Retardation.....	4

E. Supervised Field Work

PCG	390—Internship in School Psychology	Max. 16
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The (*) starred courses are required for the Master of Arts program in Psychology, Counseling and Guidance.

Total Program: A minimum of forty-five quarter hours beyond the Master of Arts Degree in Psychology, Counseling and Guidance.

Doctor of Education Degree

Psychology, Counseling and Guidance

Specific Course Requirements: Usually doctoral students in the area of Psychology, Counseling and Guidance are expected to complete the suggested courses listed below in addition to having completed the courses (or their equivalents) required for the Master of Arts Degree in the area or must take additional courses to meet these requirements. Deviations from this pattern of courses will be made to meet the requirements of any individual specialty within the general area as listed in the description of the doctoral program in Psychology, Counseling and Guidance.

Course No.	Course Title	Hours	Credit
ID	400—Introduction to Doctoral Research		3
ID	423—Doctoral Dissertation		Max. 18
PSY	288—Abnormal Psychology		3
PCG	331—Child Psychology		3
	<i>and/or</i>		
PCG	332—Psychology of Adolescence		3
PCG	334—Psychology of Individual Differences		3
PCG	340—Theories of Learning		5
PCG	384—Group Dynamics in Human Relations		3
PCG	410 or 310—Supervised Practice in Guidance Services		3
PCG	411 or 301—Introductory Supervised Practice in Counseling (Recommended Prerequisites, PSY 280; PCG 313; 315; 371)		3 or 6
PCG	412—Analysis of the Individual		3
PCG	414 or 304—Supervised Practice in Counseling with Youth (Recommended Prerequisite, PCG 301 or 411)		3
	<i>or</i>		
PCG	415 or 305—Supervised Practice in Counseling with Adults (Prerequisite, PCG 301, 411)		3
PCG	422—Seminar: Issues in Psychology, Counseling and Guidance		3
RSM	305—Statistical Inference		5
RSM	403—Analysis of Variance and Covariance		3

Highly Recommended Courses:

PCG	324—Theories of Motivation		3
PCG	420—Development and Philosophy of Ideas in Psychology		5
PCG	421—Trends in Psychology, Counseling and Guidance		3
PCG	443—Internship in Supervision of Counseling		Max. 12
PCG	444—Internship in Supervision of Guidance Services		Max. 12
ID	451—Supervised Practicum in College Teaching		Max. 9
ID	452—Internship in Supervising College Teaching		3

Each candidate's program of courses, supervised practice, individual studies, and outside readings will be specifically designed to meet his individual needs, to help him develop essential competencies, and to prepare him for the particular types of positions he plans to take upon graduation. The courses thus selected are as essential to a particular candidate's program as the general requirements listed above.

Research and Statistical Methodology

Doctor of Philosophy Degree

Some credit may be transferred from accredited institutions. In general, a minimum of two years residence is necessary. The Ph.D. program requires proficiency in two research tools, one of which is computer science language.

Objectives: The degree is planned to prepare persons for performing or directing educational research in colleges, universities, school administrative units, and educational and research laboratories. Special emphasis is placed upon computer-orientation and information processing relative to educational problems.

Research methodology will emphasize the application of multivariate techniques to educational problems. Topics and applications are: factor analysis, multiple regression models for complex analysis of variance, discriminant function, Markov chains, and curvilinearity of data.

General degree requirements: A minimum of 90 quarter hours of graduate credit beyond the master's degree. These hours will be distributed among the following areas:

- Statistics, information processing, and computer applications to educational problems.
- Theory and practices of measurement, psychology, and research methodology.
- Research practicum and internship experiences.
- Dissertation.
- Supporting area (24 hours required).
- Non-credit internships

Required Courses:

		<i>Credit Hours</i>
RSM	304—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	313—Planning and Methodology of Research	3
RSM	403—Analysis of Variance and Covariance	3
RSM	413—Multiple Regression	3
RSM	423—Nonparametric Statistics	3
RSM	433—Factor Analysis	3
RSM	444—Research Practicum	12
RSM	454—Research Practicum	12
PCG	470—Measurement: Prediction and Assessment	3
PCG	471—Measurement: Scaling and Related Techniques	3

Recommended Electives:

MATH	251—Introduction to Mathematical Statistics I	4
MATH	252—Introduction to Mathematical Statistics II	4
MATH	253—Introduction to Mathematical Statistics III	4
MATH	255—Probability Theory	4
MATH	256—An Introduction to Stochastic Processes	4
PCG	340—Theories of Learning	5
PCG	370—Principles and Practices in Tests and Measurements	3
PCG	371—Aptitude and Achievement Analysis	5
PCG	373—Individual Tests of Intelligence	3
PCG	380—Theories of Personality	3
SP	294—Critical Thinking	4
SP	360—General Semantics	4
ED	395—Philosophy of Education	3
ECON	310—Econometrics	5
HIST	399—Historiography	3
SCI	379—Philosophy of Science	3
SOC	371—Advanced Social Research	4
PHIL	220—Logic in Practice	3
BUS	288—Systems and Procedures	3
BUS	289—Advanced Systems	3
BUS	290—Intermediate Operations Research	3
BUS	390—Operations Analysis	3

Supporting Areas:

- Business Education
- College Student Personnel Work
- Educational Media
- Elementary Education
- Health, Physical Education and Recreation
- Higher Education
- History and Philosophy of Education
- Industrial Arts Education
- Mathematics
- Mathematics Education
- Music Education

Psychology, Counseling and Guidance
 Reading
 Science
 Science Education
 Social Science

Science Education

Master of Arts Degree in the Teaching Professions

General Requirements: Minimum 3 quarter hours

SCED	373—Research in Science Education	3
	(Substitutes for ID 300)	

Major Requirements: Minimum 16 quarter hours

SCED	371—Science Curriculum in the Elementary School (May be waived for secondary majors by petition to Science Education Department).....	3
SCED	372—Science Curriculum in the Secondary School	3
SCED	374—Instructional Problems in Teaching Science	3
SCED	376—Construction of Achievement Tests in Science	3
SCED	378—Science Education Seminar (minimum 2 hours, maximum 6 hours).....	2-6
RSM	204—Descriptive Statistics	4

Recommended Electives: Minimum 3 quarter hours

SCED	278—Instructional Materials in the Teaching of Science	4
SCED	375—Development of Scientific Inquiry Abilities of Children Through Science	4
SCED	379—Science Curriculum in the Junior High School	3
SCED	380—Problems in Teaching Physics	4
SCED	381—Problems in Teaching Biology	4
SCED	382—Problems in Teaching Chemistry	4
SCI	376—History of Science	3
SCI	379—Philosophy of Science	3
RSM	305—Statistical Inference	5
ID	301—Practicum (maximum 8 hours)	
	or	
ID	322—Individual Studies (maximum 8 hours).....	4-8

Supporting Area Requirements: Minimum 23 quarter hours

One of the following subject matter areas: Biology, Botany, Chemistry, Earth Sciences, Physics (5 hours of mathematics may be included), Physical Science, Zoology.

A major in science education assumes that the student is preparing for a position of science supervisor in an elementary school, junior high school, or senior high school, is increasing his competence for secondary instruction, or is preparing for junior college teaching. He must know sufficient science to be able to direct intelligently a program and help the teachers. His training therefore must be sufficient to make possible intelligent supervision and curriculum planning.

A minimum of 23 quarter hours of the master's degree work in a science education degree must be in science subject matter and be in courses acceptable for and applicable to the master's degree. The choice of the subject matter field is to be made by the candidate with approval of the major adviser. Specific courses will be prescribed by the subject matter department. Grades of B or better in these courses will satisfy the subject matter requirement.

A comprehensive examination will be written in the major area, science education.

It shall be the prerogative of the adviser to invite certain candidates to write a thesis or do practicums in partial fulfillment of the requirements for the degree.

Students working for advanced degrees are expected to plan a personal, well-balanced reading and study program and are expected to be acquainted with major research in their field.

Doctor of Education Degree

The Ed.D. degree program at Colorado State College is designed to prepare specialists in science education for a variety of positions. Among these are:

1. Science education professors in colleges and universities preparing science teachers;
2. Science teacher training with some responsibilities for teaching science;
3. Heads of science departments or supervisors of science in large secondary schools and junior colleges;
4. Supervisors of elementary and/or secondary science in state, county, and city school systems;
5. Superior science teachers in junior high schools, senior high schools, and junior colleges.

The graduate student in science education at Colorado State College may enroll in either of two plans leading to the Ed.D. degree. Plan I prepares individuals primarily for college science education positions, science supervision, and/or methods teaching in science. This plan balances the work between subject matter and professional science education. Plan II prepares individuals for college positions in science education with some science teaching responsibilities.

The requirements for both plans involve a core of required courses plus a group requirement allowing for flexibility through elective courses in professional science education.

A *minimum* of 135 hours beyond the bachelor's degree or 90 hours beyond the master's degree including 18 hours credit for a dissertation is required of all doctoral students in science education.

A committee of the faculty is selected to supervise the work of all doctoral students at the level of the dissertation. The student's major adviser administers the major and supporting area comprehensive examinations, both oral and written, determines the course patterns to be followed, and supervises the writing of the dissertation. An oral defense of the dissertation is required.

Candidates for advanced degrees should plan a well-balanced, continuous reading and study program. They should also be members of professional and learned societies. Various appropriate subject matter and professional journals should be read to keep abreast of current developments in the major and supporting fields.

Core Courses: 13 quarter hours

All science education majors or individuals taking a supporting area in science education must take the following courses:

SCED	373—Research in Science Education (Subject area departmental equivalent for Plan II majors).....	3
SCED	374—Instructional Problems in Teaching Science.....	3
SCED	477—Evaluation and Testing in Science	3
RSM	204—Descriptive Statistics	4

Group Requirements:

Minimum of 19 hours for Plan I majors

Minimum of 6 hours for Plan II majors

Required Courses

Plan I majors must take the following courses.

Plan II majors must take one of the following courses.

SCED	378—Science Education Seminar (minimum 2 hours, maximum 6 hours).....	2-6
SCED	371—Science Curriculum in the Elementary School.....	3
SCED	372—Science Curriculum in the Secondary School.....	3
SCED	379—Science Curriculum in the Junior High School.....	3

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Optional Courses

Additional courses may be selected from the following:

SCED	278—Instructional Materials in Teaching Science	4
SCED	375—Development of Scientific Inquiry Abilities of Children Through Science ..	4
SCED	376—Construction of Achievement Tests in Science	3
SCI	376—History of Science	3
SCI	379—Philosophy of Science	3
PSY	240—Psychology of Learning	3
PCG	340—Theories of Learning	5
RSM	305—Statistical Inference	5

Level of Instruction Courses

Depending on interest and professional goals, candidates under Plan I must take two or more of the following courses:

SCED	380—Problems in Teaching Physics	4
SCED	381—Problems in Teaching Biology	4
SCED	382—Problems in Teaching Chemistry	4
ID	301—Practicum (in science or science education) (maximum 8 hours).....	4
ID	322—Individual Studies (maximum 8 hours)	4

Supporting Area Requirements

Candidates for the Ed.D. in science education may choose between:

Plan I — a supporting area in one field (biology, chemistry, physics, earth science, statistics, or general science—8 hours biology, 8 hours physical, 8 hours earth science) with a minimum of 24 quarter hours in graduate level courses in science plus six or more hours of electives in any advanced science (300 level). In this plan, a minimum of 42 quarter hours must be in science education.

Research must be done in the field of science education.

Plan II — a concentration in one field (botany, zoology, chemistry, physics, statistics, or earth science) with a minimum of 36 quarter hours of graduate level courses in the science plus 12 hours or more of electives in any advanced science (300 level). In this plan, a minimum of 24 hours must be in science education. Research must be done in the field of science education.

Under either plan, a minimum of 90 quarter hours of science subject matter beyond the bachelor's degree, of which 30 quarter hours are in advanced or graduate level science courses must be completed for this degree. If required courses have unsatisfied prerequisites or are outdated, these deficiencies must be removed.

Dissertation Requirements

ID	423—Doctoral Dissertation	18 hours
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Social Sciences

Master of Arts Degree

1. The faculty of the departments in the social science areas offer a Master of Arts degree in social sciences, with areas of concentration in anthropology, economics, geography, political science, sociology.
2. The purpose of the degree is to develop scholarship in depth in one of the areas of the social sciences. The program may be designed for use as a terminal degree or as a foundation for doctoral study.
3. A minimum of twenty-four hours must be earned in the area of concentration.

4. The major in the social sciences must take ID 300, Introduction to Graduate Study, 3 hours, or the departmental substitution for this course, during his first quarter in residence.

5. Each student's program is worked out individually in conference with his adviser.

6. By permission of the department, a student may submit a thesis as a part of his work.

7. A comprehensive examination is given.

DOCTOR OF EDUCATION

Areas: Anthropology, Economics, Geography, Political Science, Sociology, United States History, World History.

Purpose:

To prepare superior teachers for schools, heads of departments of the Social Sciences, and coordinators and supervisors of Social Sciences instruction in the schools.

ADMISSION TO CANDIDACY

Prerequisites: A master's degree in the Social Sciences (including history) including not fewer than 12 quarter hours in each of seven areas of the Social Sciences, a teaching certificate and two years of successful teaching experience in a school accredited by one of the regional accrediting agencies. (A committee will interpret the application of the 12 quarter hour requirements in each individual case. A student may take approved courses to remove deficiencies.)

EXAMINATIONS

Exploratory Examination—taken during first quarter in residence, oral.

Qualifying Examination—oral; when deficiencies have been resolved and student is prepared to demonstrate minimum proficiency in seven social science fields.

Comprehensive Examination—Written and oral; when course work is completed and three fields have been adequately mastered.

Defense of Thesis—oral.

ADVISER

The Chairman of the Social Science Doctoral Committee will serve as the student's adviser until he has completed his *Exploratory Examination*.

Sociology

Master of Arts Degree

A concentration in Sociology is offered within the major in Social Science. See Social Science, page 92.

Special Education

The campus Special Education School, a cooperative project of the Greeley Public Schools and Colorado State College, provides a laboratory in which students may observe and do student teaching. At the present time, this laboratory school enrolls mentally retarded, physically handicapped, acoustically handicapped, emotionally disturbed, and visually handicapped children. The Special Education

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facility also includes a speech and hearing clinic which provides complete audiometric evaluations as well as speech correction services; an apartment classroom; and provision for testing and measuring exceptional children.

A graduate program is offered to prepare rehabilitation counselors.

Master of Arts Degree

Special Education: Audiology

The following is the required program:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
SPED	250—Pathology and Introduction to Education of the Deaf and Hard of Hearing	3
SPED	263—Neurological Basis for Speech and Hearing	3
SPED	273—The Auditory Mechanism	3
SPED	373—Speech Audiometry II	3
SPED	374—Internship in Audiology	Max. 15*
SPED	375—Differential Diagnosis of Auditory Problems	3
SPED	376—Electrophysiological Audiometry	3
SPED	377—Psychoacoustics	4
SPED	378—Bioacoustics	4
SPED	379—Seminar in Audiology	3
PHYS	260—Physics of Sound	3

*Only 8 quarter hours of Internship may be counted toward the minimum number required for graduation.

In addition to the above-listed requirements, the student and his adviser shall select additional courses to complete a minimum of 48 hours. The student must also complete supervised practicum experiences totaling a minimum of 275 clock hours with diversified types of disorders and age ranges of persons having these disorders. The following courses are highly recommended as electives:

RSM	204—Descriptive Statistics	4
RSM	305—Statistical Inference	5
PSY	275—Experimentation in Psychology	3

The above requirements assume an adequate undergraduate background in Speech Pathology, Speech Science, Phonetics, Language Development, and Audiology. Adequacy will be judged by review of undergraduate transcripts and will be based primarily on the A.B. requirements of Colorado State College.

Special Education: Speech Pathology

The following is the required program:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
SPED	263—Neurological Basis for Speech and Hearing	3
SPED	360—Cerebral Palsy	3
SPED	361—Cleft Palate	3
SPED	362—Aphasia	3
SPED	363—Language Disorders of Children	3
SPED	364—Internship in Speech Pathology	Max. 15*
SPED	370—Seminar in Internship Experiences	3

*Only 8 quarter hours of Internship may be counted toward the minimum number required for graduation.

The student and his adviser shall select additional courses to complete a minimum of 48 quarter hours which must allow the student to meet National and State of Colorado academic standards. The student must also have completed supervised practicum experience totaling a minimum of 275 clock hours with diversified types

of disorders and age ranges of persons having these disorders. The following courses are highly recommended as electives:

SPED	365—Stuttering II	3
SPED	366—Community Rehabilitation Resources for Speech Pathology and Audiology.....	3
SPED	367—Seminar in Speech and Hearing Science	3
SPED	368—Seminar in Speech Pathology	3-6
SPED	369—Voice Disorders II	3
SPED	371—Articulation Disorders II	3
RSM	204—Descriptive Statistics	4

The above requirements assume an adequate undergraduate background in Speech Pathology, Speech Science, Phonetics, Language Development, and Audiology. Adequacy will be judged by review of undergraduate transcripts and will be based primarily on the A.B. requirements of Colorado State College.

Special Education: Teaching the Acoustically Handicapped

The following is the required program: (If any of these courses have been completed at the undergraduate level, appropriate electives may be substituted.)

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
SPED	250—Pathology and Introduction to Education of the Deaf and Hard of Hearing	3
SPED	251—Speech Development for Deaf and Hard of Hearing	6
SPED	252—Language Development for Deaf and Hard of Hearing	6
SPED	253—Methods of Teaching Content Subjects to the Deaf and Hard of Hearing.....	3
SPED	254—Methods of Teaching Reading to the Deaf and Hard of Hearing	3
SPED	257—Speech Reading	3
SPED	258—Auditory Training and Hearing Aids	2
SPED	270—Basic Audiology	3
SPED	274—Practicum in Audiology	2
	<i>or</i>	
SPED	275—Auditory Disorders in Children	3
SPED	300—Education and Psychology of Exceptional Children	3
SPED	350—Advanced Problems in Teaching Deaf Children	3
SPED	351—Advanced Problems in Speech for Deaf and Hard of Hearing	3
SPED	352—Linguistic Approach to Language for the Deaf and Hard of Hearing	3
SPED	354—Practicum with Deaf and Hard of Hearing	Max. 15
SPED	359—Seminar in Education of the Deaf and Hard of Hearing	3

Total Program: 45 quarter hours minimum.

Special Education: Teaching Mentally Retarded Children

The following is the required program:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
SPED	210—Introduction to Mental Retardation	4
SPED	212—Curriculum Development and Methodology for Mentally Retarded: Elementary Level	4
SPED	213—Curriculum Development and Methodology for Mentally Retarded: Secondary Level	4
SPED	300—Education and Psychology of Exceptional Children	3
SPED	304—Principles and Practices of Measurement of the Handicapped	3
SPED	314—Practicum with the Mentally Retarded	Max. 15
SPED	372—Speech Correction and Improvement in the Classroom	3

Elective Courses (*strongly recommended)

*SPED	202—Counseling Parents of Exceptional Children	3
*SPED	211—Education of Severely Mentally Retarded Children	3
*SPED	230—Care and Pathology of the Physically Handicapped	3
SPED	241—Survey of Education of the Visually Handicapped	3
SPED	250—Pathology and Introduction to Education of the Deaf	3
SPED	290—Introduction to Vocational Rehabilitation Counseling	3

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*SPED	301—Administration and Supervision of Special Education	3
*SPED	302—Appraisal of Exceptional Children	4
*SPED	311—Vocational Rehabilitation of Mentally Retarded Youth	3
*SPED	312—Advanced Curriculum Development	4
ELED	324—Remedial Reading in the Elementary School	4
PSY	230—Child and Adolescent Psychology	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
PSY	288—Abnormal Psychology	3
MUS	313—Music for the Exceptional Child	3

Total Program: 45 quarter hours minimum.

Special Education: Teaching Physically Handicapped Children

The following is the required program:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
SPED	230—Care and Pathology of the Physically Handicapped	3
SPED	231—Problems of Teaching the Physically Handicapped	3
SPED	300—Education and Psychology of Exceptional Children	3
SPED	304—Principles and Practices of Measurement of the Handicapped	3
SPED	331—Advanced Problems in Teaching the Cerebral Palsied	3
SPED	334—Practicum with Physically Handicapped	Max. 15
SPED	372—Speech Correction and Improvement in the Classroom	3

Elective Courses: (*Strongly Recommended)

*SPED	202—Counseling Parents of Exceptional Children	3
*SPED	210—Introduction to Mental Retardation	4
*SPED	211—Education of Severely Mentally Retarded Children	3
SPED	212—Curriculum Development and Methodology for Mentally Retarded: Elementary Level	4
SPED	220—Introduction to Education of Socially and Emotionally Disturbed Children	3
*SPED	241—Survey of Education of the Visually Handicapped	3
SPED	250—Pathology and Introduction to Education of the Deaf	3
*SPED	301—Administration and Supervision of Special Education	3
*SPED	302—Appraisal of Exceptional Children	4
SPED	311—Vocational Rehabilitation of Mentally Retarded Youth	3
SPED	360—Cerebral Palsy	3
SPED	397—Medical Aspects of Rehabilitation	3
ELED	324—Remedial Reading in the Elementary School	4
PSY	230—Child and Adolescent Psychology	3
PSY	285—Mental Hygiene and Emotional Adjustment	3
PSY	288—Abnormal Psychology	3
HPER	269—Recreation for the Handicapped	3
MUS	313—Music for the Exceptional Child	3

Total Program: 45 quarter hours minimum.

Special Education: Teaching Socially and Emotionally Disturbed Children

The following is the required program:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
SPED	220—Introduction to the Education of Socially and Emotionally Disturbed Children	3
SPED	300—Education and Psychology of Exceptional Children	3
SPED	304—Principles and Practices of Measurement of the Handicapped	3
SPED	321—Methods of Teaching Classes of Socially and Emotionally Maladjusted Children	3
SPED	322—Sociological and Cultural Aspects of Socially and Emotionally Disturbed Children	3
SPED	323—Seminar in Education of the Emotionally Disturbed	3
SPED	324—Practicum with the Socially and Emotionally Disturbed	Max. 15

Elective Courses: (*Strongly Recommended)

*SPED	202—Counseling Parents of Exceptional Children	3
SPED	290—Introduction to Vocational Rehabilitation Counseling	3
SPED	301—Administration and Supervision of Special Education	3
SPED	302—Appraisal of Exceptional Children	4
SPED	363—Language Disorders of Children	3
SPED	372—Speech Correction and Improvement in the Classroom	3
PSY	230—Child and Adolescent Psychology	3
PSY	240—Psychology of Learning	3
PSY	280—Personality Dynamics	3
PSY	293—Sociodrama	2
PCG	285—Mental Hygiene and Emotional Adjustment	3
*PCG	315—Counseling Theory and Techniques	3
PCG	325—Human Neuropsychology	4
*PCG	331—Child Psychology	3
PCG	334—Psychology of Individual Differences	3
*PCG	340—Theories of Learning	5
*PCG	347—Learning Problems: Diagnosis and Remediation	3
PCG	380—Theories of Personality	3
*PCG	384—Group Dynamics in Human Relations	3
PSY	288—Abnormal Psychology	3
ELED	324—Remedial Reading in the Elementary School	4
ELED	325—Remedial Reading Case Study	3
MUS	313—Music for the Exceptional Child	3
SOC	222—The Sociology of Child Development	3
*SOC	323—The Sociology of Mental Health and Illness	3

Total Program: 45 quarter hours minimum.

Special Education: Teaching the Visually Handicapped

The following is the required program:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
SPED	240—Survey of Education of the Visually Handicapped	3
SPED	242—Principles of Education of the Partially Seeing	3
SPED	243—Beginning Braille	3
SPED	244—Elementary Methods for the Blind	3
SPED	245—Secondary Methods for the Blind	3
SPED	300—Education and Psychology of Exceptional Children	3
SPED	304—Principles and Practices of Measurement of the Handicapped	3
SPED	340—Structure and Function of the Eye	3
SPED	343—Advanced Braille	3
SPED	344—Practicum with Visually Handicapped	Max. 15
SPED	345—Principles of Orientation and Mobility for the Blind	3

The balance of the program may be elected from the following:

SPED	202—Counseling Parents of Exceptional Children	3
SPED	210—Introduction to Mental Retardation	4
SPED	290—Introduction to Vocational Rehabilitation Counseling	3
SPED	346—The Multi-Impaired Blind Child	3
PSY	230—Child and Adolescent Psychology	3
PSY	240—Psychology of Perception and Learning	3
PCG	317—Foundations of Guidance	3
PCG	331—Child Psychology	3
PCG	332—Psychology of Adolescence	3

Total Program: 45 quarter hours minimum.

Special Education: Rehabilitation Counseling

(Up to 75 quarter hours)
(no teaching certificate required for admission)
(no teaching certificate available upon graduation)

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The following program is required:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
ID	300—Introduction to Graduate Study	3
SPED	290—Introduction to Vocational Rehabilitation Counseling	3
SPED	298—Community Resources for Rehabilitation, Guidance and Counseling	3
SPED	304—Principles and Practices of Measurement of the Handicapped	3
SPED	390—Counseling the Handicapped	3
SPED	391—Principles and Techniques of Rehabilitation Counseling	3
SPED	392—Vocational Placement and Adjustment of the Disabled in Rehabilitation	3
SPED	393—Seminar in Rehabilitation: Rehabilitation Plan Formulation	3
SPED	394—Supervised Clinical Practice in Rehabilitation Counseling	Max. 16
SPED	395—Psychological Aspects of Disability	3
SPED	396—Special Problems in Diagnosis and Evaluation of the Handicapped	3
SPED	397—Medical Aspects of Rehabilitation	3
SPED	398—Seminar: Introduction to Employment Counseling	3
SPED	399—Principles of Employment Counseling	3
IA	334—Industrial Occupations	3

Recommended Electives:

SPED	202—Counseling Parents of Exceptional Children	3
SPED	210—Introduction to Mental Retardation	4
SPED	230—Care and Pathology of the Physically Handicapped	3
SPED	240—Survey Education of the Visually Handicapped	3
SPED	250—Pathology and Introduction to Education of the Deaf and Hard of Hearing	3
SPED	311—Vocational Rehabilitation of Mentally Retarded Youth	3
PCG	313—Occupational Information and Analysis in Vocational Guidance	3
PCG	315—Counseling Theories	3
PCG	317—Foundations of Guidance	3
PCG	373—Individual Tests of Intelligence	4
PCG	376—Supervised Practice in the Use of Individual Tests of Intelligence III	5
PCG	380—Theories of Personality	3
PCG	411—Introductory Supervised Practice in Counseling	3

Specialist in Education Degree

A specialized program leading toward a Specialist Degree in Education may be designed for those students with a Master's Degree who meet Graduate School Admission Requirements.

Doctor of Education Degree

The following degree program outlines are offered as guidelines, and may be modified by the adviser to meet individual needs of students.

Special Education: Administration

For the preparation of personnel in the area of administration of special education:

Core Requirements:

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
SPED	301—Administration and Supervision of Special Education	3
SPED	311—Vocational Rehabilitation of Mentally Retarded Youth	3
SPED	402—Problem Seminar in Special Education	3
SPED	403—Trends in Special Education	3
SPED	404—Internship in Special Education	15

Courses representing each area of the handicapped in which Colorado State College offers a teacher preparation program: (Students majoring in administrative aspects of special education must be certified in two areas of special education.)

General and Administration

SPED	201—Workshop in Special Education	1-6
SPED	202—Counseling Parents of Exceptional Children	3
SPED	300—Education and Psychology of Exceptional Children.....	3
SPED	302—Appraisal of Exceptional Children	4
SPED	303—Practicum in Appraising Exceptional Children	3
SPED	304—Principles and Practices of Measurement of the Handicapped	3
SPED	401—Research Seminar in Special Education and Rehabilitation	3
EDHP	461—Sociological Foundations of Education	3
EDHP	463—Sociological Foundations of Education	3
PCG	441—Psychological Foundations of Education	3

Mentally Retarded

SPED	210—Introduction to Mental Retardation	4
SPED	211—Education of Severely Mentally Retarded Children.....	3
SPED	212—Curriculum Development and Methodology for Mentally Retarded: Elementary Level	4
SPED	213—Curriculum Development and Methodology for Mentally Retarded: Secondary Level	4
SPED	312—Advanced Curriculum Development	4
SPED	314—Practicum with the Mentally Retarded	Max. 15
SPED	410—Sociological and Educational Aspects of Mental Retardation.....	4

Emotionally Disturbed and Socially Maladjusted

SPED	220—Introduction to the Education of Socially and Emotionally Disturbed Children	3
SPED	321—Methods of Teaching Classes of Socially and Emotionally Maladjusted Children	3
SPED	322—Sociological and Cultural Aspects of Socially and Emotionally Disturbed Children	3
SPED	323—Seminar in Education of Emotionally Disturbed.....	3
SPED	324—Practicum with Socially and Emotionally Disturbed.....	Max. 15

Physically Handicapped

SPED	230—Care and Pathology of the Physically Handicapped	3
SPED	231—Problems of Teaching the Physically Handicapped.....	3
SPED	331—Advanced Problems in Teaching the Cerebral Palsied.....	3
SPED	334—Practicum with Physically Handicapped.....	Max. 15

Visually Handicapped

SPED	240—Survey of Education of the Visually Handicapped	3
SPED	242—Principles of Education of the Partially Seeing	3
SPED	243—Beginning Braille	3
SPED	244—Elementary Methods for the Blind	3
SPED	245—Secondary Methods for the Blind	3
SPED	340—Structure and Function of the Eye	3
SPED	343—Advanced Braille	3
SPED	344—Practicum with Visually Handicapped	Max. 15
SPED	345—Principles of Orientation and Mobility for the Blind.....	3

Acoustically Handicapped

SPED	250—Pathology and Introduction to Education of the Deaf and Hard of Hearing	3
SPED	251—Speech Development for Deaf and Hard of Hearing	6
SPED	252—Language Development for Deaf and Hard of Hearing	6
SPED	253—Methods of Teaching Content Subjects to the Deaf and Hard of Hearing.....	3

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SPED	256—Education of Hard-of-Hearing Child	3
SPED	257—Speech Reading	3
SPED	350—Advanced Problems in Teaching Deaf and Hard of Hearing	3
SPED	354—Practicum with the Deaf and Hard-of-Hearing	Max. 15

Speech Pathology

SPED	260—Public School Speech Pathology	3
SPED	263—Neurological Basis for Speech and Hearing	3
SPED	264—Practicum in Speech Pathology	Max. 6
SPED	267—Diagnosis in Speech Pathology	3
SPED	268—Speech and Language Development for Mentally Retarded	3
SPED	360—Cerebral Palsy	3
SPED	361—Cleft Palate	3
SPED	362—Aphasia	3
SPED	363—Language Disorders of Children	3
SPED	365—Stuttering II	3
SPED	366—Community Rehabilitation Resources in Speech Pathology and Audiology	3
SPED	367—Seminar in Speech and Hearing Science	3
SPED	368—Seminar in Speech Pathology	3-6
SPED	369—Voice Disorders II	3
SPED	370—Seminar in Internship Experiences	3
SPED	371—Articulation Disorders II	3
SPED	461—Seminar: Language Problems	3
SPED	462—Seminar: Communication Barriers	3
SPED	463—Practicum in Speech Diagnosis	3
SPED	464—Practicum in Communication Barriers	3

Audiology

SPED	270—Basic Audiology	3
SPED	271—Speech Audiometry	3
SPED	272—Advanced Audiometry	3
SPED	273—The Auditory Mechanism	3
SPED	274—Practicum in Audiology	Max. 6

Gifted

SPED	280—Education of Children with Special Abilities	3
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Vocational Rehabilitation

SPED	290—Introduction to Vocational Rehabilitation Counseling	3
SPED	298—Community Resources for Rehabilitation, Guidance and Counseling	3
SPED	390—Counseling the Handicapped	3
SPED	391—Principles and Techniques of Rehabilitation Counseling	3
SPED	392—Vocational Placement and Adjustment of the Disabled in Rehabilitation	3
SPED	393—Seminar in Rehabilitation: Rehabilitation Plan Formulation	3
SPED	394—Supervised Clinical Practice in Rehabilitation Counseling	Max. 16
SPED	395—Psychological Aspects of Disability	3
SPED	396—Special Problems in Diagnosis and Evaluation of the Handicapped	3
SPED	397—Medical Aspects of Rehabilitation	3
SPED	490—Seminar in Rehabilitation: Professional Problems	3
SPED	491—Seminar: Administration and Supervision of Vocational Rehabilitation Programs	3
SPED	494—Advanced Practicum	Max. 8

The total program of the doctorate shall consist of a minimum of 90 hours beyond the master's degree. Students will receive a breadth of course work in various areas of exceptionalism. Their program shall also include a required minor or supporting area in administration as follows:

Course Requirements for Minor or Supporting Area

Course No.	Course Title	Hours Credit
EDAD	341—Philosophy and Techniques of Public Relations	3
EDAD	342—School Administration—Federal, State, Local	3

EDAD	343—School Finance	3
EDAD	344—School Plant Planning	3
EDAD	348—School Law II	3
EDAD	355—Organization, Administration, and Supervision of the Elementary School	4
	or	
EDAD	365—Secondary School Organization, Administration and Supervision	4
EDAD	443—Seminar in Administration (3 courses—9 hours)	9
SFE	351—Supervision of Student Teachers	3

Required Statistics Courses:

All students completing the doctorate in Special Education: Administration shall demonstrate competency in statistical analysis and design of research studies relating to administrative and organizational problems. A minimum of two courses in statistics will be required*, consistent with the student's present level of statistical competency. The following two courses are representative of those which might be required.

Course No.	Course Title	Hours	Credit
RSM	305—Statistical Inference	5	
RSM	403—Analysis of Variance and Covariance	3	

*May be waived by adviser in the case of students who have previously completed the equivalent of a minor in statistics.

Special Education: Crippled and other Health Impaired

All candidates seeking the doctor of education degree with the area of concentration in special education are required to take specified courses or their equivalents as certified by the major professor. These courses are included in the following areas:

1. Learning difficulties of crippled and health impaired children.
2. Theories of curriculum development, teaching methods and teaching tools with application for the crippled and severely handicapped.
3. Habilitation of the crippled and severely handicapped.
4. Counseling exceptional children and their parents.
5. The role of the consultant and resource person in special education.
6. The use of diagnostic procedures and tools in evaluating crippled, cerebral palsied, multi-handicapped, and other health impaired children.
7. Human growth and development.
8. Associated anomalies in crippled and health impaired children.
9. Theories and principles of research with application.
10. Administration and supervision.

The transcripts of each candidate whose area of concentration is special education are evaluated and the candidate is required to take work in supporting areas according to his educational and professional experience. The recommended supporting areas are education psychology, elementary education, or administration and supervision. Practicum and field experiences are required in the area of the crippled and other health impaired. A laboratory school for some of these experiences is operated on campus.

Specific Course Requirements:

1. Courses required at M.A. level.

Course No.	Course Title	Hours	Credit
SPED	230—Care and Pathology of the Physically Handicapped	3	
SPED	231—Problems of Teaching the Physically Handicapped	3	
SPED	300—Education and Psychology of Exceptional Children	3	
SPED	331—Advanced Problems in Teaching the Cerebral Palsied	3	
SPED	334—Practicum with Physically Handicapped	Max. 5	
SPED	372—Speech Correction and Improvement in the Classroom	3	
SPED	397—Medical Aspects of Rehabilitation	3	
ID	300—Introduction to Graduate Study	3	

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2. Courses required beyond Masters for Doctor of Education Degree in Special Education with emphasis on Crippled and Other Health Impaired Children.

Course No.	Course Title	Hours	Credit
SPED	202—Counseling Parents of Exceptional Children	3	
SPED	301—Administration and Supervision of Special Education	3	
SPED	302—Appraisal of Exceptional Children	4	
SPED	303—Practicum in Appraising Exceptional Children	3	
SPED	311—Vocational Rehabilitation of Mentally Retarded	3	
SPED	401—Research Seminar in Special Education	3	
SPED	402—Problem Seminar in Special Education	3	
SPED	403—Trends in Special Education	3	
SPED	404—Internship in Special Education	Max. 15	
SPED	411—Psychological Aspects of Mental Retardation	4	
ID	301—Practicum	Max. 4	
ID	400—Introduction to Doctoral Research	3	
ID	423—Doctoral Dissertation	Max. 18	
PCG	325—Human Neuropsychology	4	
PCG	331—Child Psychology	3	
PCG	340—Theories of Learning	5	
PCG	373—Individual Tests of Intelligence	4	
PCG	374—Supervised Practice in the Use of Individual Tests I	6	
PCG	380—Theories of Personality	3	
PCG	470—Measurement (Prediction and Assessment)	3	
PCG	471—Measurement (Scaling and Related Techniques)	3	
RSM	204—Descriptive Statistics	4	
RSM	305—Statistical Inference	5	
RSM	403—Analysis of Variance and Covariance	3	
RSM	423—Nonparametric Statistics	3	

3. Elective Courses:

Course No.	Course Title	Hours	Credit
SPED	250—Pathology and Introduction to Education of the Deaf and Hard of Hearing	3	
SPED	256—Education of Hard-of-Hearing Child	3	
SPED	280—Education of Children with Special Abilities	3	
SPED	290—Introduction to Vocational Rehabilitation Counseling	3	
SPED	346—The Multi-Impaired Blind Child	3	
SPED	360—Cerebral Palsy	3	
SPED	371—Articulation Problems II	3	
SPED	392—Vocational Placement and Adjustment of the Disabled in Rehabilitation	3	
SPED	410—Sociological and Educational Aspects of Mental Retardation	4	
SPED	412—Medical Aspects of Mental Retardation	4	
EDAD	342—School Administration—Federal, State, Local	3	
EDAD	343—School Finance	3	
ELED	310—Reading in the Elementary School	3	
ELED	311—English in the Elementary School	3	
ELED	312—Mathematics in the Elementary School	3	
ELED	313—Social Studies in the Elementary School	3	
PCG	313—Occupational Information and Analysis in Vocational Guidance	3	
PCG	315—Counseling Theories	3	
PCG	334—Psychology of Individual Differences	3	
PCG	383—Projective Techniques	3	
PCG	384—Group Dynamics in Human Relations	3	
PSY	288—Abnormal Psychology	3	
RSM	313—Planning and Methodology of Research	3	
RSM	413—Multivariate Analysis	3	

Special Education: Emotionally Disturbed

All candidates seeking the doctor of education degree with the area of concentration in special education are required to take specified courses or their equivalents as certified by the major professor. These courses are included in the following areas.

1. Learning difficulties of emotionally disturbed children.
2. Theories of curriculum development, teaching methods and teaching tools with application for the emotionally disturbed.
3. Counseling exceptional children and their parents.

4. The role of the consultant and the resource person in special education.
5. The use of diagnostic procedures and tools in evaluating the emotionally disturbed.
6. Human growth and development.
7. Theories and principles of research with applications.
8. Administration and supervision.

A prior concentration of course work in areas relating to the emotionally disturbed is assumed; two years of professional experience with emotionally disturbed children is required. A student deficient in course work in the area will be held responsible for completion of those courses which constitute the core of the graduate teacher certification program relating to the emotionally disturbed.

The transcripts of each candidate whose area of concentration is special education are evaluated and the candidate is required to take work in supporting areas according to his educational and professional experience. The recommended supporting areas are educational psychology, elementary education, or administration and supervision. Practicum and field experiences are required in the area of the emotionally disturbed. Laboratory classes for some of these experiences are operated on campus.

Specific Course Requirements:

ID	400—Introduction to Doctoral Research
ID	423—Doctoral Dissertation
SPED	220—Introduction to the Education of Socially and Emotionally Disturbed Children
SPED	300—Education and Psychology of Exceptional Children
SPED	301—Administration and Supervision of Special Education
SPED	302—Appraisal of Exceptional Children
SPED	303—Practicum in Appraising Exceptional Children
SPED	321—Methods of Teaching Classes of Socially and Emotionally Maladjusted Children
SPED	322—Sociological and Cultural Aspects of Socially and Emotionally Disturbed Children
SPED	323—Seminar in Education of Emotionally Disturbed
SPED	334—Practicum with the Socially and Emotionally Disturbed
SPED	401—Research Seminar in Special Education and Rehabilitation
SPED	402—Problem Seminar in Special Education
SPED	403—Trends in Special Education
PSY	288—Abnormal Psychology
PSY	293—Sociodrama
PCG	311—Organization and Administration of Guidance Services
PCG	331—Child Psychology
PCG	340—Theories of Learning
PCG	347—Learning Problems: Diagnosis and Remediation
PCG	371—Aptitude and Achievement Analysis
PCG	373—Individual Tests of Intelligence
PCG	374—Supervised Practice in the Use of Individual Tests of Intelligence I
PCG	380—Personality Development
PCG	384—Group Dynamics in Human Relations
PCG	470—Measurement: Prediction and Assessment
PCG	471—Measurement: Scaling and Related Techniques
RSM	204—Descriptive Statistics
RSM	305—Statistical Inference
RSM	403—Analysis of Variance and Covariance
ELED	324—Remedial Reading in the Elementary School
ELED	325—Remedial Reading Case Study

The total program for the doctorate requires a minimum of 90 hours beyond the Master's Degree. The above required courses total in excess of 90 hours, but a prior concentration of course work in the area is assumed. This course work may in effect reduce the number of required hours to a total of 90.

Specific additional elective courses may be written into the doctoral program by the adviser on an individual basis, taking into consideration prior education and experience.

Elective Courses:

ELED	310—Reading in the Elementary School
ELED	311—English in the Elementary School
ELED	312—Mathematics in the Elementary School

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ELED	313—Social Studies in the Elementary School
EDHP	461—Philosophical Foundations of Education
EDHP	463—Sociological Foundations of Education
MUS	313—Music for the Exceptional Child
PSY	230—Child and Adolescent Psychology
PSY	240—Psychology of Perception and Learning
PSY	280—Personality Dynamics
PCG	316—Clinical Methods in Psychology
PCG	325—Human Neuropsychology
PCG	334—Psychology of Individual Differences
PCG	382—Introduction to Rorschach Administration and Scoring
PCG	383—Projective Techniques
SOC	222—The Sociology of Child Development
SOC	323—The Sociology of Mental Health and Illness
SPED	280—Education of Children with Special Abilities
SPED	290—Introduction to Vocational Rehabilitation Counseling
SPED	395—Psychological Aspects of Disability

Special Education: Mental Retardation

All candidates seeking the Doctor of Education degree with the area of concentration in special education are required to take specified courses or their equivalents as certified by the major professor. These courses are included in the following areas.

1. Learning difficulties of retarded children.
2. Theories of curriculum development, teaching methods and teaching tools with application for mentally retarded.
3. Habilitation of the mentally retarded.
4. Counseling exceptional children and their parents.
5. The role of the consultant and the resource person in special education.
6. The use of diagnostic procedures and tools in evaluating the mentally retarded.
7. Human growth and development.
8. Associated anomalies in mentally retarded children.
9. Theories and principles of research with applications.
10. Administration and supervision.

The transcripts of each candidate whose area of concentration is special education are evaluated and the candidate is required to take work in supporting areas according to his educational and professional experience. The recommended supporting areas are educational psychology, elementary education, or administration and supervision. Practicum and field experiences are required in the area of the mentally retarded. Laboratory schools for some of these experiences are operated on campus.

Specific Course Requirements:

Course No.	Course Title	Hours	Credit
ID	301—Practicum		4
ID	400—Introduction to Doctoral Research		3
ID	423—Doctoral Research Study		18
SPED	302—Appraisal of Exceptional Children		4
SPED	303—Practicum in Appraising Exceptional Children.....		3
SPED	311—Vocational Rehabilitation of Mentally Retarded Youth.....		3
SPED	312—Advanced Curriculum Development		4
SPED	314—Practicum with the Mentally Retarded	Max.	15
SPED	401—Research Seminar in Special Education		3
SPED	402—Problem Seminar in Special Education		3
SPED	403—Trends in Special Education		3
SPED	410—Sociological and Educational Aspects of Mental Retardation.....		4
SPED	411—Psychological Aspects of Mental Retardation		4
PCG	331—Child Psychology		3
PCG	340—Theories of Learning		5
PCG	371—Aptitude and Achievement Analysis		5
PCG	380—Theories of Personality		3
PCG	470—Measurement (Prediction and Assessment)		3
PCG	471—Measurement (Scaling and Related Techniques).....		3
RSM	204—Descriptive Statistics		4

RSM	305—Statistical Inference	5
RSM	313—Planning and Methodology of Research	3
RSM	403—Analysis of Variance and Covariance	3
RSM	413—Multivariate Analysis	3
RSM	423—Nonparametric Statistics	3

Elective Courses:

EDAD	342—School Administration—Federal, State, Local	3
EDAD	343—School Finance	3
EDHP	461—Philosophical Foundations of Education	3
ELED	310—Reading in the Elementary School	3
ELED	311—English in the Elementary School	3
ELED	312—Mathematics in the Elementary School	3
ELED	313—Social Studies in the Elementary School	3
PCG	313—Occupational Information and Analysis in Vocational Guidance	3
PCG	315—Counseling Theories	3
PCG	316—Clinical Methods in Counseling	3
PCG	334—Psychology of Individual Differences	3
PCG	373—Individual Tests of Intelligence	4
PCG	374—Supervised Practice in the Use of Individual Tests of Intelligence	6
PCG	382—Introduction to Rorschach Administration and Scoring	3
PCG	383—Projective Techniques	3
PSY	288—Abnormal Psychology	3
SPED	290—Introduction to Vocational Rehabilitation Counseling	3
SPED	301—Administration and Supervision of Special Education	3

Special Education: Rehabilitation Counseling

(no teaching certificate required)

All doctoral students in the area of Rehabilitation Counseling, in addition to having completed the Masters Degree in the area, need approximately two years work experience in rehabilitation or related field (evaluated by the rehabilitation staff) prior to awarding of the degree.

The following program is required.

<i>Course No.</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credit</i>
ID	301—Supervised Practice in the Training of Counselors	Max.	4
ID	400—Introduction to Doctoral Research		3
ID	423—Doctoral Dissertation		18
ID	451—Supervised Practicum in College Teaching	Max.	4
SPED	401—Research Seminar in Special Education and Rehabilitation		3
SPED	411—Psychological Aspects of Mental Retardation		4
SPED	490—Seminar in Rehabilitation: Professional Problems		3
SPED	491—Administration and Supervision of Vocational Rehabilitation Programs		3
SPED	494—Advanced Practicum	Max.	8
PCG	371—Aptitude and Achievement Analysis		5
PCG	412—Analysis of the Individual		3
PCG	470—Measurement: Prediction and Assessment		3
RSM	204—Descriptive Statistics		4
RSM	305—Statistical Inference		5
RSM	313—Planning and Methodology of Research		3
RSM	403—Analysis of Variance and Covariance		3

Recommended Electives:

SPED	392—Vocational Placement and Adjustment of the Disabled in Rehabilitation	3
SPED	393—Seminar in Rehabilitation: Rehabilitation Plan Formulation	3
SPED	395—Psychological Aspects of Disability	3
SPED	398—Seminar: Introduction to Employment Counseling	3
SPED	399—Principles of Employment Counseling	3
PCG	324—Theories of Motivation	3
PCG	325—Neuropsychology	4
PCG	340—Theories of Learning	5
PSY	288—Abnormal Psychology	3
RSM	413—Multiple Regression	3
RSM	423—Nonparametric Statistics	3
RSM	433—Factor Analysis	3

Special Education: Speech Pathology

All candidates seeking the doctor of education degree with the area of concentration in special education are required to take specified courses or their equivalents as certified by the major professor. The student should gain an understanding of the various barriers that serve as factors in disturbed communication. Of major consideration is the nature of the relationship of the individual to his communicating environment. The student should gain an understanding of the methods for assessing and manipulating defective factors involved in the dynamics of speech in communication. To gain such understanding and the skills relating to habilitation and rehabilitation, the student together with his adviser, should select a balanced program from among those pertinent.

The student shall be expected to demonstrate an understanding of those problems in communication dealt within the following courses:

I. Speech Pathology

	<i>Hours Credit</i>
A. Completion of Special Education 360-371 series	49
B. SPED 461—Seminar: Language Problems	3
C. SPED 462—Seminar: Communication Barriers	3
D. SPED 463—Practicum in Speech Diagnosis	3
E. SPED 464—Practicum in Communication Barriers	3

II. Audiology

- A. The student should demonstrate an understanding of the process of hearing, problems of hearing, and the habilitation and rehabilitation of the hearing handicapped. Such understanding and skill can be gained through a study of the courses outlined for the Master of Arts Degree in Audiology.

In addition to the areas of concentration in Speech Pathology and Audiology, the student should select supporting courses from such other areas as the following. The courses listed are meant to be suggestions rather than requirements.

III. Special Education

	<i>Hours Credit</i>
SPED 202—Counseling Parents of Exceptional Children	3
SPED 301—Administration and Supervision of Special Education	3
SPED 302—Appraisal of Exceptional Children	3
SPED 401—Research Seminar in Special Education and Rehabilitation	3
SPED 402—Problem Seminar in Special Education	3
SPED 403—Trends in Special Education	3

IV. Personal, Emotional and Social Adjustment

PSY 280—Psychology of the Healthy Personality	3
PSY 293—Sociodrama	2
PCG 315—Counseling Theories	3
PCG 316—Clinical Methods in Psychology	3
PCG 380—Theories of Personality	3
PCG 381—Survey of Projective Techniques	3
PCG 384—Group Dynamics in Human Relations	3
PSY 288—Abnormal Psychology	3
PCG 389—Advanced Psychopathology	3

V. Measurement, Evaluation and Research

PCG 373—Individual Tests of Intelligence	4
PCG 374—Supervised Practice in the Use of Individual Tests of Intelligence I	6
RSM 204—Descriptive Statistics	4
RSM 305—Statistical Inference	5
RSM 313—Planning and Methodology of Research	3
RSM 423—Nonparametric Statistics	3

VI. Growth and Development

PSY 230—Child and Adolescent Psychology	3
PCG 325—Human Neuropsychology	4
PCG 331—Child Psychology	3
PCG 332—Psychology of Adolescence	3
PCG 334—Psychology of Individual Differences	3
PCG 340—Theories of Learning	5

VII. Physics

PHYS 262—Electronics I 4

Special Education: Visually Handicapped

All candidates seeking the Doctor of Education degree with the area of concentration in special education are required to take specified courses or their equivalents as certified by the major professor. These courses are organized to develop competencies and understandings in the following areas:

1. Curriculum development, methodology and learning difficulties of visually handicapped children.
2. Diagnosis, growth, development and associated anomalies of visually handicapped children.
3. Administration, supervision, and consultative services in special education.
4. Rehabilitation, counseling and research in special education.

A prior concentration of course work in vision is assumed; two years of professional experience with visually impaired children are required. A student deficient in course work in vision will be held responsible for completion of those courses which constitute the core of the graduate teacher certification program in vision.

Background Requirements:

SPED	240—Survey of Education of the Visually Handicapped	3
SPED	242—Principles of Education of the Partially Seeing	3
SPED	243—Beginning Braille	3
SPED	244—Elementary Methods for the Blind	3
SPED	245—Secondary Methods for the Blind	3
SPED	340—Structure and Function of the Eye	3
SPED	343—Advanced Braille	3
SPED	344—Practicum with Visually Handicapped	Max. 15
SPED	345—Principles of Orientation and Mobility for the Blind	3
SPED	346—The Multi-Impaired Blind Child	3
SPED	441—Seminar in Visually Handicapped	3

Required Course Work:

SPED	301—Administration and Supervision of Special Education	3
SPED	302—Appraisal of Exceptional Children	4
SPED	303—Practicum in Appraisal of Exceptional Children	3
SPED	401—Research Seminar in Special Education	3
SPED	402—Problems in Special Education	3
SPED	403—Trends in Special Education	3
PCG	340—Theories of Learning	5
ID	400—Introduction to Doctoral Research	3
ID	423—Doctoral Dissertation	18

Electives shall be completed from the following: The selection shall represent broad coverage of various disability areas selected through advisement upon the basis of past professional and academic exposure.

SPED	210—Introduction to Mental Retardation	4
SPED	211—Education of Severely Mentally Retarded Children	3
SPED	212—Curriculum Development and Methodology for Mentally Retarded: Elementary Level	4
SPED	213—Curriculum Development and Methodology for Mentally Retarded: Secondary Level	4
SPED	230—Care and Pathology of the Physically Handicapped	3
SPED	231—Problems of Teaching the Physically Handicapped	3
SPED	250—Pathology and Introduction to Education of the Deaf and Hard of Hearing	3
SPED	280—Education of Children with Special Abilities	3
SPED	290—Introduction to Vocational Rehabilitation Counseling	3
SPED	372—Speech Correction and Improvement in the Classroom	3
SPED	395—Psychological Aspects of Disability	3
SPED	397—Medical Aspects of Rehabilitation	3
EDHP	461—Philosophical Foundations of Education	3

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EDHP	463—Sociological Foundations of Education	3
PCG	317—Foundations of Guidance	3
PCG	373—Individual Tests of Intelligence	4
PCG	374—Supervised Practice in the Use of Individual Tests of Intelligence I.....	6
PCG	380—Theories of Personality	3

The total program of the doctorate shall consist of a minimum of 90 hours beyond the master's degree and shall include the following minor area of concentration: The *required minor* in Research and Measurement shall include a minimum of 27 hours from the following:

PCG	371—Aptitude and Achievement Analysis	5
PCG	470—Measurement: Prediction and Assessment	3
PCG	471—Measurement: Scaling and Related Techniques.....	3
RSM	204—Descriptive Statistics	4
RSM	305—Statistical Inference	5
RSM	313—Planning and Methodology of Research.....	3
RSM	403—Analysis of Variance and Covariance	3
RSM	413—Multivariate Analysis	3
RSM	423—Nonparametric Statistics	3
RSM	433—Factor Analysis	3

Speech Communication-Journalism

Master of Arts Degree

Speech Communication

The student should formulate his program in consultation with his advisor with a major emphasis in one of these fields: Rhetorical (Communication) Theory, Public Address (including the history of the use of rhetoric and the historical development of rhetoric) or Speech Education. In addition, the student is expected to develop some competence in research techniques (i.e., rhetorical criticism, empiricism, experimentation, etc.). The complete program includes a minimum of 45 hours credit, of which at least 30 hours are in the major. All candidates are expected to take ID 300 and prove English proficiency. The student may elect the balance of his program from appropriate allied areas; for example, Education, English, Fine Arts, Psychology, Sociology.

SPECIALIST IN EDUCATION DEGREE

(See requirements in the Specialist in Education Section.)

Information Specialist for Public Schools, Colleges, Universities, Business, Industry, and Government

This program is designed to prepare personnel to do most types of public relations work in the public schools, colleges, and universities and many types of work in business, industry, and government. The program is also designed to prepare journalism teachers for the public schools and two-year colleges.

In addition to courses, qualified students will serve as interns in the college's Department of Public Services and Development. The students will work in publications, news (newspaper, radio, TV), speakers bureau, and the office of development (fund raising).

Students admitted to the program should have completed undergraduate or graduate courses in newswriting and other selected courses in journalism. It is preferable that candidates also have some practical experience in journalism either as teachers or with commercial media.

Students will select courses for a broad general background plus an area of specialization. Courses would be chosen from such areas as graphic arts, photography, advertising, public opinion and pressure groups, methods of teaching journalism, speech, semantics, philosophy of education, group dynamics, school administration, higher education, psychology.

Theatre Arts

Master of Arts Degree

The core of the Theatre Arts degree may include a minimum of 11 hours in 300 level courses from the Department offerings and 11 hours of Individual Study. The balance of the student's program should be planned with his adviser. It is highly recommended that the student spend a minimum of one summer as a full-time member of the Little Theatre of the Rockies.

Vocational Education

General Information—Colorado State College is recognized as an approved state institution for the training of vocational teachers, counselors, and administrators, as well as providing specialized program for para-professional personnel.

The Department of Vocational Education provides a series of interdisciplinary vocational education courses which have been cooperatively planned with the state's vocational education agency. These courses are based on the requirements for vocational certification as outlined in the new Colorado State Plan.

The Career Development Center is the supporting pre-service and in-service arm of vocational education at Colorado State College. The Center acquires and disseminates information in the form of curriculum materials, research findings, and instructional media related to the present and emerging occupational fields. The Center is also involved in research projects and serves as a division of the State's Research Coordinating Unit and provides consulting services related to occupational education. The Center houses the administrative offices for the Department of Vocational Education.

The major responsibility for vocational teacher preparation, as in the past, is left to the various schools and departments on-campus. The Department of Vocational Education does not offer a degree but supports existing programs to prepare vocational teachers, counselors, and administrators. The department provides special extension and summer programs to assist teachers renew their vocational credentials, for example, summer work internships and occupational observation classes are available through Colorado State College for Colorado teachers and counselors. Write the Director of Vocational Education for additional information.

All vocational teachers must complete nine quarter credit hours in each five-year period in courses approved by the State Board. The nine quarter credit hours may be acquired as follows: (1) approved college or university courses; (2) approved work experience; (3) attendance at approved seminars or workshops including the annual vocational workshop. Application forms or renewal applications may be secured from the department's Career Development Center in Cranford #12.

Graduates seeking a vocational administrative or supervisory position must have completed 27 quarter hours in vocational education. Additional information and a list of specific requirements for various vocational fields can be obtained from the vocational education's Career Development Center.

State Approved Interdisciplinary Courses in Vocational Education

<i>Course No.</i>	<i>Course Title</i>	<i>Hours Credit</i>
IDVE	200—Directed Occupational Experience	Max. 8
IDVE	210—Foundations of Vocational Education (ATE)	3
IDVE	220—Cooperative Education and Coordination Techniques	3
IDVE	230—Occupational Analysis and Program Development	3-5
IDVE	240—Adult Vocational Education	3

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IDVE	250—Vocational Education for Learners With Special Needs	3
IDVE	270—Individual Studies in Vocational Education	Max. 4
IDVE	300—Directed Occupational Experience	15
IDVE	320—Directed Occupational Observations	8
IDVE	330—Seminars in Vocational Education	Max. 6
IDVE	340—Workshops in Vocational Education	Max. 6
IDVE	350—Practicum in Vocational Education	Max. 6
IDVE	440—Seminars in Vocational Education Administration and Supervision	3
IDVE	450—Supervised Field Experiences in Vocational Administration and Supervision	15

Zoology

Degrees in zoology are administered by the Department of Biological Sciences.

Master of Arts Degree in Arts and Sciences

Minimal Requirements:

BIO	350—Seminar in Biological Sciences	3
BIO	357—Biological Research (Substitute for ID 300)	5
	(Should be taken as soon as possible after beginning of graduate program)	
	Course of study as determined by the Biological Science Advisory Committee in consultation with the student	
	(This includes up to 8 hours ID 399.)	37
		<hr/> 45

Proficiency in chemistry through general biochemistry is strongly recommended for this degree.

Master of Arts Degree in the Teaching Professions

Minimal Requirements:

BIO	350—Seminar in Biological Sciences	3
BIO	357—Biological Research (Substitute for ID 300)	5
	(Should be taken as soon as possible after beginning of graduate program)	
	Course of instruction as determined by the Biological Science Advisory Committee in consultation with the student. (This includes up to 8 hours ID 399.)	37
		<hr/> 45

Proficiency in chemistry through general biochemistry is required for this degree.

Doctor of Education Degree

General Requirements:

BIO	350—Seminar in Biological Sciences	3
BIO	357—Biological Research (Waived if masters degree included thesis) (Substitute for ID 400) (Should be taken as soon as possible after beginning of graduate program)	5
		<hr/> 8

Professional Requirements:

RSM	204—Descriptive Statistics	5
SCED	278—Instructional Materials in the Teaching of Science	4
SCED	374—Instructional Problems in Teaching Science	3
SCED	376—Construction of Achievement Tests in Science	3
		<hr/> 15

Additional Suggested Courses:

ID	301—Practicum (supervised science education professional activity to improve science teaching)	4
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EDHP	395—Philosophy of Education	3
SCED	477—Evaluation and Testing in Science	3
SCI	200—History of Biology	3
SCI	376—History of Science	3
SCI	379—Philosophy of Science	3
	Course of instruction as determined by Biological Sciences Advisory Committee in consultation with student. (This in- cludes 18 hours ID 423.)	

COURSE DESCRIPTIONS

AEROSPACE STUDIES

AS 216. GROWTH AND DEVELOPMENT OF AEROSPACE POWER I.
Three hours credit.

Prerequisite, Enrollment in POC. A survey course about the development of air-power in the United States, including the beginning of manned flight, from Kitty Hawk to Versailles, the Inter-war years, development of an independent Air Force, Korea, and the challenges and changes. Development of communicative skill is a major goal of this course.

AS 218. GROWTH AND DEVELOPMENT OF AEROSPACE POWER II.
Three hours credit.

Prerequisite, Enrollment in POC. A study of Aerospace power today including concepts, doctrine and employment of aerospace forces; the future of manned aircraft and man's role in a flying air force, types and uses of future aircraft and technological developments; the initial study of astronautics and space age programs, the spatial environment and space orbits and trajectories. The development of communicative skills is a major goal of this course.

AS 220. GROWTH AND DEVELOPMENT OF AEROSPACE POWER III.
Three hours credit.

Prerequisite, Enrollment in POC. Continuation of the study of astronautics, space operations, and the future development in space. The development of communicative skill is a major goal in this course.

ANTHROPOLOGY

All of the following Anthropology courses have as a prerequisite ANT 20 or ANT 290 or permission of the instructor.

ANT 200. GREAT IDEAS IN ANTHROPOLOGY-SEMINAR. *Three to nine hours credit.*

The purpose of the course is to provide information about current important ideas in special fields of anthropology. Consult with instructor before enrolling

ANT 221. NORTH AMERICAN INDIANS. *Three hours credit.*
Aboriginal cultures north of Mexico.

ANT 224. INDIANS OF THE SOUTHWEST. *Three hours credit.*
Ethnology of the Pueblo, Navajo, Apache, Yuman tribes and the Pima-Papago groups.

ANT 227. SOUTH AMERICAN INDIANS. *Three hours credit.*
Aboriginal cultures of South America. Special emphasis on the Inca Empire.

ANT 228. OCEANIA. *Four hours credit.*
Peoples of Polynesia, Melanesia and Micronesia.

ANT 230. AFRICA SOUTH OF THE SAHARA I: EAST AND SOUTH AFRICA. *Four hours credit.*
Emphasis will be placed on tribal backgrounds and acculturation that is taking place between European and African systems in East and South Africa.

ANT 231. AFRICA SOUTH OF THE SAHARA II: NIGER-CONGO AREA.
Four hours credit.
Emphasis will be placed on tribal backgrounds and acculturation that is taking place between European and African systems in Niger-Congo drainage systems in Africa.

ANT 232. INDIA AND PAKISTAN. *Three hours credit.*

A study of modern ethnic populations of Indian, Pakistan and Ceylon, as well as a review of their ancient cultural heritage and religion.

ANT 233. SOUTHEAST ASIA. *Three hours credit.*

A study of modern ethnic populations and primitive peoples inhabiting Burma, Thailand, Laos, Cambodia and Vietnam, as well as the Philippine Islands and Indonesia.

ANT 240. OLD WORLD ARCHAEOLOGY I. *Four hours credit.*

The development of Paleolithic, Mesolithic, Neolithic, and The Age of Metal, Cultures of Europe, Africa, and Asia, emphasizing the interpretation of archaeological data, Pleistocene geology, and chronology.

ANT 241. OLD WORLD ARCHAEOLOGY II. *Four hours credit.*

A survey of the prehistoric foundations and cultural development of civilizations in Egypt, the Near East, and the Indus Valley, as revealed by major archaeological discoveries; theories of cultural evolution and diffusion.

ANT 242. ARCHAEOLOGY OF MEXICO. *Four hours credit.*

A comparative study of cultural development in ancient Mexico and Central America with emphasis on agricultural beginnings, settlement patterns and urbanization, hieroglyphics, calendrical systems, and religious activities. A thorough examination of Archaic, Toltec, Aztec, and Maya cultures.

ANT 243. ARCHAEOLOGY—FIELD METHODS. *Two-eight hours credit.*

Techniques of archaeological investigation; field surveying and recording of excavated materials; proper handling and preservation of specimens in the field and laboratory; etc. Course involves off-campus archaeological research.

ANT 245. PROBLEMS IN SOUTHWEST ARCHAEOLOGY. *Three hours credit.*

Examination of special problems in the prehistory and early historic development of cultures in the Greater Southwest. Subject emphasis will vary from year to year, according to student interest, but in all cases will involve analysis of published materials and a critical survey of relevant archaeological data.

ANT 246. PROBLEMS IN PLAINS ARCHAEOLOGY. *Three hours credit.*

Examination of special problems in the prehistory and early historic development of cultures in The Great Plains. Subject emphasis will vary from year to year, according to student interest, but in all cases will involve analysis of published materials and a critical survey of relevant archaeological data.

ANT 247. ARCHAEOLOGY OF SOUTH AMERICA. *Three hours credit.*

Ancient man, and the development of prehistoric Indian cultures in South America. Discussion of archaeological centers, with analysis of ceramics, stonework, art styles, etc. Particular emphasis will be devoted to the Andean Highlands and its influence on cultures elsewhere.

ANT 250. ANTHROPOLOGICAL LINGUISTICS. *Four hours credit.*

The study of speech and language within the context of anthropology. Cognitive categories formed through language, the nature of language, cultural focus in language, linguistic change.

ANT 251. PHONEMIC ANALYSIS. *Four hours credit.*

Phonemic analysis of language; anthropological field methods involving language learning.

ANT 270. SURVEY OF ANTHROPOLOGICAL THEORY. *Three hours credit.*

Seminar on the development of anthropological theory from Tylor to the present. Includes cultural evolution, diffusion and historical reconstruction, functionalism, and psychologically oriented theories.

ANT 280. ENCULTURATION. *Four hours credit.*

A study of the patterned interactions by which an individual becomes oriented to his culture, and through which he is prepared to perform adequately as an adult member of his society. Comparison of the enculturation process in selected nonliterate societies.

ANT 281. ACCULTURATION. *Four hours credit.*

The study of cultures in contact and the influences they have one upon the other.

ANT 283. PRIMITIVE RELIGIONS. *Three hours credit.*

The religions of the peoples not involved in the Indic complex of Hindu-Buddhist or the Judaic tradition of the Mid-East.

ANT 284. ANTHROPOLOGICAL THEORY I. *Three hours credit.*

A seminar on the theories of cultural analysis and development of skills for gathering cultural data. Examination of observational and analytical procedures. Recording and analysis of formal and informal behavioral sequences. Formulation of problems of relationships between culture patterns.

ANT 285. PRINCIPLES OF SOCIAL ORGANIZATION. *Four hours credit.*

Basic principles of social organization in human societies, especially kinship and associated phenomena. Theory and comparative data are drawn primarily from studies of non-western societies including many from Africa, Oceania, and the Americas.

ANT 290. INTRODUCTION TO THE CONCEPT OF CULTURE. *Three hours credit.*

Seminar on the development and uses of the concept of culture as an important working tool for understanding and interpreting the varieties of human culture. This course is designed for students on an advanced level who need a concept of Cultural Anthropology. May not be taken by students who have had ANT 20.

ANT 299. SPANISH AND MEXICAN-AMERICAN CULTURES IN AMERICAN SOUTHWEST. *Three hours credit.*

Historical development of Spanish Colonial and Mexican-American cultures including patterns of family structure, health practices and folk medicine, religious patterns, value systems, etc. Patterns are examined in light of current problems.

ANT 323. SPANISH-AMERICAN CULTURE. *Three hours credit.*

The Spanish culture as it was brought to the Americas and a study of the resulting amalgamation that produced the Spanish-American and Mexican-American cultures of today.

ASTRONOMY

AST 261. PRINCIPLES OF ASTRONOMY I: SOLAR SYSTEM. *Four hours credit. (Three hours lecture, two hours laboratory.)*

A study of the evolution of the science of astronomy, Newton's Laws and gravitation, the research tools of astronomy, and the observed characteristics of the various members of our solar system. Required of earth science majors. Students cannot receive credit for both AST 261 and 166.

AST 262. PRINCIPLES OF ASTRONOMY II: STELLAR. *Three hours credit.*
Prerequisite, AST 261. A continuation of the study of astronomy as begun in AST 261. The subjects of stellar distances, brightnesses, spectra, sizes, populations, evolution, energy, the interstellar medium, and cosmology will be investigated. Further attention will also be devoted to our nearest star, the Sun.

AST 263. OBSERVATIONAL ASTRONOMY. *Four hours credit. (Two hours lecture, six hours laboratory.)*

Prerequisite, AST 166 or 262. This study is directed toward acquiring the knowledge, observational experience, and skills needed for the operation of a variety of

popular modest telescopes, and an appreciation of the design, limitations, and state of development of the finest telescopes.

AST 264. SPACE SCIENCE. *Three hours credit.*

Prerequisite, AST 262. A study of man's exploration of space, the anticipated and discovered characteristics of outer space in the vicinity of a variety of astronomical bodies, mainly concentrating on our solar, planetary and lunar neighbors.

AST 265. ASTROPHYSICS. *Three hours credit.*

Prerequisites, PHYS 68, 165, MATH 34, or consent of instructor. Physics and mathematics applied in an astronomical setting. Emphasis will be placed on the interiors and atmospheres of stars.

AST 292. ASTRONOMICAL BASIS OF EARTH SCIENCE. *Three hours credit.* (NSF In-Service Institute)

The Moon, Solar System, Stars, and Cosmology will be emphasized in lecture and laboratory. For the topics outlined above, the age, composition, origin, and methods of study will be investigated.

AST 362. COSMOLOGY AND COSMOGONY. *Three hours credit.*

Prerequisite, AST 262. A study of the origin, the distribution and behavior of matter and systems thereof, in the universe. Also a study of the paradoxical observations and theories that suggest the intelligence, ingenuity, and sensitivity of man may be inadequate to comprehend our universe despite its apparent limited successes. Some attention will also be given to the question of other intelligent life in the universe.

BIOLOGY

BIO 206. CONSERVATION OF NATURAL RESOURCES. *Four hours credit.*

A study of the relation of natural resources to the development of man and his culture. Units of study are organized on soil, water, forest and forest products. Range management, wildlife, and mineral resources are also covered. The emphasis throughout is on their relation to man.

BIO 218. BIOLOGICAL MICROTECHNIQUE. *Three hours credit. (Six hours laboratory.)*

Prerequisite, BIO 1, 2, 3. The skills of killing, staining, and preparing plant and animal tissues for microscopic study.

BIO 250. CELL PHYSIOLOGY. *Five hours credit. (Three hours lecture, four laboratory.)*

Prerequisites, BIO 1, 2, 3, CHEM 42 or 141. A course in general biological principles relating cell structure to function. The topics discussed include genetic control of cell activity, the molecular basis of cell metabolism, energy transformations within the cell, cell division and homeostatic regulation of the cell environment.

BIO 251. EVOLUTION. *Three hours credit.*

This course is designed as a study of the processes of change of living organisms through time, and to show how genetic variations are related to natural selection and formation of species. Some time is devoted to consideration of the impact of the theory of evolution on the biological sciences since Darwin's time.

BIO 253. HUMAN GENETICS AND EUGENICS. *Three hours credit.*

Prerequisite, BIO 152. A survey of the principles of human heredity together with a consideration of their significance in the problems of the world today. The importance of human genetics in marriage counseling and in medical or legal practice is included.

BIO 254. AQUATIC BIOLOGY. *Five hours credit. (Three hours lecture, four hours laboratory.)*

Prerequisites, BIO 1, 2, 3. A course in the study of fresh water plants and animals of the Rocky Mountain Region. Emphasis will be upon methods of collecting, classification, ecological relations, and economic importance of the fresh water biota. Field trips arranged. *Collecting permits are need.*

BIO 260. MICROBIOLOGY. *Five hours credit. (Three hours lecture, four hours laboratory.)*

Prerequisite, CHEM 42 or 141. A basic course in bacteriology with emphasis on the structure, function, physiology and identification of bacteria and their relationships to other organisms.

BIO 261. MEDICAL AND PUBLIC HEALTH MICROBIOLOGY. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisite, CHEM 147, ZOO 117. This course places emphasis on the micro-organisms of public health significance, their detection, the diseases they cause and treatment of these diseases. The course is primarily designed for students in nursing, pre-medicine, pre-dentistry, and pre-veterinary medicine.

BIO 295. TECHNIQUES OF BIOLOGICAL PREPARATION. *One hour credit. (Three hours laboratory.)*

Prerequisite, senior classification. This is a course designed to acquaint the student with the techniques of laboratory preparation and biological investigation. Emphasis is placed on instrumentation and methods of preparing culture media, experimental solutions, and living material. Required of all senior biology majors; to be taken concurrently with SCED 140.

BIO 297. LITERATURE OF RESEARCH. *One hour credit.*

Prerequisite, junior classification. A course designed to acquaint the student with the preliminary procedures in scientific research. Techniques of problem delineation, literature survey and synthesis of data are stressed. Credit not allowed for graduate students. This course is a prerequisite for BIO 298.

BIO 298. SEMINAR IN RESEARCH. *One hour credit.*

Prerequisites, BIO 297 and junior classification. This is a course designed to acquaint the student with the values and techniques of research in biology. An original research project is required. Credit not allowed for graduate students. (A continuation of the research initiated in BIO 297.)

BIO 299. INVESTIGATIONS IN BIOLOGY. *Maximum five hours credit.*

Prerequisite, Consent of Instructor. An introduction to the theories and practice of research in the biological sciences. A problem will be selected in one of the following fields: animal ecology, aquatic biology, embryology, bacteriology, mycology, genetics, animal physiology, plant physiology, plant ecology, ornithology, invertebrate zoology, vertebrate zoology, parasitology, vertebrate anatomy, upon consultation with the professor who specializes in that area. Original research will be conducted by the student and final report will be submitted by him to the supervising instructor.

BIO 310. CYTOLOGY. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisites, BIO 1, 2, 3. Advanced study of cells with special reference to morphology, cytochemistry and physiology. This study will include the cytoplasmic organelles and the nucleus.

BIO 350. SEMINAR IN BIOLOGICAL SCIENCES. *One hour credit.*

Prerequisites, BIO 1, 2, 3. A study of current research and literature in a field of biological interest. One quarter each will be devoted to botany, zoology, and biological science. The field will be selected by the biology department. Maximum three credit hours.

BIO 357. BIOLOGICAL RESEARCH. *Five hours credit. (Two hours lecture, six hours laboratory.)*

Prerequisites, BIO 1, 2, 3. Designed to give the student actual practice in planning, executing, and presenting the results of a problem in the biological sciences.

Each student selects a problem and carries it out through original research in the laboratory or field. He learns how to prepare and give reports of his results both in written and oral form. Required of all graduate students in biological science.

BIO 359. RADIATION BIOLOGY. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisite, BIO 1, 2, 3. A course dealing with the use of radiation-measuring devices, radioisotope-handling techniques, and the physiological effects of beta, gamma, and neutron irradiation on plants and animals.

BIO 361. PATHOGENIC MICROBIOLOGY. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisites, BIO 1, 2, 260, PHYS 50, CHEM 147, and MATH 24, or consent of the instructor and the Chairman of the Biological Science Department. A study of the pathogenic bacteria, viruses, rickettsiae, fungi and protozoa, primarily in man and higher vertebrates, including the infectious processes, host resistance, mechanisms of transmission, virulence, chemotherapy and methods of detection and isolation. This course is suggested for upper division undergraduates and teachers and graduate students interested in the medical and public health aspects of microbiology.

BOTANY

BOT 203. BIOLOGY OF MICROORGANISMS. *Four hours credit. (Three hours lecture, three hours laboratory.)*

A survey of microorganisms with emphasis on basic principles and techniques of microbiology as well as the role of microorganisms in nature, industry, and disease. Credit not allowed for biology majors.

BOT 220. ECONOMIC BOTANY. *Two hours credit.*

A study of the plants that directly affect the welfare of man including plants that supply our food, drugs, fibers, naval stores, wood, dyes, insecticides and other useful products. Each plant source is briefly considered as to its classification, structure and ecological requirements.

BOT 221. PLANT ANATOMY. *Five hours credit. (Three hours lecture, four hours laboratory.)*

Prerequisites, BIO 1, 2. A study of the anatomy of plants with emphasis on the seed plants. Careful consideration is given to the various tissues as to their origin, development, and structure as related to their function. Some consideration is given to the evolution of tissues in plants.

BOT 222. GENERAL PLANT PHYSIOLOGY. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisites, BIO 1, 2. CHEM 42 or 141. A course dealing with the fundamental principles of growth and development, absorption and utilization of water and minerals, photosynthesis, translocation, respiration, and chemical composition of plants.

BOT 223. MORPHOGENESIS OF THE NONVASCULAR PLANTS. *Four hours credit. (Three hours lecture, three hours laboratory.)*

Prerequisite, BIO 1, 2, 3. Structure, morphogenesis and phylogenetic relationships of the algae, fungi, bryophytes and mosses.

BOT 224. MORPHOGENESIS OF THE VASCULAR PLANTS. *Four hours credit. (Three hours lecture, three hours laboratory.)*

Prerequisite, BIO 1, 2, 3. Structure, morphogenesis and phylogenetic relationships of the ferns, gymnosperms and angiosperms.

BOT 227. PLANT TAXONOMY. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisites, BIO 1, 2. An introductory course concerned with recognition and identification of plants at the species and family levels. Use of keys, manuals, and collecting techniques.

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BOT 229. PRINCIPLES OF PLANT CULTURE. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisites, BIO 1, 2. A study of greenhouse and garden culture of the higher plants. Emphasis will be on the recognition and control of plant diseases, soil preparation, propagation techniques, and the control of insects.

BOT 240. PLANT ECOLOGY. *Five hours credit. (Three hours lecture, four hours laboratory.)*

Prerequisites, BIO 1, 2. A study of plant ecosystems and the interrelationships of the organisms therein as they are affected by the factors of the environment. Field studies are made on the plains and in the mountains.

BOT 320. PLANT GROWTH AND DEVELOPMENT. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisites, BIO 1, 2. A study of the growth cycles of plants in the laboratory and field as the cycle may be affected by external and internal conditions. The effect of auxins is a principal feature of the laboratory work as these compounds condition general growth, curvatures and movements. Practical problems connected with fruit setting, defoliation, herbicides, and other physiological phenomena are considered.

BOT 322. PLANT METABOLISM. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisites, BIO 1, 2, CHEM 147. An intensive study of the metabolic activities of the plant from those of the organelles of the individual cell to those of the integrated organs of the entire higher plant.

BOT 323. PLANT GEOGRAPHY. *Three hours credit.*

Prerequisite, BOT 227 or 240. A study of the floras of the past and present, and of the factors that have affected their distribution.

BOT 324. MYCOLOGY. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisite, BIO 1, 2. A survey of the groups of fungi including taxonomy, phylogeny, physiology, reproductive patterns and cultural techniques.

BOT 327. RESEARCH METHODS IN BOTANY. *Three hours credit. (One hour lecture, four hours laboratory.)*

Prerequisites, BIO 1, 2, BOT 222. A study of the techniques of research in botany with application to a particular problem chosen by the student.

BOT 341. PHYSIOLOGICAL PLANT ECOLOGY. *Five hours credit. (Three hours lecture, four hours laboratory.)*

Prerequisite, BOT 240. A study of the interrelations between the individual plant and the environment including soil, climatic and biotic factors. The responses of plants to such factors are studied primarily under the controlled conditions of the greenhouse and the growth chamber.

BUSINESS

BUS 200. WORKSHOP. *Maximum of nine hours credit.*

Special workshops or short courses in various content area of business will be offered during summers and other quarters as the need and opportunity arises. These workshops will stress specialized areas of various departments in business. Not more than three of these courses may be applied to any one degree.

BUS 205. THE CONSUMER IN OUR ECONOMY. *Three hours credit.*

Prerequisites, BUS 1, ECON 30. A course designed to look into the theories of consumer behavior and what the consumer can do to improve his position in the American economy. Consumption in general, national income, and government protection of the consumer are general topics discussed.

BUS 221. ADVANCED ACCOUNTING. *Four hours credit.*

Prerequisite, BUS 120. This course includes a study of the accounting problems caused by multiple proprietorship—partnerships, corporations, and business combinations.

BUS 223. GOVERNMENTAL AND INSTITUTIONAL ACCOUNTING. *Four hours credit.*

Prerequisite, BUS 21. Accounting principles and procedures relating to schools, hospitals, and other non-profit institutions and to cities, counties and other governmental units.

BUS 225. ADVANCED ACCOUNTING PROBLEMS. *Four hours credit.*

Prerequisites, BUS 121, BUS 221. An advanced course in Accounting problems and theory emphasizing the more complex problems associated with partnerships, parent and subsidiary relationships, consolidations, liquidations, and current developments in accounting practices. Includes as an integral part of the subject matter, a review of recent C.P.A. examinations.

BUS 227. AUDITING. *Four hours credit.*

Prerequisite, BUS 121, BUS 191. This course involves a study of professional ethics and legal responsibility of public accountants, generally accepted accounting principles, and auditing procedures.

BUS 228. INCOME TAX ACCOUNTING I. *Three hours credit.*

A study of the basic rules and regulations of Federal income taxation of individuals. Includes as an integral part of the subject matter: tax planning for individuals in such areas as standard vs itemized deductions, joint vs separate returns, importance of distinguishing between deductions for adjusted gross income and deductions from adjusted gross income, and capital gain income vs ordinary income.

BUS 229. INCOME TAX ACCOUNTING II. *Three hours credit.*

Prerequisite, BUS 228. A continuation of BUS 228, with emphasis on federal income tax rules applicable to partnerships and corporations.

BUS 231. REAL ESTATE LAW. *Two hours credit.*

This course is concerned with basic terminology, concepts, and relationships involving purchaser, seller, broker, builders, lending agencies, administrative groups, and landlord and tenant. Practical aspects of title, building contracts, loans, deeds, liens, restrictions, zoning, eminent domain, escrow, and statutory requirements will be included.

BUS 233. LIFE INSURANCE LAW AND COMPANY OPERATION. *Three hours credit.*

In this course the following legal topics as applied to life insurance will be discussed and studied: law of contract and agency, the life insurance contract, policy provisions, the contract in operation, settlement options, and beneficiary designations. Company organization, operation, investments will be studied. (CLU Course 2)

BUS 239. PROPERTY INSURANCE LAW. *Three hours credit.*

This course provides a review of basic principles of business law and applies them specifically to property and casualty insurance practices and problems. Special attention is given to the law of contracts as applied to insurance contracts, agency insurance, and the law of liability as resulting from negligence. (C.P.C.U. Part IV)

BUS 240. INTRODUCTION TO INSURANCE. *Three hours credit.*

This course deals with the basic principles of insurance and risk. Various kinds of insurance are discussed; the primary objective of the course is an orientation to the many kinds of insurance and their purposes.

BUS 241. LIFE AND HEALTH INSURANCE. *Three hours credit.*

This course is designed to provide the student with a firm foundation in the many details of life and health insurance. Topics considered will include: individual

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life contracts, special and annuity contracts, disability income, medical expense insurance, probability in life insurance, reserves, nonforfeiture values, and dividends. (CLY Course 1)

BUS 242. SOCIAL AND GROUP INSURANCE. *Three hours credit.*

Prerequisite, BUS 241. This course provides a background in the large area of social insurance and also group insurance. Various kinds of group policies are discussed, including life, health, etc.

BUS 243. PENSION PLANNING. *Three hours credit.*

As part of a comprehensive insurance program, the following topics are discussed concerning pension planning: basic features of a pension plan, tax considerations, cost considerations, allocated funding instruments, unallocated funding instruments, profit sharing, and tax sheltered annuities. (CLU Course 4)

BUS 244. INSURANCE AND TAXATION. *Three hours credit.*

Prerequisite, BUS 241. The effect of income, estate, and gift taxation on an insurance program are discussed in this course. These taxes are considered for the individual and the business enterprise also.

BUS 245. BUSINESS INSURANCE. *Three hours credit.*

Prerequisite, BUS 241. Various kinds of insurance for the business firm are studied. The special needs of the individual proprietor, partnerships, and corporations receive attention. Special disability insurance, life insurance on key men, and split dollar plans are discussed. (CLU Course 9)

BUS 246. ESTATE PLANNING AND LIFE INSURANCE. *Three hours credit.*

Topics studied include: disposition of property in estates and trusts, administration of estates, federal estate taxation, federal gift taxation, planning through trusts and wills, and the place of life insurance in estate planning. (CLU Course 10)

BUS 247. ANALYSIS OF INSURANCE FUNCTIONS I. *Three hours credit.*

This course covers in detail an analysis of the various insurance functions especially applicable to property and casualty insurance. Some of the topics covered will be underwriting practices, loss prevention, rate making, regulation of insurance, types of insurers, reserves necessary, human motivation, professional ethics, and risk management. (C.P.C.U. Part II)

BUS 248. ANALYSIS OF INSURANCE FUNCTIONS II. *Three hours credit.*

A continuation of BUS 247. (Second part of C.P.C.U. Part II)

BUS 252. OFFICE MANAGEMENT. *Three hours credit.*

Prerequisite, BUS 50. The emphasis in this course is on the functions of the office and office organization, work in the office, office layout, equipment supplies and forms; personnel problems in the office; and costs and control of office work.

BUS 253. PERSONNEL MANAGEMENT. *Five hours credit.*

A study of the principles and techniques of personnel management with attention given to their psychological foundations.

BUS 256. BUSINESS POLICIES AND MANAGEMENT. *Three hours credit*

Prerequisite, Business Core requirements completed. A course for the senior student designed to integrate the various functional areas of business in terms of policy level decision-making. Cases are emphasized.

BUS 257. PRODUCTION MANAGEMENT. *Three hours credit.*

A course which emphasizes the methods of production control in industrial processes. The elements of control applied in planning, scheduling, routing of the product-in-process, and the appraisal and measurement of industrial performance as applied by conventional administrative methods, assisted by data processing and computer-controlled processes.

BUS 260. MARKETING STRATEGY. *Four hours credit.*

Prerequisite, BUS 60. This course is designed to familiarize the student with operations of marketing organizations. The understandings and administrations of marketing strategy with regard to consumer analysis, product planning, and promotion. Readings and cases will be used.

BUS 261. SALES MANAGEMENT. *Three hours credit.*

Prerequisite, BUS 61. A study of sales management, the major problems involved, and the relationship of sales management to the total business operation.

BUS 262. MARKET ANALYSIS AND RESEARCH. *Four hours credit.*

Prerequisite, BUS 60 and BUS 192. This course is designed to acquaint the student with the typical marketing problems on which research can be used effectively. Analysis of basic research designs and basic methods of collecting data will be covered. Special emphasis will be placed on motivational research, product research, advertising research, marketing research, consumer-demand research and sales control research. Cases are used for discussions.

BUS. 263. ADVERTISING STRATEGY. *Three hours credit.*

Prerequisite, BUS 162. A study of current advertising strategy, and the functions of advertising departments and agencies leading into the development and management of a complete advertising program.

BUS 265. MARKETING PROBLEMS. *Four hours credit.*

Prerequisites, BUS 260 and 262. A course dealing with the problems of marketing managers. This course is designed to acquaint the student with current marketing problems. Included will be a study of business cases and/or business games and a current reading of related materials.

BUS 267. PHYSICAL DISTRIBUTION. *Three hours credit.*

Prerequisites BUS 60. A systems approach to the marketers' problems of physical distribution; including inventories transportation, warehousing, packaging and order processing.

BUS 268. INDUSTRIAL MARKETING. *Three hours credit.*

Prerequisite, BUS 60. This course deals with the marketing of industrial goods. The major topics are: planning products and markets, planning strategy, pricing policies, managing distribution, and managerial control.

BUS 269. INTERNATIONAL MARKETING. *Three hours credit.*

Prerequisite, BUS 60. Consideration of the global or multinational aspect of business enterprise and its effect on marketing problems and management. Factors of international marketing will be considered through the various studies of buying and selling processes in the countries of the world.

BUS 270. FINANCIAL MANAGEMENT. *Three hours credit.*

Prerequisite, BUS 170. In this course the problems of financing business enterprise are studied. The scope includes working capital financing, budgeting, analyzing financial statements, and intermediate and long-term financing. Cases will be used to illustrate.

BUS 271. INVESTMENTS. *Three hours credit.*

Prerequisite, BUS 170 or permission of instructor. The course is designed to provide the individual investor with a working basis for investment policy. A study will be made of topics such as how to develop a logical investment program, how to recognize and minimize investment risks, how to formulate decisions, and how to take advantage of investment opportunities.

BUS 272. PRINCIPLES OF REAL ESTATE. *Three hours credit.*

The course is designed to be a beginning course in the real estate area. Theories and practices that have a significant influence on the real estate market both locally and nationally are discussed. The course will be useful to the consumer, the practitioner in real estate, and the general employee in business.

BUS 276. CREDIT MANAGEMENT. *Three hours credit.*

This course provides information and understanding of the credit operations of business for both students of business and practicing businessmen. The various kinds of credit (consumer and commercial) are discussed, and the management of credit by business firms is given emphasis in the course.

BUS 281. ELECTRONIC DATA PROCESSING—FORTRAN. *Three hours credit. (Laboratory arranged.)*

Prerequisite, BUS 80 or equivalent. This course includes an introduction to electronic computers and to FORTRAN programming. The student's work involves analyzing and developing a program relative to his field of interest.

BUS 283. ELECTRONIC DATA PROCESSING—COBOL. *Three hours credit. (Laboratory arranged.)*

Prerequisite BUS 80 or equivalent. This course includes an introduction to electronic computer operation and to COBOL programming. The student's work involves analyzing and developing programs relative to his field of interest.

BUS 285. ELECTRONIC DATA PROCESSING—ADVANCED FORTRAN. *Three hours credit. (Laboratory arranged.)*

Prerequisite, BUS 281. Advanced computer programming techniques with special reference to business problems and applications. This course will require approximately 3 hours of lab per week. This course will make repeated use of the principles presented in 281.

BUS 288. SYSTEMS AND PROCEDURES. *Three hours credit.*

Prerequisite, BUS 81 and 281. The relationship of systems and procedures to policies and needs of management; job characteristics, management audit; flow charting. Analysis of operations by a study of work simplification, work measurement, work sampling. Current development in human engineering, job design, forms control, records management, and company manuals.

BUS 289. ADVANCED SYSTEMS ANALYSIS. *Three hours credit. (Laboratory arranged.)*

Prerequisite, BUS 288. This course introduces the student to the methodology of systems analysis by the use of models and computer simulation. The primary emphasis will be on decision making with special attention devoted to automated applications.

BUS 290. INTERMEDIATE OPERATIONS RESEARCH. *Three hours credit.*

Prerequisite, BUS 190 or permission of the instructor. This course is designed to provide theoretical and practical foundations for the use of linear programming as a "systems approach" to management decision making. The course is quantitative analysis distilled from and based on the descriptive and qualitative aspects of management problems.

BUS 301. FOUNDATIONS OF BUSINESS. *Three hours credit.*

A study of the major ideas sustaining business enterprise in the Western World. Discussion of the various factors which influence the modern business world: philosophical, political, economic, and social. Primarily a readings and discussion course for graduate students to provide a background for other business content courses.

BUS 320. MANAGEMENT ACCOUNTING. *Five hours credit.*

The use of accounting for control and planning will be emphasized after a review unit on accounting principles. Case problems will be used.

BUS 321. SEMINAR IN FINANCIAL ACCOUNTING THEORY. *Three hours credit.*

Prerequisite, consent of instructor. A study of the development and present status of financial accounting theory with emphasis on current literature in this area.

BUS 330. APPLIED BUSINESS LAW. *Five hours credit.*

Review and application of legal concepts, including areas of immediate concern such as tort law, professional negotiations, collective bargaining, arbitration, and mediation. Course is designed for school administrators, teachers, and business students, and need not be preceded by an undergraduate sequence.

BUS 350. ADMINISTRATIVE THEORY. *Three hours credit.*

This course involves research and seminars on the principles and advanced theory of business functions and the relationship of the common elements of

these functions to the responsibilities of top management for planning, organizing and controlling the operations of a business.

BUS 353. SEMINAR IN PERSONNEL MANAGEMENT. *Two hours credit.*
Examination of managerial policies and practices in light of how people think and feel and why they act as they do. Treatment is given to organizational and environmental change including managerial effectiveness, the interpersonal relations, understanding the self and the individual, and furthering the listening techniques. Experiments are undertaken in leadership.

BUS 360. SEMINAR IN MARKETING THEORY. *Three hours credit.*
Prerequisite, BUS 60. A critique of the current theories in marketing from an historical perspective and an analysis of their applicability to marketing strategy. Contributions made by "outside" disciplines will be emphasized.

BUS 365. ADVANCED MARKETING MANAGEMENT. *Three hours credit.*
Prerequisites, BUS 260, 262, 265, or consent of the instructor. A seminar course for graduate students designed to study the techniques available to solve marketing management problems.

BUS 390. OPERATIONS ANALYSIS. *Three hours credit.*
Prerequisite, BUS 190. A course to orient the manager in the principles, theory, and scope of analysis of business problems utilizing mathematical concepts. The course includes the selection of variables, formulation of the problem in mathematical and statistical terms, solution, and test of the results.

BUSINESS EDUCATION

BUED 230. ECONOMIC EDUCATION SEMINAR. (ATE) *Three hours credit.*
Prerequisites, ECON 30, 102. A study of the conceptual framework of economic education for potential teachers, administrators, curriculum specialists and guidance personnel.

BUED 266. DEVELOPMENT OF DISTRIBUTIVE EDUCATION INSTRUCTIONAL MATERIALS. *Two hours credit.*
This course is designed to offer a brief analysis of instructional materials, their courses, and how to use them. Students will develop materials for use in their own instructional programs.

BUED 280. WORKSHOP IN BUSINESS EDUCATION. *Maximum of nine hours credit.*
Through cooperative effort, problems in business education will be solved. Not more than three of these courses may be applied to any one degree.

BUED 281. WORKSHOP IN DISTRIBUTIVE EDUCATION. *Maximum of nine hours credit.*
An intensive course designed primarily for distributive education coordinators.

BUED 353. IMPROVEMENT OF INSTRUCTION IN BOOKKEEPING AND ACCOUNTING. *Two hours credit.*
The instruction in this course is planned primarily for those who have had experience teaching bookkeeping or accounting. Objectives, content, good teaching practices, and evaluation as well as the specific teaching problems of the members of the class are emphasized.

BUED 355. IMPROVEMENT OF INSTRUCTION IN DISTRIBUTIVE EDUCATION. *Three hours credit.*
Important procedures and effective techniques used in teaching high school cooperative classes in the distributive occupations and in evening classes for employed sales and supervisory personnel.

BUED 356. IMPROVEMENT OF INSTRUCTION IN SHORTHAND. *Two hours credit.*

Primarily for experienced teachers who have had an undergraduate methods course in shorthand. Emphasis is upon research in learning and on applications of this research to the teaching of shorthand.

BUED 357. IMPROVEMENT OF INSTRUCTION IN TYPEWRITING AND OFFICE PRACTICE. *Three hours credit.*

Primarily for experienced teachers who have had an undergraduate methods course in typewriting. Emphasis is upon improved methods of instruction in the teaching of typewriting.

BUED 358. IMPROVEMENT OF INSTRUCTION IN BASIC BUSINESS. *Two hours credit.*

This course emphasizes the teaching of general business with some emphasis on the teaching of business law, consumer education, and advanced general business. Individual and group work on objectives, content, teaching practices, and evaluation.

BUED 370. ADMINISTRATION AND SUPERVISION OF BUSINESS EDUCATION. *Three hours credit.*

This course deals with the problems of administrators and supervisors who are interested in business education as well as heads of departments of business education.

BUED 371. TESTS AND MEASUREMENTS IN BUSINESS EDUCATION. *Five hours credit.*

A survey of tests and measurements in business education, their uses and methods of construction, and presentation of necessary statistical tools for test interpretation especially applicable to business education. A study is made of prognostic tests, vocational aptitude tests, and published achievement tests.

BUED 372. CURRICULUM CONSTRUCTION IN BUSINESS EDUCATION. *Five hours credit.*

High school curricula and courses of study in business subjects will be planned and developed in this course. The history, present status, philosophy, and trends of curriculum construction will be discussed.

BUED 373. CURRENT PROBLEMS IN BUSINESS EDUCATION. *Three hours credit.*

Current problems in business education are studied and discussed by individuals, committees and the class.

BUED 374. COOPERATIVE PROGRAMS IN BUSINESS EDUCATION. *Two hours credit.*

The aim of the course is to define cooperative programs in business education, to describe the typical types, to explore basic philosophies, and to clarify the nature and scope of cooperative programs by portraying its development in schools.

BUED 401. ANALYSIS OF RESEARCH IN BUSINESS EDUCATION. *Five hours credit.*

An analysis of the best studies that have been done in business education. A study will be made of research techniques as well as the findings of these research studies. Emphasis will be placed upon determining further needed research.

BUED 402. ISSUES AND TRENDS IN BUSINESS EDUCATION. *Three hours credit.*

A seminar course designed to have individual and group analysis and discussion of the various issues in business education. Trends in the field will also be analyzed and clarified.

BUED 403. POST HIGH SCHOOL BUSINESS EDUCATION. *Three hours credit.*

A course planned for those teaching or planning to teach business or business education in post high school institutions—public and private business schools,

junior colleges, and colleges educating business teachers. Curriculum and instructional practices and problems are emphasized.

CHEMISTRY

CHEM 240. FOOD ANALYSIS. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisite, CHEM 42. This course deals with some of the techniques of qualitative and quantitative analysis of foods for certain inorganic and organic constituents.

CHEM 241. ELEMENTS OF GLASS BLOWING. *One hour credit. (Three hours laboratory.)*

Demonstrations and practice in the elementary operations of glass blowing; the construction and repair of borosilicate glass laboratory equipment.

CHEM 242. ORGANIC CHEMISTRY. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisite, CHEM 42. A course in organic chemistry for students who have had an introductory course in organic chemistry. Aliphatic and aromatic organic compounds are treated with regard to theory and application. Offered summers only.

CHEM 243. ORGANIC CHEMISTRY III. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisite, CHEM 142 or 242. This course is the last of the series which covers the nomenclature, reactions and electronic theory of the various classes of organic compounds. Aliphatic and aromatic compounds are integrated in this series. Chemistry majors (Arts and Sciences) may also register for CHEM 244 (one hour) concurrently.

CHEM 244. LABORATORY IN ORGANIC CHEMISTRY. *One hour credit. (Three hours laboratory.) (Maximum three hours credit.)*

Organic preparations and qualitative organic analysis constitute the laboratory work.

CHEM 245. QUANTITATIVE ANALYSIS. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisites, MATH 23 and CHEM 41 or 45. Lectures treat the equilibria existing in solutions of acids, bases, and slightly soluble salts, and the application of such equilibria to gravimetric and acid-base and volumetric precipitation analysis. Laboratory work consists of illustrating these three types of analysis. Students having credit in any quantitative analysis course must obtain permission of instructor before enrolling in this course.

CHEM 246. QUANTITATIVE ANALYSIS II. *Five hours credit. (Three hours lecture, six hour laboratory.)*

Prerequisite, CHEM 145. Corequisite, CHEM 282. Special attention is given to the analysis of complex mixtures, and the use of certain analytical instruments.

CHEM 247. ENZYME CHEMISTRY. *Two hours credit.*

Prerequisite, CHEM 147. A study of the structure and function of enzymes with an emphasis on the kinetics and mechanisms of enzyme-catalyzed reactions.

CHEM 248. INORGANIC CHEMISTRY I. *Three hours credit.*

Prerequisite, CHEM 145. This course is an introduction to inorganic chemistry. Literature, atomic structure and chemical bonding will be presented.

CHEM 249. INORGANIC CHEMISTRY II. *Three hours credit.*

Prerequisites, CHEM 248, 282, corequisite, CHEM 283. The chemistry of typical inorganic compounds will be presented. Emphasis will be placed on the relationship of bonding and structure to chemical properties.

CHEM 250. LABORATORY IN INORGANIC CHEMISTRY. *One hour credit. (Three hours laboratory.)*

Prerequisite, CHEM 248. The student will perform experiments which will explore the structure, bonding and chemical properties of inorganic substances.

CHEM 280. ORGANIC QUALITATIVE ANALYSIS. *Three hours credit. (One hour lecture, six hours laboratory.)*

Prerequisite, CHEM 243. This course is an advanced laboratory course in organic chemistry. The identification of organic compounds by classical and modern spectral methods constitutes the laboratory work. Lecture will consider theory and technique of analysis.

CHEM 281. PHYSICAL CHEMISTRY I. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisite, CHEM 142, MATH 33, PHYS 67. Corequisite, CHEM 145. This course is an advanced study of the theoretical principles upon which chemistry is based. The properties of the gaseous, liquid, and solid states, the principles of thermodynamics and thermochemistry and the theories of atomic and molecular structure are considered. The laboratory demonstrates the principles developed in the lecture.

CHEM 282. PHYSICAL CHEMISTRY II. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisite, CHEM 281. This course is a continuation of CHEM 281. The following topics are considered: solutions, homogenous and heterogenous chemical equilibria, and chemical kinetics.

CHEM 283. PHYSICAL CHEMISTRY III. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisite, CHEM 282. This course is a continuation of CHEM 282. Electrochemistry, ionic equilibria, and colloids are considered.

CHEM 284. INSTRUMENTAL METHODS OF ANALYSIS. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisite, CHEM 145. Corequisite, CHEM 283. Lectures will consider the theory and techniques of the analysis of chemical systems by various optical, X-ray and electrical methods of analysis. In the laboratory the student will perform analyses using the colorimeter, spectrophotometer, flame photometer, fluorimeter, infrared spectrophotometer and polarograph.

CHEM 285. CHEMICAL LITERATURE. *One hour credit.*

Prerequisite, CHEM 243. This course covers the use of the library and the function of chemical literature. Problems in the use of the library are assigned.

CHEM 287. PHYSICAL BIOCHEMISTRY. *Four hours credit. (Three hours lecture, three hours laboratory.)*

Prerequisites, CHEM 243, 283 (or taken concurrently.) The physical and organic bases of modern biochemistry will be studied. Enzyme chemistry, the physical chemistry of macromolecules, and the molecular organization of the cell will be emphasized.

CHEM 289. SENIOR RESEARCH. *Two hours credit. (Minimum four hours credit, maximum six hours credit.)*

Prerequisites, CHEM 243, 283. An introduction to research in chemistry. The student will initiate and pursue an independent original investigation. A paper and oral presentation of his work are required. Weekly conferences with instructor are required. The student may earn a maximum of six hours credit.

CHEM 291. STRUCTURE OF MATTER. *Five hours credit. (NSF Summer Institute.)*

This course is designed to review and expand the modern concepts of the structure of matter emphasizing the use of the Periodic Table in correlating and predicting properties of matter. The electron orbitals of atoms will be discussed in connection with electrovalent, covalent, and metallic bond formation. The effect of bond types on the physical and chemical properties of matter will be discussed.

CHEM 292. FUNDAMENTALS OF ORGANIC CHEMISTRY. Four hours credit. (Four hours lecture, three hours laboratory.) (NSF Summer Institute.)

This course is introductory to the chemistry of carbon. The nomenclature of carbon compounds, the common functional groupings, the chemical characteristics of these groupings together with modern theoretical aspects will be studied.

CHEM 293. INTRODUCTORY QUANTITATIVE ANALYSIS. Four hours credit. (Four hours lecture, three hours laboratory.) (NSF Summer Institute.)

This basic course will present the fundamentals of analysis emphasizing the important role of analysis in chemistry. Modern instruments will be used whenever possible.

CHEM 340. PRINCIPLES OF PHYSICAL CHEMISTRY I. Six hours credit. (Five hours lecture, three hours laboratory.)

Prerequisites, one year general chemistry, one year general physics, an introduction to differential and integral calculus, and an introduction to organic chemistry. This course will cover those topics normally taught in an introduction to physical chemistry but with less emphasis on rigorous mathematical proofs and more emphasis on those topics now taught as part of high school chemistry courses. Correlation of our present knowledge of the structure of matter. This course is designed primarily for candidates for teaching degrees.

CHEM 341. PRINCIPLES OF PHYSICAL CHEMISTRY II. Six hours credit. (Five hours lecture, three hours laboratory.)

Prerequisite, CHEM 340. A continuation of CHEM 340.

CHEM 342. SPECIAL TOPICS IN ORGANIC CHEMISTRY. Two hours credit. (Maximum six hours credit.)

Prerequisite, CHEM 243 or consent of instructor. This course is an advanced study of current advances in some selected area of chemistry, for example, carbohydrates, heterocyclic compounds, steroids, natural products, etc. The course primarily covers nomenclature, synthesis, reactions, and recent research in specialized fields.

CHEM 343. STEREOCHEMISTRY OF ORGANIC COMPOUNDS. Three hours credit.

Prerequisites, CHEM 243, 282. An advanced study of the structure of organic compounds and the influence of structure on organic reactions.

CHEM 344. THEORETICAL ORGANIC CHEMISTRY. Three hours credit.

Prerequisites, CHEM 243, 282. An advanced study of organic compounds in which resonance, molecular-orbital theory, and aromaticity are discussed.

CHEM 345. REACTIONS AND REACTION MECHANISMS IN ORGANIC CHEMISTRY. Three hours credit.

Prerequisites, CHEM 243, 282. An advanced study of the reactions of organic compounds, and the inductive, resonance, and steric effects which influence their reaction mechanisms.

CHEM 346. SEMINAR IN CHEMISTRY. One hour credit. (Maximum six hours credit.)

This course gives the graduate student an opportunity to report on some topic of interest treated in recent literature, as well as profit by the reports of others.

CHEM 347. SPECIAL TOPICS IN ANALYTICAL CHEMISTRY. Two hours credit. (Maximum six hours credit.)

Prerequisites, CHEM 145, 281. This course will cover special topics dealing with analytical chemistry in the areas of quantitative organic chemistry, electrochemistry and optical methods as research tools in inorganic chemistry.

CHEM 348. SPECIAL TOPICS IN INORGANIC CHEMISTRY. Three hours credit. (Maximum six hours.)

Prerequisite, CHEM 248. This course provides a critical review of current topics in inorganic chemistry.

CHEM 349. ADVANCED INORGANIC CHEMISTRY. *Three hours credit.*
Prerequisite, CHEM 249. Presented in this course is the descriptive chemistry of typical inorganic elements and compounds. Relationships within the periodic classification will be stressed and correlation of the chemistry of the various substances will be related to theoretical concepts treated in CHEM 249.

CHEM 381. CHEMICAL THERMODYNAMICS. *Three hours credit.*
Prerequisite, one year of Physical Chemistry. An advanced study of the fundamental laws of thermodynamics and calculation of the thermodynamic quantities. Mathematical treatment is stressed.

CHEM 382. STATISTICAL THERMODYNAMICS. *Three hours credit.*
Prerequisite, CHEM 381. A course which deals with mathematical probability, fundamentals of statistical mechanics, Boltzmann statistics, partition functions, equilibrium constants in terms of partition functions, heat capacities of gases and solids, and Bose-Einstein and Fermi-Dirac statistics.

CHEM 383. CHEMICAL KINETICS. *Three hours credit.*
Prerequisite, CHEM 283. A consideration of the factors involved in the rate of chemical reactions and the mechanism by which they occur. These concepts are examined from experimental and theoretical points of view.

CHEM 384. CHEMICAL SPECTROSCOPY. *Four hours credit. (Three hours lecture, three hours laboratory.)*
Prerequisites, CHEM 284, 381. Designed to amplify the spectroscopy portion of CHEM 284, this course deals primarily with the application and theory of this important tool in chemical analysis. Emission and absorption spectroscopy are considered but the primary emphasis is on infrared methods. A short section on nuclear magnetic resonance is included.

CHEM 385. ADVANCED PHYSICAL CHEMISTRY. *Three hours credit.*
Prerequisite, CHEM 283. Special topics in physical chemistry are discussed including chemical kinetics, chemistry of macromolecules, heterogeneous catalysis, electrochemistry and experimental study of molecular structure.

CHEM 386. QUANTUM CHEMISTRY. *Three hours credit.*
Prerequisite, CHEM 283. An examination of the principles of quantum mechanics as they apply to wave mechanics and its application to simple physical and chemical systems.

COLLEGE STUDENT PERSONNEL WORK

CSPW 351. PHILOSOPHY AND HISTORY OF COLLEGE STUDENT PERSONNEL WORK. *Three hours credit.*
The philosophy, principles and functions of student personnel work in higher education.

CSPW 352. STUDENT HOUSING. *Three hours credit.*
The organization, practices and problems of student housing services in colleges and universities.

CSPW 353. COLLEGE COUNSELING AND HEALTH SERVICES. *Three hours credit.*
The organization, practices and problems of student counseling service, including health counseling, in higher education.

CSPW 354. ADMISSIONS AND RECORDS. *Three hours credit.*
The organization, practices and problems of the services of admissions and records in colleges and universities.

CSPW 355. STUDENT GOVERNMENT, ACTIVITIES AND SPONSORSHIP. *Three hours credit.*
The organization, practices and problems of student government and activities in college.

CSPW 356. PLACEMENT SERVICE. *Three hours credit.*

The organization, practices, and problems of job placement services in higher education.

CSPW 357. FINANCIAL AIDS. *Three hours credit.*

The philosophy, organization and practices of administering financial aids in higher education.

CSPW 358. SEMINAR IN COLLEGE STUDENT PERSONNEL WORK.
No credit.

Registration in the seminar must be concurrent with registration in each internship experience taken to satisfy degree requirements. The interns will meet once per week in seminar with the faculty of the major.

CSPW 359. INTERNSHIP IN COLLEGE STUDENT PERSONNEL WORK—HOUSING. *Two hours credit.*

CSPW 360. INTERNSHIP IN COLLEGE STUDENT PERSONNEL WORK—HEALTH. *Two hours credit.*

CSPW 361. INTERNSHIP IN COLLEGE STUDENT PERSONNEL WORK—COLLEGE TEACHING. *Two hours credit.*

CSPW 362. INTERNSHIP IN COLLEGE STUDENT PERSONNEL WORK—STUDENT ACTIVITIES. *Two hours credit.*

CSPW 363. INTERNSHIP IN COLLEGE STUDENT PERSONNEL WORK—COUNSELING. *Two hours credit.*

CSPW 364. INTERNSHIP IN COLLEGE STUDENT PERSONNEL WORK—PLACEMENT SERVICES. *Two hours credit.*

CSPW 365. INTERNSHIP IN COLLEGE STUDENT PERSONNEL WORK—DEAN'S OFFICE. *Two hours credit.*

CSPW 366. INTERNSHIP IN COLLEGE STUDENT PERSONNEL WORK—FINANCIAL AIDS. *Two hours credit.*

CSPW 367. INTERNSHIP IN COLLEGE STUDENT PERSONNEL WORK—ADMISSIONS AND RECORDS. *Two hours credit.*

Each internship listed above consists of practical experience and training for a minimum of six hours per week for one quarter. The internship is designed to provide an over-view of the basic service which can be related to a general understanding of college student personnel work. A weekly seminar is held for all interns and must be taken concurrently with each internship.

CSPW 450. THE COLLEGE AND THE STUDENT. *Three hours credit.*

The nature of needs of the young adult as a college student with particular reference to the college environment as it relates to the student.

CSPW 451. ORGANIZATION AND ADMINISTRATION OF COLLEGE STUDENT PERSONNEL WORK. *Three hours credit.*

The organizational and administrative practices of systems for providing student personnel services in higher education.

CSPW 452. CURRENT ISSUES IN COLLEGE STUDENT PERSONNEL WORK. *Three hours credit.*

The current problems and issues affecting student personnel work in higher education. Prerequisite: Permission of the instructor.

CSPW 453. RESEARCH AND EVALUATION IN COLLEGE STUDENT PERSONNEL WORK. *Three hours credit.*

The problems of evaluating student personnel services in higher education, a critical examination of the research that has been reported, and consideration of needed research. Prerequisites: RSM 304 and 305.

EARTH SCIENCE

ESCI 299. SEMINAR IN EARTH SCIENCE. *Two hours credit.*

Prerequisite, consent of student's major adviser. The final course for Earth Science majors in the teacher education program. It will provide students with an opportunity to investigate and discuss earth science topics of special interest beyond the scope of existing departmental course offerings, as well as problems which might be encountered in teaching earth science in the schools. Special attention will be given to the unifying concepts and principles of earth science.

ECONOMICS

ECON 200. SEMINAR IN ECONOMIC THOUGHT. *Three hours credit.*

Prerequisites, ECON 30, 220, 290, or the consent of the instructor. This course is primarily concerned with independent study and limited guided research in the development of economic thought. The group will meet for regular discussions and criticism of their work.

ECON 201. INTERMEDIATE ECONOMIC THEORY. *Three hours credit.*

The purpose of this course is to provide a summary exposition of contemporary economic theory for those students intending to undertake graduate courses in economics. Emphasis is upon value and distribution theory. It is assumed that students will have had an introductory course in economics.

ECON 202. MONEY AND BANKING. *Five hours credit.*

Prerequisite, ECON 30. A study of the origins and present roles of our monetary system, commercial banking and Federal Reserve System.

ECON 205. RUSSIA'S SOVIET ECONOMY. *Three hours credit.*

A synthesis of available knowledge regarding all major sectors of the Soviet economy, particularly as regards their organization and operation.

ECON 210. INTERNATIONAL ECONOMICS. *Three hours credit.*

Prerequisite, ECON 30. Consideration of the theories, policies and practices related to international economics. The course seeks an understanding of the fundamental causal relationships, basic institutions, and unifying concepts which are found in the world economy.

ECON 215. INTERNATIONAL FINANCE. *Three hours credit.*

Prerequisites, ECON 30, 212, or the consent of the instructor. A study of the financial instruments, institutions and organizations which comprise international finance and which assist international trade.

ECON 220. DEVELOPMENTAL ECONOMICS. *Three hours credit.*

Prerequisites, ECON 30, 220, or the consent of the instructor. A study of the economic factors which aid or impair economic development with primary emphasis placed on evolving national economies and regional economic problems of advanced economies.

ECON 230. EUROPEAN ECONOMIC HISTORY. *Three hours credit.*

Prerequisite, ECON 30. A study of the historical origins of the economic institutions of Europe as related to the development of present European economic life.

ECON 233. ECONOMIC COLONIALISM AND IMPERIALISM. *Three hours credit.*

Prerequisites, ECON 30, 231, or the consent of the instructor. A study of the part played by economic doctrines, theories and practices in the expansionary drives to colonialism and imperialism, with primary emphasis given to modern history.

ECON 235. ECONOMIC HISTORY OF THE UNITED STATES. *Three hours credit.*

A review of the historical changes in the major American economic institutions with emphasis on the post-Civil War period.

ECON 238. HISTORY OF ECONOMIC SYSTEMS: SOCIALISM, COMMUNISM, CAPITALISM, FASCISM. *Three hours credit.*

A survey of socio-economic reform movements, including Utopian schemes, mercantilism, monopolistic capitalism, socialism, communism, fascism and modified capitalism.

ECON 240. STATE AND LOCAL FINANCE. *Three hours credit.*

The purpose of this course will be to focus attention upon the mechanisms and the goals of public finance as employment by governments on the state and local level in the U.S. economy.

ECON 241. PUBLIC FINANCE. *Five hours credit.*

Prerequisite, ECON 30. A study of government financing on the federal, state, and local level as it is reflected in expenditures, revenue sources such as taxes, and the problems and solutions of public debt.

ECON 246. INDUSTRY STUDIES. *Three hours credit.*

Prerequisite, ECON 30. This will be a course in the application of basic economic principles. Students should be prepared to do an extensive case study of an industry.

ECON 248. THE ECONOMICS OF PUBLIC UTILITIES. *Three hours credit.*

Prerequisite, ECON 30. A study of public-utility concepts in the American business system and the problems relative to effective regulation and growth of these industries.

ECON 250. NATIONAL INCOME ANALYSIS. *Three hours credit.*

Prerequisite, ECON 30. This course will incorporate major areas of modern aggregate economics analysis. Income measurement and determination of the level of income will be combined with problems of growth and fluctuations.

ECON 251. INTRODUCTION TO QUANTITATIVE ECONOMICS. *Three hours credit.*

Prerequisite, ECON 220 or the consent of the instructor. An introductory course in the use of mathematical techniques in economics. High school algebra and a good background in economic theory would be sufficient preparation.

ECON 252. EMPIRICAL METHODS IN ECONOMICS. *Three hours credit.*

Prerequisite, ECON 30 or consent of the instructor. The course will present an examination of national income accounting practices, compilation of economic statistics, index number computation and related topics. Only elementary statistical background will be needed.

ECON 253. ANALYSIS OF BUSINESS CYCLES. *Three hours credit.*

Prerequisites, ECON 220, 250 or the consent of the instructor. The course will present a theoretical and empirical investigation of economic fluctuations.

ECON 260. LABOR-MANAGEMENT RELATIONS. *Three hours credit.*

A study into the origins of the labor movement and an examination of the impact of trade unionism on contemporary industrial organization.

ECON 270. AGRICULTURAL ECONOMICS. *Three hours credit.*

Prerequisites, ECON 30. A study of the economics of agriculture and the relation of agricultural economic factors to the total modern economy.

ECON 277. GOVERNMENT AND BUSINESS. *Three hours credit.*

Prerequisite, ECON 30. A study of the relation of American public policy to the challenge of industry, labor, agriculture and inflation-depression periods.

ECON 290. HISTORY OF ECONOMIC THOUGHT. *Three hours credit.*

Prerequisite, ECON 30. This course will trace the evolution of economic thinking from the period of the Old Testament up to the present day. Particular attention will be given the roles played by particular "schools" of economic thinkers, the genesis of their ideas and their contributions.

ECON 302. ADVANCED ECONOMICS. *Five hours credit.*

Prerequisite, ECON 30. The purpose of this course is to provide a summary exposition of contemporary economic theory for those students intending to undertake other graduate courses in economics. Emphasis is upon value and distribution theory. It is assumed that students will have had an introductory course in economics.

ECON 310. ECONOMETRICS. *Five hours credit.*

Prerequisite, ECON 30. This is a course characterized by two essential qualities: (1) economic relationships are expressed in mathematical form, (2) numerical estimates are made making use of techniques based upon the theory of probability; the course shall be concerned with econometric models requiring specification, estimation, verification, and prediction.

ECON 322. SEMINAR IN MODERN MICROECONOMIC THEORY. *Three hours credit.*

Prerequisites, ECON 220, 290, or the consent of the instructor. This course will cover some aspects of modern economic theory including old and new welfare economics, linear programming, game theory, theories of imperfect competition.

ECON 324. SEMINAR IN INTERNATIONAL ECONOMICS. *Three hours credit.*

Prerequisite, ECON 30. This course will be primarily concerned with current issues facing nations engaged in international trade. Specific interest will be directed toward problems facing the United States in the world economy.

ECON 330. SEMINAR IN ECONOMIC HISTORY. *Three hours credit.*

Prerequisites, ECON 30, 209, 220, or 231, or the consent of the instructor. This course is primarily concerned with the study of economic history by the application of modern analytical tools of economic research. Methodology of historical analysis will be coupled with limited and guided research. Regular meetings will be held for purposes of criticism and guidance.

ECON 340. SEMINAR IN LABOR ECONOMICS. *Three hours credit.*

Prerequisites, ECON 30, 200, 220, or consent of the instructor. The purpose of this course is to pursue guided research in the areas of labor economics and labor-management problem areas. Selected readings are considered along with critical discussions and research papers in the growing body of data relative to this area of economics.

ECON 344. SEMINAR IN GOVERNMENT AND BUSINESS. *Three hours credit.*

Prerequisites, ECON 30, 220, 277, or the consent of the instructor. This course is aimed at aiding the student in research in the area of government regulation of business in the modern economy of the United States. Regular meetings will be held to evaluate progress in research work and to discuss points of interest in the related readings.

ECON 350. SEMINAR IN NATIONAL INCOME ANALYSIS. *Three hours credit.*

Prerequisites, ECON 220, 250, or consent of the instructor. This course will be an examination of modern macroeconomic theories. Some of the topics will be general equilibrium analysis, modern quantity theory, and post-Keynesian theory.

ECON 353. SEMINAR IN BUSINESS CYCLE THEORIES AND GROWTH THEORIES. *Three hours credit.*

Prerequisites, ECON 220, 253, or consent of the instructor. This course should follow ECON 350 in a student's program. Topics will include multiplier-accelerator models, Harrod-Domar models, Golden Age growth models, and some classical models.

ECON 354. SEMINAR IN DEVELOPMENTAL ECONOMICS. *Three hours credit.*

Prerequisites, ECON 30, 230, or consent of the instructor. The purpose of this course is to pursue limited research in the areas of developmental economics and regional economics. Both evolving national economies and regional economic data of advanced economies are considered. Regular meetings are held to outline and present papers for discussion and criticism.

ECON 360. SEMINAR IN MONEY AND BANKING. *Three hours credit.*

Prerequisites, ECON 202, 220, 250, or consent of the instructor. An examination of the possibilities of monetary regulation of an economy. Emphasis will be on modern controversy.

ECON 363. SEMINAR IN PUBLIC FINANCE. *Three hours credit.*

Prerequisites, ECON 220, 241, or consent of the instructor. The course will examine the role of government in the determination of the allocation of resources, distribution of income, and the level of employment in a modern economy.

ECON 370. SEMINAR IN AGRICULTURAL ECONOMICS. *Three hours credit.*

Prerequisites, ECON 30, 220, 270, or the consent of the instructor. This course is concerned with directed research and use of empirical data in the area of the economics of agriculture and land economics. Regular meetings will be held for purposes of criticism and guidance in readings and research.

EDUCATIONAL ADMINISTRATION

EDAD 200. WORKSHOP IN ADMINISTRATION. *One to three hours credit.*

This course is concerned with the instructional problems of the participants, insofar as these problems pertain to one or more of the many facets of educational administration. Each workshop will have a sub-title and no student may repeat a given sub-title for credit.

EDAD 243. SCHOOL LAW I. *Three hours credit.*

An examination of the legal responsibilities, rights and liabilities of classroom teachers and the legal relationships of teachers to students, administrators, school boards, and the public.

EDAD 322. INDIVIDUAL STUDIES IN EDUCATIONAL ADMINISTRATION. *Maximum of four hours credit.*

Qualified graduate students outline and spend a minimum of 25 clock hours per quarter hours or a problem. Two copies of a well-written paper must be filed before credit is given, one with the instructor and one with the Dean of the Graduate School.

EDAD 340. SEMINAR ON THE PRINCIPALSHIP. *Two hours credit.*

This course focuses on typical problems of the building principal, on methods of identifying and weighing alternative solutions, and in the implications of decision theory for the building principal. Open only to M.A. students in educational administration.

EDAD 341. PHILOSOPHY AND TECHNIQUES OF PUBLIC RELATIONS. *Three hours credit.*

This course is designed primarily for central office personnel to help them: (a) develop a philosophy of public relations, (b) learn how to establish a functional program involving citizens and educators, and (c) become acquainted with skills and techniques essential to school and community understanding.

EDAD 342. SCHOOL ADMINISTRATION—FEDERAL, STATE, LOCAL. *Three hours credit.*

Introduces the student to administrative problems and provides an overview of our educational system at federal, state and local levels. The purpose of the course is to relate the key issues at each level to the role of the superintendent.

EDAD 343. SCHOOL FINANCE. *Three hours credit.*

This course deals with the financial implications of the educational program. Budgeting, management of funds, fiscal policies, and the business management function in the school are included in this course.

EDAD 344. PROBLEMS IN EDUCATIONAL FACILITY PLANNING. *Three hours credit.*

This is a survey course, introducing the student to population projection and community survey techniques, school site selection criteria, the fiscal aspects of facility planning, the development of education specifications, and the roles of various persons in the facility planning process.

EDAD 345. INTERNSHIP IN EDUCATIONAL ADMINISTRATION. *Maximum of six hours credit.*

Selected graduate students work on part- or full-time administrative assignments in school districts or collegiate institutions, under the joint supervision of the College and the administrative staff of the agency involved. Registration by departmental invitation only.

EDAD 346. SCHOOL BUDGETING. *Two hours credit.*

Prerequisite, EDAD 343. Emphasis will be placed on budgetary knowledge necessary for the school business manager. Although attention will be given to theoretical concepts in budgeting, this course will focus on the mechanical procedures of planning, preparing, presenting, and evaluating the budget.

EDAD 347. SCHOOL PURCHASING AND WAREHOUSING. *Four hours credit.*

Prerequisite, EDAD 343. This course covers the techniques of specification writing, purchasing, receiving, storing, distributing, and accounting of supplies and equipment used in the operation and maintenance of schools.

EDAD 348. SCHOOL LAW II. *Three hours credit.*

This course stresses the principles of common law which underlie the relationship of the courts to the schools and focuses on legal problems in education. In addition, the course affords students the opportunity to study intensively the school laws of their respective states.

EDAD 349. AUXILIARY MANAGEMENT SERVICES. *Two hours credit.*

Prerequisite, EDAD 343. This course covers the problems and procedures of school transportation, school lunch programs, and other auxiliary services.

EDAD 355. ORGANIZATION, ADMINISTRATION, AND SUPERVISION OF THE ELEMENTARY SCHOOL. *Four hours credit.*

Designed to meet the needs of those who desire acquaintance with major responsibilities of leadership in the elementary school. The areas of elementary school organization and administrative relationships, supervision skills and techniques, administering pupil personnel, administering special services, and the management of school building supplies and equipment.

EDAD 357. SCHOOL PERSONNEL ADMINISTRATION. *Three hours credit.*

This course presents an overview of the historical evolution of personnel administration in non-education agencies and focuses attention on school personnel tasks: staff selection, in-service training, performance evaluation, and professional negotiations.

EDAD 360. METHODOLOGY OF COMPREHENSIVE FACILITY PLANNING. *Three hours credit.*

This course is offered for the specialist in facility planning. It focuses on the methodology of demographic studies and population projections, the problems of projecting financial resources and planning debt amortization schedules, and techniques for evaluating existing school facilities.

EDAD 361. EDUCATIONAL PROGRAMMING AND FACILITY PLANNING. *Three hours credit.*

This course is offered for the specialist in facility planning. It concentrates on the development and writing of educational specifications for educational facilities, emphasizing the implications of trends in curriculum and teaching methodology.

EDAD 362. EDUCATIONAL FACILITY DESIGN AND CONSTRUCTION. *Three hours credit.*

This course is offered for the specialist in facility planning. It focuses on architectural considerations in facility design, a comparative analysis of various structural systems and materials, and the functional design of educational furniture and technological equipment.

EDAD 365. SECONDARY SCHOOL ORGANIZATION, ADMINISTRATION, AND SUPERVISION. *Four hours credit.*

Designed to assist secondary school administrators and supervisors to acquire information about acceptable solutions to some of the major problems in the secondary school. Consideration is given to the duties and responsibilities of the principal, the nature and role of supervision in the educational program and other pertinent topics.

EDAD 390. MANAGEMENT RESEARCH AND STATISTICAL ANALYSIS. *Four hours credit.*

This course introduces the student to basic concepts of descriptive and inferential statistics and their application to management problems in education. Topics include measures of central tendency, measures of variability, normal curve, correlation, and regression.

EDAD 391. MANAGEMENT RESEARCH AND COMPUTER UTILIZATION I. *Four hours credit.*

Prerequisite, EDAD 390. This course deals with the concepts of design and inferential statistics and their application to management problems in education. Students learn how to prepare management data for computer processing and analysis. Topics include t-Tests, single and multiple-classification analysis of variance, analysis of covariance, and non-parametric statistics.

EDAD 392. MANAGEMENT RESEARCH AND COMPUTER UTILIZATION II. *Four hours credit.*

Prerequisites, EDAD 390, EDAD 391. This course emphasizes program preparation and/or selection for computer analysis of management data. A variety of problems are analyzed via the computer.

EDAD 402. ANALYSIS OF ORGANIZATIONAL MANAGEMENT SYSTEMS: PRACTICUM. *Four hours credit.*

Students assist selected educational agencies in solving problems of administrative structure and staffing, allocation of decision responsibility, internal information flow, policy development, and organizational function. The practicum gives students experience in the application of organization theory to problems of administrative structure. Permission of instructor.

EDAD 403. DEVELOPMENT OF INFORMATION SYSTEMS: PRACTICUM. *Four hours credit.*

Students assist selected educational agencies and their communities in the solution of communication problems through the application of communication theory. Emphasis is on analysis of communication networks, information flow, message content, and public opinion structure. Permission of instructor.

EDAD 404. DEVELOPMENT OF FACILITY PLANS: PRACTICUM. *Four hours credit.*

Students assist selected educational agencies in projecting long-term facility needs, developing plans to meet those needs, and preparing educational specifications for particular construction projects. The practicum gives students practical experience in the solution of facility planning problems. Permission of instructor.

EDAD 405. LONG-RANGE PROGRAM PLANNING AND BUDGETING: PRACTICUM. *Four hours credit.*

Students assist selected educational agencies in the development of long-range plans for program improvement, program budgeting, and cost analysis of existing budgets. Emphasis is on the application of cost-benefit analysis techniques and development of program-planning-budgeting systems. Permission of instructor.

EDAD 406. OPERATIONS ANALYSIS FOR EDUCATIONAL AGENCIES: PRACTICUM. *Four hours credit.*

Students assist selected educational agencies in measuring total operational effectiveness of the organization, analyzing the contribution of each organizational component to total organizational effectiveness and efficiency, and applying the techniques of operations research to the management of the educational enterprise. Permission of instructor.

EDAD 430. EXPERIMENTAL PROGRAM IN SCHOOL ADMINISTRATION. *Maximum of twenty-four hours credit.*

Areas of concern will include communications, curriculum, finance, organization and staffing, role perception and role expectation, problem solving, and decision making. Seminars will include extended readings, class sessions, and field investigations. A series of six seminars designated as I, II, III, IV, V, and VI, will be offered for four hours credit each.

EDAD 441. SEMINAR IN ADMINISTRATIVE THEORY AND RESEARCH. *Three hours credit.*

This seminar is required of all specialist and doctoral majors in educational administration during their first quarter and is available to other advanced graduate students. Content includes a systematic comparison of various theories of organizational and administrative behavior, a survey of recent research in the field of administration, and an overview of research methodology as related to problems in administration.

EDAD 442. SEMINAR IN COMMUNICATION THEORY. *Three hours credit.*

This seminar deals with theories of communication and recent research in the field, focusing on the implications of communication theory for problems in public understanding and internal organization relationships. Experience in public opinion sampling and analysis is an integral part of this course.

EDAD 443. SEMINAR IN DECISION THEORY. *Three hours credit.*

This seminar surveys research on decision-making in small groups, factors influencing group behavior, and the role of the group leaders. The nature of rational or "scientific" decision-making is emphasized.

EDAD 444. SEMINAR IN EXECUTIVE LEADERSHIP. *Three hours credit.*

This course emphasizes research on effective styles of leader behavior, especially in educational institutions, with particular attention given to leadership for curriculum evaluation and instructional improvement.

EDAD 445. SEMINAR IN MANAGEMENT SYSTEMS AND ANALYSIS. *Three hours credit.*

This course focuses on systems-theory and its implications for the analysis and direction of education organizations and their functioning. Special attention is given to the application of automated data processing techniques to the solution of management problems in education, as well as the relationships between organizational structure, decision responsibility, and information flow.

EDAD 446. CASES IN EDUCATIONAL ADMINISTRATION (SEMINAR). *Three hours credit.*

This course provides the advanced student in educational administration an opportunity for organizing and synthesizing his knowledge of the behavioral sciences and philosophy and applying it to the solution of practical problems in educational administration.

NOTE: It is recommended that the 440 series of seminars be taken in sequence.

EDUCATIONAL CURRICULUM AND INSTRUCTION

EDCI 222. INDIVIDUAL STUDIES. *Maximum of four hours credit.*

Qualified undergraduate students outline and spend a minimum of 25 clock hours per quarter hour on a problem. Two copies of a well-written paper must be filed before credit is given, one with the instructor and one with the chairman of the department.

EDCI 251. PROBLEMS IN TEACHING MINORITY GROUPS. *Three hours credit.*

An indepth study of minority groups—with special emphasis on the psychological, educational and social needs of the Mexican-American school child of the Southwest. An attempt will also be made to acquaint educators with teaching methods and techniques that seem to work with minority children.

EDCI 260. PROFESSIONAL RESPONSIBILITIES OF TEACHERS. (ATE) *Maximum of three hours credit.*

Designed to provide a basic understanding of the roles and responsibilities within the education profession. Includes consideration of professional organizations, teacher rights and responsibilities, personnel policies and working conditions. *Enrollment limited to beginning teachers.*

EDCI 261. SECONDARY INSTRUCTION. (ATE) *Three hours credit.*

Designed to provide a comprehensive understanding of basic instructional practices and trends in the secondary school. Includes determining instructional goals, selecting and organizing appropriate learning experiences, evaluation, marking and reporting, classroom management, and extra class activities. *Enrollment limited to beginning teachers.*

EDCI 265. TEACHING FAMILY LIVING . *Three hours credit.*

Designed to provide an understanding of the development of a curriculum in family living to consider problems relating to narcotics, drug abuse, alcohol and tobacco, and facts and attitudes toward human sexual behavior. Identifies procedures appropriate to the organization, administration, and public relations programs related to such a curriculum.

EDCI 351. TEACHING MINORITY GROUPS. *Three hours credit.*

An indepth study of minority groups with special emphasis on the economically deprived Spanish-American and Afro-Americans in the Southwest.

EDCI 352. HISTORY, PHILOSOPHY AND ORGANIZATION OF THE NONGRADED SCHOOL. *Three quarter hours.*

A course designed to provide teachers and administrators with directed study of the curriculum associated with the Nongraded Movement. Emphasis is placed on organizational structure from kindergarten through the senior high school. Theory and practice of systems are considered in terms of the child and his several abilities.

EDCI 360. PROFESSIONAL ROLES AND RESPONSIBILITIES. *Maximum of three hours credit.*

Designed to provide a comprehensive understanding of the role and responsibilities within the education profession. Provides an opportunity to examine specific issues in personnel policies and working conditions.

EDCI 361. SECONDARY INSTRUCTION. *Three hours credit.*

Designed to provide a comprehensive understanding of basic instructional practices and trends in the secondary school. Includes determining instructional goals, selecting and organizing appropriate learning experiences, evaluation, marking and reporting, and extra class activities.

EDCI 362. THE DEVELOPMENT OF INSTRUCTIONAL PRACTICE. *Three hours credit.*

Appraises the development of instructional practices through the subsequent stages of American educational growth to the present. Emphasizes the analysis of outcomes of this growth in terms of particular instructional programs: formal discipline, unfoldment, Pestalozzianism, Herbartianism, connectionism, Progressivism, reflective teaching.

EDCI 363. CURRICULUM IN THE JUNIOR HIGH SCHOOL. *Three hours credit.*

A survey of traditional and recent curriculum organization in the junior high school with reference to the needs of the young adolescent and the special requirements of the school.

EDCI 364. SEMINAR IN JUNIOR HIGH SCHOOL INSTRUCTION. *Maximum six hours credit.*

A series of seminar experiences designed to provide (1) an overview of the problems of organizing, administering, and supervising the junior high school program, and (2) an opportunity for intensive concentration in a specific area of the curriculum.

EDCI 366. FOUNDATIONS FOR CURRICULUM DEVELOPMENT. *Three hours credit.*

Includes the theory and practice of curriculum development as determined by social and cultural change, learning theory, and the nature of knowledge. The process of curriculum planning and the design of the curriculum are considered.

EDCI 367. MODERN CURRICULAR PROGRAMS. *Three hours credit.*

Prerequisite EDCI 366. Describes the emerging curricula in the major areas of the school program K-12. Appraises these programs against criteria drawn from the foundation areas.

EDCI 368. SEMINAR IN CURRICULUM AND INSTRUCTION. *Maximum of nine hours credit.*

Includes a series of seminar experiences dealing with the following areas: (1) current educational trends and issues; (2) the improvement of instructional programs; (3) individual depth study of research and experimentation in instruction.

EDCI 468. ADVANCED SEMINAR IN CURRICULUM AND INSTRUCTION. *Maximum 9 hours credit.*

Prerequisite EDCI 366, EDCI 367. Includes a series of seminar experiences dealing with: (1) foundational areas of curriculum; (2) theories of instruction; and (3) individual depth study of research and experimentation in curriculum and instruction.

HISTORY AND PHILOSOPHY OF EDUCATION

EDHP 295. PHILOSOPHY OF EDUCATION. (ATE) *Three hours credit.*

Prerequisite, EDHP 101. An introductory course in which the student considers the basic problems of knowledge, truth, reality, and value as perceived by the various schools of philosophic thought. The traditional philosophic positions are translated into education schools of thought and application is made to the specific problems of education.

EDHP 296. HISTORY OF EDUCATION IN THE UNITED STATES. *Three hours credit.*

This course is based on material in the most recent texts on the history of education in the United States.

EDHP 337. COMPARATIVE EDUCATION. *Three hours credit.*

The philosophy and practices of education in foreign countries, usually including education in Germany, France, Russia, Norway, Great Britain, China, Australia, Canada, Mexico and certain South American countries.

EDHP 338. SOCIAL AND CULTURAL DIFFERENCES AND EDUCATION. *Three hours credit.*

A multidisciplinary approach to the analysis of educational problems arising from social and cultural differences in the school population. Problems are both defined and analyzed. Solutions are investigated in the light of formulations from social philosophy, anthropology, psychology, history and economics.

EDHP 339. ANTHROPOLOGICAL FOUNDATIONS OF EDUCATION.*Three hours credit.*

An analysis of contemporary American Education using anthropological concepts and methods of research. Special emphasis is placed upon the concepts of culture, subculture, enculturation and acculturation as they relate to educational problems and issues.

EDHP 395. PHILOSOPHY OF EDUCATION. *Three hours credit.*

Educational aims, values and criteria, democracy and education, different systems of educational philosophy, the nature of thinking, method and subject matter are considered.

EDHP 396. HISTORICAL FOUNDATIONS OF EDUCATION. *Three hours credit.*

This course is designed to study important historical and philosophical backgrounds for the integration of present day educational issues.

EDHP 461. PHILOSOPHICAL FOUNDATIONS OF EDUCATION. *Three hours credit.*

A study of the educational aims and values of various cultures which have given direction to peoples in different societies. An integration of classical philosophies with educational philosophies culminating in a statement of practical educational aims and objectives.

EDHP 463. SOCIOLOGICAL FOUNDATIONS OF EDUCATION. *Three hours credit.*

A study of education in relation to the sociological realities of American and world societies, contemporary and primitive.

EDUCATIONAL MEDIA**EM 200. STILL PHOTOGRAPHY FOR TEACHERS. *Two hours credit.***

Teachers are introduced to the basic techniques of photography. Primary emphasis will be on taking and using of photographs and slides to aid communication. A minimum background in darkroom procedures is provided.

EM 206. INTRODUCTION TO EDUCATIONAL RESOURCES. *Five hours credit.*

Introduces students to most of the materials, both print and nonprint, available for instruction; each is demonstrated, and psychological basis for use is discussed as well as its characteristics, advantages and disadvantages; designed to be of value to all interested in education.

EM 208. DESIGN AND CONSTRUCTION OF AUDIO-VISUAL MATERIALS. *Three hours credit.*

Provides experience in the production of teaching materials using equipment and facilities available to most teachers. Includes preparation and mounting of pictures and the production of graphic materials, slides and recordings.

EM 210. TELEVISION IN EDUCATION. *Four hours credit.*

Educators are exposed to the use of television as an effective educational tool at all grade levels, and are provided basic instruction in ETV equipment, methods, and administration. Involvement in actual ETV development on the CSC campus will be designed to give practical experience in a working situation.

EM 280. INTRODUCTION TO CLASSIFICATION AND CATALOGING. *Three hours credit.*

The course considers needs for classification and cataloging. A number of well known classification systems are examined and their relative merits for school use are considered. Fundamentals of the Dewey and Library of Congress systems are studied in greater detail.

EM 281. PROCESSING EDUCATIONAL MATERIALS. *Three hours credit.*

Continues work on the fundamentals of classification by both the L.C. and Dewey

System. Considers construction of a suitable catalog for the school resource center. It will include all necessary processes from the time the materials are acquired until they are ready for circulation.

EM 282. REFERENCE MATERIALS FOR EDUCATIONAL RESOURCE CENTER. *Three hours credit.*

A discussion of suitable reference materials for elementary and secondary school resource centers. Covers selection of principles and use of reference materials.

EM 283. EVALUATION AND SELECTION OF EDUCATIONAL MATERIALS. *Five hours credit.*

Discussion of book selection principles and book selection aids for school libraries. Covers reading levels and interests of children and young people. Course discusses suitable trade book materials for both elementary and high school libraries.

EM 286. UTILIZATION OF EDUCATIONAL RESOURCES. *Three hours credit.*

Considers the selection and utilization of appropriate instructional materials for each of the following situation: (1) individual (self) instruction, (2) small group instruction, and, (3) large group instruction.

EM 287. ORGANIZATION AND ADMINISTRATION OF EDUCATIONAL RESOURCE CENTER. *Five hours credit.*

This course includes a consideration of order and circulation procedures, supervising student personnel, the role of the librarian in the development of curriculum and guidance programs, the relationships of the librarian with teachers and administrators and with other local and state agencies.

EM 301. PRACTICUM. *Maximum of four hours credit.*

Open only by invitation to resident graduate students. Supervised professional activity in the student's major field, approximately two hours per day. Two copies of a well-written paper must be filed before credit is given, one with the instructor and one with the Dean of the Graduate School.

EM 305—CONSERVATION AND PRESERVATION OF EDUCATIONAL RESOURCES. *Three hours credit.*

This course provides an opportunity to study variations in the quality of paper, film, and types of bindings or mounts. Methods of cleaning, storing, and preserving print and non-print materials are considered.

EM 306. TRENDS AND ISSUES IN EDUCATIONAL MEDIA. *Three hours credit.*

This course will identify and discuss recent developments in educational technology and methodology. Studies in the field of communication theory, media utilization, and information storage and retrieval will be reviewed. The implications to in-school utilization, production and administration of educational media will be considered.

EM 307. INSTRUCTIONAL TECHNOLOGY: PHILOSOPHY, THEORY AND PRACTICE. *Three hours credit.*

Graduate students are provided the opportunity to develop a philosophical and theoretical foundation of instructional technology and to translate it into practice.

EM 308. PRODUCTION OF PHOTOGRAPHIC TEACHING MATERIALS. *Three hours credit.*

Provides experience in the more complex production techniques. The course will emphasize three major aspects of production: (1) scripting a production, (2) filmstrip and slide set techniques, and (3) motion picture production techniques. Actual production experience will be gained through laboratory experiences and required individual projects.

EM 380. PHILOSOPHY AND PRINCIPLES OF OUTDOOR EDUCATION. *Three hours credit.*

Designed to acquaint teachers and administrators with the breadth, depth, and

scope of outdoor education. The interdisciplinary approach involving instructors from the Laboratory School and academic areas of the college, will be followed. Direct experiences are provided through observation and participation in day-long and week-long outdoor school programs.

ELEMENTARY EDUCATION AND READING*

ELED 200. ELEMENTARY EDUCATION WORKSHOP. *One-three hours credit.*

An opportunity to study problems in elementary education. The area to be covered in any one workshop will be determined by the workshop sub-title. No sub-title may be repeated for credit.

ELED 227. KINDERGARTEN EDUCATION. (ATE) *Three hours credit.*

A course covering the research, theory, and best practices for the education in kindergartens of four and five-year-old children. Organization, housing, and equipping of new kindergartens, the readiness program for first grade, and parent education will have pertinent handlings within the course.

ELED 309. HANDWRITING AND SPELLING IN THE ELEMENTARY SCHOOL. *Two hours credit.*

A comprehensive consideration of content, methods and materials, and evaluation in teaching handwriting and spelling. Research data in handwriting and spelling are reviewed.

ELED 311. ENGLISH IN THE ELEMENTARY SCHOOL. *Three hours credit.*

A detailed consideration of problems concerned with selection of what to teach, the grade placement of content, methods and materials of teaching, and means of evaluating achievement in English.

ELED 312. MATHEMATICS IN THE ELEMENTARY SCHOOL. *Three hours credit.*

A detailed consideration of problems concerned with selection of what to teach, the grade placement of content, methods and materials of teaching, and means of evaluating achievement in mathematics.

ELED 313. SOCIAL STUDIES IN THE ELEMENTARY SCHOOL. *Three hours credit.*

A detailed consideration of problems concerned with selection of what to teach, the grade placement of content, methods and materials of teaching, and means of evaluating achievement in social studies.

ELED 314. THE ELEMENTARY SCHOOL CURRICULUM. *Three hours credit.*

Surveys and appraises the various types of curriculum organization applicable to the elementary school. Also considers basic curriculum problems in selected subject matter areas.

ELED 321. SEMINAR IN ELEMENTARY SCHOOL ENGLISH. *Three hours credit.*

Prerequisite, ELED 111 or 311. This seminar course considers a few of the problems in the teaching and supervision of English and varies somewhat in content from year to year according to the interests of students.

ELED 322. SEMINAR IN ELEMENTARY SCHOOL MATHEMATICS. *Three hours credit.*

Prerequisite, ELED 112 or 312. This seminar covers important problems in the teaching and supervision of mathematics in the elementary school. Course content may vary from year to year according to the needs of the students enrolled.

ELED 323. SEMINAR IN ELEMENTARY SCHOOL SOCIAL STUDIES.

Three hours credit.

Prerequisite, ELED 113 or 313. This seminar covers important problems in the teaching and supervision of social studies in the elementary school. Problems pertaining to content, unit procedures, problem-solving activities, pupil-teacher planning, and evaluation are considered. Course content may vary from year to year according to the needs of the students enrolled.

ELED 330. EARLY CHILDHOOD EDUCATION. *Three hours credit.*

This course is designed to give the student a background in theory concerning the education of children from nursery school through the 2nd grade.

ELED 331. SEMINAR IN EARLY CHILDHOOD EDUCATION. *Three hours credit.*

Prerequisite, ELED 330. This course is designed to give the student an opportunity to explore research in the area of early childhood education and to give the student an opportunity to observe and discuss children in a classroom situation from nursery school through 2nd grade level.

ELED 332. PSYCHOLINGUISTICS. *Three hours credit.*

This course is designed to acquaint the student with language development of the young child. Attention will be devoted to oral and written language, vocabulary development, and listening skills.

ELED 333. NURSERY SCHOOLS FOR THE CULTURALLY DISADVANTAGED. *Three hours credit.*

This course is designed to acquaint the student with the nursery school child, the nursery school curriculum, and organization of the nursery school.

*Reading listed alphabetically.

ENGLISH

ENG 210. ADVANCED EXPOSITORY WRITING. *Three hours credit.*

Prerequisites, COM 1, 2. For upper division and graduate students with adequate preparation in grammar and composition. Application of the elements of style to the development of effective prose.

ENG 211. THE ENGLISH LANGUAGE. *Five hours credit.*

The course presents a history of the development of the English language; the historical basis of usage and grammar including grammatical analysis based upon traditional terminology as opposed to the new approaches, structural grammar, generative grammar, etc.; and the sources of the English vocabulary.

ENG 212. GENERATIVE-TRANSFORMATIONAL GRAMMAR. *Four hours credit.*

Prerequisite, ENG 211. A study of the generation of English sentences: blocks, kernels (phrase-structure rules), transformations (single and double base); conceptual postulates, operations, and processes underlying a generative-transformational grammar.

ENG 230. GREEK AND COMPARATIVE MYTHOLOGY. *Four hours credit.*

A study of Greek myths as one of the important sources of literary allusion and imagery and a comparison of Greek myths with those of other cultures to show what is common to all mythologies.

ENG 231. THE SHORT STORY. *Three hours credit.*

The study of typical modern short stories to observe the methods of modern writers and the interpretation of our present-day life embodied in this form of literature.

ENG 232. TECHNIQUES OF THE NOVEL. *Five hours credit.*

A study of seven or eight important English and American novels to show different techniques which have been used to reveal the novelists' artistic insight.

ENG 233. MODERN LITERATURE ABOUT CHILDHOOD AND ADOLESCENCE. *Three hours credit.*

A study of the concept of childhood and adolescence in the writing of twentieth-century British and American authors, with emphasis on the ideas of innocence and initiation.

ENG 235. CONTEMPORARY AMERICAN DRAMA. *Three hours credit.*

A comprehensive view of the best dramatic literature of the modern American theater.

ENG 236. MODERN DRAMA SINCE IBSEN. *Three hours credit.*

A study of the developments in Modern European and American drama since the time of Ibsen, emphasizing the works of such writers as Ibsen, Shaw, Synge, O'Casey, O'Neill, and such other European and American writers as have been significant in the development of the twentieth century drama.

ENG 239. THE FORMS AND MEANING OF POETRY. *Four hours credit.*

A study of some of the formal aspects of poetry (prosody, stanzaic and "named" forms, and the like), of types (lyric, narrative, dramatic), and of the poets' use of language.

ENG 255. ELIZABETHAN DRAMA EXCLUSIVE OF SHAKESPEARE.

Four hours credit.

The drama from 1558 to 1642; the major dramatists, stage conditions, acting companies, and changes in dramatic form and subjects reflecting the life of the times.

ENG 256. LITERARY CRITICISM. *Three hours credit.*

A study of the theory and history of literary criticism from Plato to Wayne C. Booth, with some application to critical theory.

ENG 257. HISTORY OF IDEAS IN LITERATURE. *Three hours credit.*

An intensive chronological study of various significant themes in literature.

ENG 258. READINGS IN ENGLISH LITERATURE FROM 700-1800.

Four hours credit.

A survey of English literature from *Beowulf* to the Romantic Movement.

ENG 259. READINGS IN ENGLISH LITERATURE FROM 1800 TO THE PRESENT. *Four hours credit.*

A survey of English literature from the Romantic Movement to the present time.

ENG 260. READINGS IN AMERICAN LITERATURE TO 1865. *Four hours credit.*

A survey of the beginnings of American literature until the time of the Civil War.

ENG 261. READINGS IN AMERICAN LITERATURE SINCE 1865. *Four hours credit.*

A survey of modern American literature.

ENG 289. LITERATURE OF THE OLD TESTAMENT. *Three hours credit.*

A study of selected books of the Old Testament with emphasis on their literary qualities, and on the moral and religious progress they reveal. The historical and cultural background of these writings will be studied.

ENG 290. LITERATURE OF THE NEW TESTAMENT. *Three hours credit.*

A comparative study of the Gospels, followed by a study of other New Testament writings and of the historical and cultural background of the period in which they were written.

ENG 303. SEMINAR IN TWENTIETH CENTURY BRITISH AND AMERICAN POETRY. *Three hours credit.*

A history of recent poetry in English from the Imagists to the present.

ENG 304. THE GREEK DRAMA. *Four hours credit.*

A study of the dramas of Aeschylus, Sophocles, Euripides and Aristophanes to note the development of dramatic technique and the developing ideas from the beginnings of classicism, through the golden age, to decadence.

ENG 305. SEMINAR IN MAJOR AMERICAN WRITERS I. *Four hours credit.*

A study of selected American writers with special emphasis on their relation to the currents of American thought. Reports by each member of the class will be determined by the interest of the student.

ENG 306. SEMINAR IN MAJOR AMERICAN WRITERS II. *Four hours credit.*

A study of selected later American writers with special emphasis on their relation to the currents of American thought. Reports by each member of the class will be determined by the interest of the student.

ENG 311. SEMINAR IN ENGLISH ROMANTIC MOVEMENT. *Four hours credit.*

The origin, purpose and nature of the Romantic Movement. A study of two or more of the following authors: Blake, Wordsworth, Coleridge, Shelley, Keats, Byron, Lamb, Hazlitt and DeQuincey.

ENG 312. OLD ENGLISH. *Five hours credit.*

Anglo-Saxon grammar and vocabulary. Reading of important documents from the period—Alfred's Translations, Charters and Historical Documents, Anglo-Saxon poetry, etc. Emphasis on background for contemporary language.

ENG 313. CHAUCER AND MIDDLE ENGLISH. *Five hours credit.*

Writings of Geoffrey Chaucer (especially *The Canterbury Tales* and *Troilus and Criseyde*) in Middle English; selected writings to illustrate both the literary qualities and linguistic aspects of Middle English.

ENG 314. SHAKESPEARE SEMINAR. *Four hours credit.*

Detailed study of three of the great plays, introduction to Shakespearean scholarship, and a review of Shakespearean criticism.

ENG 315. MILTON SEMINAR. *Four hours credit.*

A study of Milton's major prose and poetry.

ENG 316. SEMINAR IN TENNYSON AND BROWNING. *Four hours credit.*

A review of the shorter poems of both men and a special stress on some of the longer works (*Maud*, *Idylls of the King*, *The Ring and the Book*) and an introduction to the critical writings about Tennyson and Browning.

ENG 318. SEMINAR IN RESTORATION AND EIGHTEENTH CENTURY DRAMA. *Four hours credit.*

A study of the types of plays written between 1660 and 1800, with particular attention to heroic tragedy, comedy of manners, and sentimental drama, as represented by such writers as Dryden, Wycherley, Etherege, Otway, Congreve, Steele, Addison, Goldsmith, and Sheridan.

ENG 319. LITERATURE OF THE EIGHTEENTH CENTURY. *Four hours credit.*

A study of the leading writers of the eighteenth century, with emphasis being placed on the works of Pope, Swift, Boswell, and Johnson as major figures of the century. Major ideas emanating from the century will also be stressed.

ENG 320. SEMINAR IN VICTORIAN LITERATURE. *Five hours credit.*

A graduate course, for intensive individual research into the problems of the Victorian era that bear upon major British writers; the relations between the literature and developments in politics, philosophy, religion, art, science, publication and the like that give distinctive meaning to the term "Victorian."

ENG 321. SEMINAR IN THE TWENTIETH CENTURY BRITISH NOVEL.*Four hours credit.*

A survey of the historical and aesthetic development of the novel in Great Britain during the twentieth century.

ENG 323. MODERN ENGLISH PHILOLOGY AND USAGE. *Four hours credit.*

Prerequisite, ENG 211. An examination of the bases of current English usage, designed to acquaint the student with such matters as sound changes, theories of correctness in grammar and pronunciation, and current discoveries or tendencies in linguistic science.

ENG 325. SEMINAR IN WORLD LITERATURE. *Four hours credit.*

The study in translation of one great work of non-English or American literature or of a small group of such masterpieces which are closely related either in form or idea. The selections vary with the needs of the students and the interest of the instructor.

ENG 326. LITERARY CRITICISM. *Two hours credit.*

An overview of the various periods of American and English literature, with special emphasis on key figures, typical genres, literary movements, and critical attitudes. Preparation for the comprehensive and qualifying examinations. M.A. candidates should register in their final quarter; Ed.D. candidates in their second quarter.

ENGLISH EDUCATION**EED 200. WORKSHOP IN THE TEACHING OF ENGLISH. (ATE)** *Maximum of nine hours credit.*

A series of workshops in special problems in the teaching of English, conducted by authorities in the field.

EED 226. LITERATURE AND MATERIALS IN THE SECONDARY SCHOOL. (ATE) *Five hours credit.*

Materials for teaching English in secondary schools. Principles for the selection of literature for high school pupils. Critical study of selected readings.

EED 227. LITERATURE AND MATERIALS IN THE JUNIOR HIGH SCHOOL. (ATE) *Four hours credit.*

Selection of literature and supplementary materials to fit the needs and interests of early adolescents. Methods of teaching literature in grades 7, 8, and 9.

EED 228. THE TEACHING OF READING IN THE SECONDARY SCHOOL. (ATE) *Four hours credit.*

Methods and materials to be used in the teaching of reading, both developmental and remedial, in the secondary school.

EED 230. THE TEACHING OF LANGUAGE. (ATE) *Four hours credit.*

A study of language learning and teaching, including the philosophy of English and the evaluation of inductive and deductive procedures. An analysis of some of the "new grammars" in current textbooks with implications for the secondary English curriculum.

EED 250. LITERATURE FOR ADOLESCENTS. *Three hours credit.*

Study of that reading material which provides a transition from children's literature to literature for adults. Attention concentrated upon junior novels, junior biographies, and their authors, as well as upon trends and evaluative standards.

EED 302. THE TEACHING OF COMPOSITION. (ATE or certification at the undergraduate level) *Four hours credit.*

Methods of improving the composition of high school students. The organization of paragraph and theme. The improvement of sentence structure.

EED 326. RECONSTRUCTING THE ENGLISH CURRICULUM. (ATE or certification at the undergraduate level) *Four hours credit.*

A study of the place of English in the curriculum of the secondary school, with a consideration of appropriate materials and their placement.

EED 350. SEMINAR IN LITERATURE FOR ADOLESCENTS. (ATE or certification at the undergraduate level) *Four hours credit.*

A concentrated study of and first-hand acquaintance with books written for adolescents, with emphasis upon junior novels and junior biographies. Consideration of reading guidance based upon student interests and needs. Development of criteria for evaluating literature for adolescents.

FINE ARTS

FA 200. TECHNIQUES OF CREATIVE WEAVING. *Three hours credit.*

A study of the problems and various processes of weaving with emphasis on original designing of weaves for color and texture.

FA 203. WATERCOLOR PAINTING. *Five hours credit.*

Advanced experiences in watercolor painting to develop individual expression in creative painting and technical mastery of the medium.

FA 204. FIGURE AND COMPOSITION. *Three hours credit.*

An advanced study of the human figure in composition with creative work in a variety of media.

FA 205. MONOPRINTS. *Two hours credit.*

A series of studies providing experience in the expressive use of oils as a graphic transfer technique.

FA 207. FUNCTIONAL SCULPTURE. *Three hours credit.*

Advanced application of sculpture technology. Emphasis on aesthetic and functional considerations; monumental, architectural, environmental sculpture.

FA 208. SCULPTURE IN METAL AND PLASTICS. *Three hours credit.*

Procedures basic to the techniques of welding, fabrication and casting of sculpture in metal and/or plastics.

FA 209. PRINT MAKING. *Three hours credit.*

Prerequisite, FA 109. An advanced experimentation in intaglio, relief and lithography. Major emphasis on individual study in one or two processes.

FA 212. PROBLEMS IN DESIGN. *Three hours credit.*

An advanced study of the techniques of organization of the design variables. Opportunity for individual growth in solving design problems in areas of student's choice.

FA 216. CREATIVE JEWELRY. *Four hours credit.*

An experimental approach to the problem of contemporary silver jewelry, including the exploration of combining wood, bone, stones, and enameling.

FA 217. POTTERY: ADVANCED THROWING. *Three hours credit.*

An advanced study of throwing techniques on the potter's wheel with individual competence and craftsmanship stressed in this phase of the potter's craft.

FA 219. THE SILK SCREEN PRINTING PROCESS. *Three hours credit.*

A study of the various methods and techniques in the graphic processes of silk screening. Applied problems in all the processes with emphasis on blackout, paper stencil, film, touche, serigraphy, and textiles.

FA 220. OIL PAINTING. *Five hours credit.*

An advanced study in oils to develop individual expression in creative painting and technical mastery of the medium.

FA 221. ART HISTORY I. *Three hours credit.*

A study of the development of art from prehistoric times to and including the Gothic Age.

FA 222. ART HISTORY II. *Five hours credit.*

A study of the development of art from the Renaissance to the present day.

FA 223. SURVEY OF ART. *Five hours credit.*

A survey of the important arts of the world stressing the understanding and appreciation of the forms produced by man from the dawn of prehistory through all important eras of art development. Emphasis is placed on contemporary trends in the arts which dictate the appearance of the world around us today.

FA 225. FIGURE PAINTING. *Four hours credit.*

Prerequisite, FA 120. Painting in oils from the human figure.

FA 227. GLAZE FORMULATION. *Three hours credit.*

Prerequisites, FA 17, 117. An exploration of ceramic glazes as related to their use in a pottery studio or public school classroom.

FA 228. SEMINAR IN SECONDARY ART. *Two hours credit.*

A survey and demonstration of new ideas in art techniques and materials essential to a secondary school art program with student participation in selected areas.

FA 230. SEMINAR IN ELEMENTARY ART. *Two hours credit.*

Research studies for the graduate student dealing with a philosophy of art education; an understanding of and an opportunity to participate in the essential art activities for the elementary school and to develop his interest and enthusiasm for the teaching of art. Emphasis is given to the creative approach and the integration of the art activities with the entire school program.

FA 231. WORKSHOP IN FINE ARTS. *Three hours credit.*

A series of workshops in specialized areas of Fine Arts conducted by authorities in the field. The subject to be completed in any one workshop will be determined by the sub-title. No sub-title may be repeated for credit.

FA 232. CONTEMPORARY OIL PAINTING. *Five hours credit.*

Experimentation in oils and a study of contemporary trends to provide the student more time and experience in a search for his own personal expression.

FA 253. MEDIEVAL ART HISTORY. *Three hours credit.*

The study of the development of painting, sculpture, architecture and crafts of the Middle Ages. A survey of the influence of Early Christian and Byzantine art styles, Romanesque and architecture, and the Gothic will be chronologically introduced in the course.

FA 258. THE ARTS OF THE UNITED STATES. *Three hours credit.*

The critical history of the development of the visual arts of the United States. A slide illustrated lecture course introducing the American heritage in the painting, sculpture and architecture of the United States from the Colonial period through the present time.

FA 270. ADVANCED JEWELRY AND SILVERSMITHING. *Four hours credit.*

An individual approach to involve casting problems and flat ware production.

FA 301. SUPERVISION OF ART. *Three hours credit.*

An exploration of the expanding role of art education in the total school program and a critical study of the role of the art supervisor and supervisory techniques.

FA 302. TRENDS IN ART EDUCATION. *Two hours credit.*

An appraisal of the various points of view in art education and a comprehensive study of the current literature dealing with methods, media and techniques.

FA 303. ADVANCED WATERCOLOR PAINTING. *Two hours credit.*
Prerequisite, FA 203. A study of recent developments in watercolor painting with emphasis on new techniques and mixed media.

FA 304. SEMINAR IN ART EDUCATION. *Two hours credit.*
A seminar directed toward problems of teaching and supervision of art education in the high school. The scope of the course will remain flexible to enable the student to pursue the areas of his greatest need.

FA 305. ADVANCED COLOR THEORY. *Four hours credit.*
An advanced and extensive study of creative color composition and existing color theories.

FA 306. SPECIAL PROBLEMS IN ART EDUCATION. *Three hours credit.*
The study of creativity and how to develop it for different age levels.

FA 307. ADVANCED SCULPTURE. *Three hours credit.*
The major work of sculpture developed on the creative initiative of the graduate student. Seminar in sculpture; comparative esthetics and technology.

FA 308. ADVANCED METAL SCULPTURE. *Three hours credit.*
Metal casting and welded sculpture at an advanced technical level.

FA 311. ADVANCED DESIGN. *Five hours credit.*
Design experiences at a professional level. Included are two and three dimensional intellectual and creative experiences; research into the origin and history of design theory and practice.

FA 315. TRENDS IN THE TEXTILE CRAFTS. *Three hours credit.*
Research and creative expression in the trends in the textile expressions of today, with emphasis on stitchery, hooking, batik, silk screen, weaving, and block printing.

FA 316. CRAFT EXPRESSION AND CONSTRUCTION. *Three hours credit.*
An advanced study of the trends in craft expressions with special interest in various materials dealing with modeling, carving, simple sculpture, art metal and construction.

FA 317. CERAMICS. *Three hours credit.*
Prerequisites, FA 17, 117, 217. Practical studio studies and experience on the graduate level in glazes, clay bodies, firing with gas and electric kilns, and related phases of pottery.

FA 319. SERIGRAPHY. *Two hours credit.*
Prerequisite, FA 219. A study and production of the techniques of making original art prints through the silk screen process.

FA 320. ADVANCED OIL PAINTING. *Two hours credit.*
An examination of the latest technical trends and philosophies in oil painting with exploratory and experimental projects in these fields.

FA 324. CREATIVE ACTIVITIES IN THE ELEMENTARY SCHOOL. *Three hours credit.*
Research and creative experience in the various art activities of the elementary school art education program.

FA 327. ART CURRICULUM FOR EXCEPTIONAL CHILDREN. *Three hours credit.*
Organizing curriculums involving the aesthetic-therapeutic values of creative activities for exceptional children.

FA 328. THE CURRICULUM IN ART EDUCATION. *Four hours credit.*
A review of the best literature on the content and organization of the curriculum in general education, and the professional literature in art education. Analysis and evaluation of course of study, the building of curriculums and significant units for teaching art.

FA 331. CONTEMPORARY ART HISTORY. *Three hours credit.*

The study of the development of the plastic arts of Europe and the United States since 1900. Fauvism through all of the revolutionary movements of painting, sculpture and architecture to the present time.

FA 332. ADVANCED HISTORY OF ART. *Three hours credit.*

Research in areas of special interest within the scope of art history.

FA 333. MIXED MEDIA PAINTING. *Five hours credit.*

New experiences and experiments in the development of new techniques in individual creative expression.

FA 335. ADVANCED LIFE DRAWING. *Two hours credit.*

Advanced study in the many types of drawing techniques to develop visualization by drawing from the human figure.

FA 336. ADVANCED DRAWING. *Three hours credit.*

Advanced problems and research in drawing, with emphasis on individual needs and enrichment. Course includes techniques in various media.

FA 337. ADVANCED CERAMICS. *Three hours credit.*

Prerequisites, FA 17, 117, 217, 317. A synthesis of the ceramic processes as related to the teacher-potter, and to provide an opportunity to express a high level of craftsmanship and individuality within the medium of clay.

FOREIGN LANGUAGES

FL 210. LINGUISTICS. *Three hours credit.*

A brief survey of the world's chief languages, their geographical distribution, main cultural features and appearance. In more details, classification of the Indo-European languages, with particular stress on historical development, basic grammatical structure, resemblances, differences and relationships of English, French, German and Spanish.

FL 231. THE TEACHING OF FOREIGN LANGUAGES. *Four hours credit.*

Prerequisite, two years of foreign language. A study of problems in the teaching of foreign languages at the secondary and elementary school levels. Includes development of content for course of study, organization of learning materials, procedures in teaching, testing and evaluating.

FL 232. TEACHING FOREIGN LANGUAGE IN THE ELEMENTARY SCHOOL. *Three hours credit.*

Especially for teachers of the elementary school level, but including all levels of instruction. A study of today's practical values, aims, methods, approaches, procedures, and means and materials for attaining success in teaching modern foreign languages.

FRENCH

FR 205. FRENCH DRAMATISTS OF THE SEVENTEENTH CENTURY: CORNEILLE, RACINE, MOLIÈRE. *Three hours credit.*

Prerequisite, two years of college French. A study of the three great dramatists of the seventeenth century, and of their contribution to French theater and French literature as a whole. Several plays by each author will be read in the original and discussed. The class will be conducted in French.

FR 210. FRENCH CIVILIZATION. *Three hours credit.*

Prerequisite, two years of college French. The study of French civilization and culture, including the historical, economic, political, and artistic development of the country from prehistoric times to the present. The class will be conducted in French.

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FR 215. EXPLICATION DE TEXTES. *Three hours credit.*

Prerequisite, two years of college French. The study of the French method of studying literature called "explication de textes," which includes a discussion of the different literary genres and the analysis of the individual literary selections representing these genres. The class will be conducted in French.

FR 250. TWENTIETH CENTURY FRENCH THEATER. *Three hours credit.*

Prerequisite, two years of college French. The main currents of French theater in the twentieth century, including the Avant-Garde movement. Emphasis will be placed on Cocteau, Giraudoux, Montherlant, Anouilh, Sartre, Camus and Ionesco. The class will be conducted in French.

FR 251. TWENTIETH CENTURY FRENCH PROSE. *Three hours credit.*

Prerequisite, two years of college French. The main currents of French prose in the twentieth century. Emphasis will be placed on Gide, Proust, Mauriac, Malraux, St-Exupery, Sartre, Camus, and the "nouveau roman" novelists. The class will be conducted in French.

FR 260. ANDRÉ GIDE. *Four hours credit.*

Prerequisite, permission of the instructor. The life and work of André Gide. The development of the writer and his influence on twentieth century French literature. Special attention will be given to *Les Caves du Vatican* and *Les Faux-Monnayeurs*. The class will be conducted in French.

FR 261. CONTEMPORARY FRENCH POETRY. *Four hours credit.*

Prerequisite, permission of the instructor. The study of the poetry of France between 1918 and 1960's. Special emphasis will be placed on Prévert, Chars and Saint-John Perse. The class will be conducted in French.

FR 262. CONTEMPORARY FRENCH CRITICS AND ESSAYISTS. *Four hours credit.*

Prerequisite, permission of the instructor. An examination of French literary criticism and the work of French essayists in the nineteenth and twentieth centuries. Special attention will be devoted to the French literary journals and their role. The class will be conducted in French.

FR 290. FRENCH FOR READING KNOWLEDGE I. *No credit.*

Prerequisite, none. The course will be conducted to help graduate students prepare for the Ph.D. language reading examination in French. The basic grammatical structures of the language will be introduced from a traditional viewpoint.

GEOGRAPHY

GEOG 202. CARTOGRAPHY. *Four hours credit.*

A fundamental course on the theory and practice of maps and graphic representation. Three one-hour lectures and one credit hour for arranged laboratory work.

GEOG 212. ECONOMIC GEOGRAPHY. *Five hours credit.*

Economic conditions affecting the products, industries, commerce and resources of the world. Special emphasis on the United States.

GEOG 218. AUSTRALIA AND THE PACIFIC. *Two hours credit.*

A regional consideration of the advantages and limitations of the physical and cultural environment, population distribution, and economic development of Australia, New Zealand, Melanasia, Micronesia, and Polynesia.

GEOG 226. AFRICA. *Five hours credit.*

Relationships between the physical and cultural patterns. Land use, resource development, social and political problems.

GEOG 237. MIDDLE AMERICA. *Three hours credit.*

Emphasis is placed upon the heterogeneity of physical conditions, people, historical

development, natural resources and economic activities. Particular attention is given to the problems and prospects of the Middle American countries in their efforts toward improved economic conditions and political stability.

GEOG 238. SOUTH AMERICA. *Three hours credit.*

An analysis of the geographic characteristics of those Western Hemisphere nations lying south of the equator. Attention is focused upon the significant differences from place to place in physical conditions, racial and cultural heritage, and stage of economic development. Particular attention is given to the impact of the Industrial and Democratic Revolutions upon a previously pre-industrial society.

GEOG 243. EUROPE. *Three hours credit.*

Physical and cultural patterns. The nations of Europe, their regions, cultures, social and economic organizations with resulting conflicts.

GEOG 244. ASIA. *Three hours credit.*

The countries of Asia in terms of their physiography, climates, regions, cultural landscapes, social organizations and economic activities.

GEOG 248. PHYSICAL GEOGRAPHY OF THE UNITED STATES. *Four hours credit.*

The study of the major climatic, edaphic, vegetational, and landform patterns of the United States, with an emphasis on Colorado. Weekend field trip. Prerequisites: GEOG 20 and 21 or permission of instructor.

GEOG 250. GEOGRAPHY OF COLORADO. *Three hours credit.*

A study of the geographical and human resources of Colorado. The course is concerned with the physical features, climate, land form regions and natural resources of the state and their utilization and conservation; agricultural, mining, manufacturing, water supply, transportation, commerce and industry; population problems, state government and current problems in the growth and development of Colorado.

GEOG 260. POLITICAL GEOGRAPHY. *Three hours credit.*

A study of the principles of political geography as developed through a systematic and regional analysis of political phenomena and their relation to geographic conditions. Historical and current problems in local, national, and international affairs will be considered from the aspect of the geographic factors involved.

GEOG 265. THE SOVIET UNION. *Five hours credit.*

A regional analysis of the geographic conditions, their historical importance, and their relation to economic, social, and political problems in the Soviet Union and to its position in world affairs.

GEOG 270. URBAN GEOGRAPHY. *Five hours credit.*

A study of the urban community as a geographical phenomenon. Opportunity is provided for students to obtain practical field experience within the local area. Attention is also given to the development of cartographic skills as an aid to meaningful organization and presentation of data.

GEOG 290. PROBLEMS IN GEOGRAPHY. *Maximum of nine hours credit.*

A series (three) of advanced undergraduate research seminars. Each seminar will be conducted by an instructor who specializes in the regional or systematic study upon which the seminar is based (e.g., Latin America, Africa, Urban, Economic).

GEOG 292. FIELD COURSE IN GEOGRAPHY. *Maximum of fifteen hours credit.*

The study and application of the techniques used in the solving of geographic problems in the field, together with the effective presentation of the results of such studies. Prerequisite: Permission of instructor.

GEOG 305. THE EVOLUTION OF GEOGRAPHIC THOUGHT. *Three hours credit.*

Discussions and studies of the comparative development of the philosophies and

operative thought of geographers, both past and contemporary, in different countries by analyzing and appraising available geographic literature. Particular emphasis will be placed upon themes and topics significant to the growth of modern American Geographic Philosophy.

GEOG 380. SEMINAR IN REGIONAL GEOGRAPHY. *Maximum of nine hours credit.*

This is a problems course in which the student will organize, conduct, present and defend research of a regional nature and will participate in the critical evaluation of similar progress reports and completed works as presented by others.

GEOG 385. SEMINAR IN TOPICAL GEOGRAPHY. *Maximum of nine hours credit.*

This is a problems course in which the student will organize, conduct, present and defend research of a topical nature and will participate in the critical evaluation of similar progress reports and completed works as presented by others.

GEOLOGY

GEOLOG 200. SURVEY OF GEOLOGY. *Six hours credit. (Four hours lecture, six hours laboratory.)*

This course is designed primarily for graduate students who have a good background in science, but no credit in geology. Earth materials, aggradational and degradational processes, and Earth history will be investigated at depth and at an accelerated rate. Offered summers only.

GEOLOG 211. MINERALOGY. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisite, GEOL 102. This course includes introductory work in crystallography, optical crystallography, descriptive and determinative mineralogy, and the study of mineral occurrences and associations. The laboratory stresses identification of minerals by means of physical and chemical techniques. One Saturday field trip required.

GEOLOG 213. PETROLOGY. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisite, GEOL 102. The origins of the various rocks, their compositions, and the bases for their classification will be investigated in the classroom. Also, the basic theories and methods of optical crystallography will be studied. In the laboratory various petrographic techniques will be learned and practiced, including use of the petrographic microscope for identifying mineral grains and minerals in thin rock sections.

GEOLOG 220. PALEONTOLOGY. *Four hours credit. (Three hours lecture, three hours laboratory.)*

Prerequisite, GEOL 104. This course is a study of fossil animals and plants—their morphologies, classifications, life histories, trends of evolution, ecologies, and their uses as stratigraphic tools.

GEOLOG 223. PRINCIPLES OF STRATIGRAPHY AND SEDIMENTOLOGY. *Four hours credit. (Three hours lecture, three hours laboratory.)*

Prerequisite, GEOL 104. This course will investigate the methods of studying the sedimentary rocks and their contained fossils, and also methods of correlation and interpreting the stratigraphic record to build a picture of the geologic past. There will be an introduction to the regional stratigraphy of this area.

GEOLOG 231. GEOMORPHOLOGY. *Four hours credit. (Three hours lecture, three hours laboratory.)*

Prerequisite, GEOL 102 or 106. This course consists of a detailed study of land forms and their evolution—the geologic interpretation of landscapes. Special emphasis is given to examples located in the United States. Interpretation of photos and topographic maps is stressed.

GEOL 232. INTERPRETATION OF GEOLOGIC MAPS AND AERIAL PHOTOGRAPHS. *Three hours credit. (One hour lecture, six hours laboratory.)*

Prerequisite, GEOL 102 or 106. In this course, which is largely laboratory in nature, the student will learn basic principles in interpreting physiographic and structural features from aerial photographs and geologic maps.

GEOL 233. GLACIAL AND PLEISTOCENE GEOLOGY. *Three hours credit.*
Prerequisite, GEOL 102. A survey of geologic phenomena which characterized the Pleistocene Epoch with emphasis on the behavior of glaciers—their dynamics, growth and recession, associated landforms and sediments, and climatic implications.

GEOL 235. ROCKY MOUNTAIN GEOLOGY. *Three hours credit.*
Prerequisite, GEOL 104. This course seeks to apply the student's geologic knowledge to a study of the extensive current literature in geology, especially that dealing with the Rocky Mountain area. A brief overview of the development of geology introduces the course. Two-day field trip required. Open only to earth science majors.

GEOL 241. STRUCTURAL GEOLOGY. *Four hours credit. (Three hours lecture, three hours laboratory.)*
Prerequisite, GEOL 102. This course deals with the mechanics of rock deformation, and the geologic structures of the Earth's crust—their description and classification, theories and facts regarding their origins, and methods of investigating them.

GEOL 242. GEOLOGIC FIELD METHODS. *Four hours credit. (Two hours lecture, six hours laboratory.)*
Prerequisites, GEOL 104 and MATH 25. This course will give the student some appreciation of how geologic information is obtained in the field and recorded on maps. By use of Brunton compass and alidade, each student will prepare several maps of areas near the campus, plus one map of an area of moderately complex structure.

GEOL 291. GEOLOGICAL BASIS OF EARTH SCIENCE. *Three hours credit.*
(NSF In-Service Institute.)
This course will emphasize the geological basis of Earth Science. A review of minerals, rocks, structure, and history as related to Earth Science will be investigated. During the quarter the class will study geosynclines, evolution, development of continents, and the Earth's interior.

GEOL 311. OPTICAL CRYSTALLOGRAPHY AND PETROGRAPHY.
Five hours credit. (Three hours lecture, six hours laboratory.)
Prerequisite, GEOL 211. In the classroom theories and methods of optical crystallography are investigated, and the optical properties of minerals are discussed. In the laboratory various petrographic techniques are learned including use of the petrographic microscope for identifying mineral grains in immersion media and in rock thin sections.

GEOL 342. ADVANCED FIELD GEOLOGY. *Eight hours credit.*
Prerequisites, GEOL 242 or equivalent. This course is designed for graduate students who wish to gain experience in geological field work. The student will spend approximately five weeks at a field camp in the Rocky Mountain area, which will be operated in cooperation with another college or university. In the field he will investigate stratigraphic and structural problems of a designated area, and he will make a geologic map of the area. Offered summers only.

GEOL 349. THE FABRIC OF GEOLOGY. *Three hours credit.*
Prerequisite, consent of instructor. This course is designed for graduate students who have a good foundation in geology. Certain geologic concepts will be introduced by means of a basic textbook, which will be supplemented by wide reading of the geologic literature.

GERMAN

GER 200. PROBLEMS IN ORAL GERMAN. *Three hours credit.*

Prerequisite, three years college German or permission of instructor. To provide advanced oral training. Stress will be on sharpening the pronunciation, comprehension and fluency of conversational ability of the student. Individual problems will be discussed and aided by means of drills, tape work in the language laboratory and outside help.

GER 225. EIGHTEENTH CENTURY GERMAN LITERATURE. *Three hours credit.*

Prerequisite, two years of college German. The general trends of German literature in the eighteenth century. Emphasis will be placed on the Halle poets, Lessing, Wieland, Herder, and Goethe. Readings and lectures in German.

GER 226. NINETEENTH CENTURY GERMAN LITERATURE. *Three hours credit.*

Prerequisite, two years of college German. The main trends of German literature of the nineteenth century, especially the Romantic Movement. Emphasis will be placed on the later work of Goethe and the writings of Schiller. Readings and lectures in German.

GER 227. TWENTIETH CENTURY GERMAN LITERATURE. *Three hours credit.*

Prerequisite, two years of college German. The most important aspects of twentieth-century German literature: neo-romanticism, symbolism, expressionism, and other movements. Readings and lectures in German.

HEALTH, PHYSICAL EDUCATION AND RECREATION

HPER 200. WORKSHOP IN HEALTH, PHYSICAL EDUCATION AND RECREATION. *Three hours credit.*

Designed to provide opportunities for study in the problem areas of the participants; however, the problems attacked would vary from time to time according to the experts conducting the workshop. The nature of the workshop might cover such areas as administration, curriculum, new programs and techniques, etc. Each workshop will have a sub-title; and no sub-title may be repeated by a student for credit.

HPER 205. ISSUES IN HEALTH EDUCATION. *Three hours credit.*

Prerequisite Health 61 or equivalent. A comprehensive and intensive study of the major contemporary individual and social health problems relating to family life, sex education, the use of stimulants, narcotics, halucinogens, alcohol, tobacco, and other crucial health problems.

HPER 226. TESTS AND MEASUREMENTS IN PHYSICAL EDUCATION. *(ATE) Three hours credit.*

Designed to give the student a foundation in techniques of evaluation, including elementary statistical procedures, the preparation and administration of skill and written tests, and the use of other evaluative materials in the field.

HPER 232. ADAPTED PHYSICAL EDUCATION. *(ATE) Three hours credit.*

Prerequisites, HPER 120, 121. Developmental, remedial, and corrective programs in physical education. Emphasis is given to adaptations which are designed to meet the needs of individuals requiring special attention above and beyond the regular physical education program.

HPER 235. EDUCATIONAL INTERPRETATIONS OF HEALTH, PHYSICAL EDUCATION AND RECREATION. *(ATE) Three hours credit.*

A foundational approach to interpretations and objectives of physical education, health education, and recreation in general education. Designed to assist the mature professional major in developing a sound philosophic background for continued growth in the professional field.

HPER 236. SOCIOLOGICAL IMPLICATIONS OF PHYSICAL EDUCATION. *Three hours credit.*

It is the main objective of this course to examine and utilize basic sociological concepts and demonstrate their manifestations within the area of physical education.

***HPER 237. SOCIO-PSYCHOLOGICAL CONCEPTS OF LEISURE.** *Three hours credit.*

It is the purpose of this course to familiarize the student with basic sociological and psychological concepts of leisure.

HPER 240. HEALTH AND PHYSICAL EDUCATION FOR THE HANDICAPPED. *Three hours credit.*

This course is designed to acquaint students with the basic characteristics of the handicapped in terms of their physical, mental, emotional, and social characteristics as they are related to participation in physical education, recreation, and outdoor education activities. Emphasis will be placed on the interests, needs, limitations, and potentialities of the handicapped. Special consideration will be given to the type of program, modification of activities, introduction of new activities, and approach to teaching the mentally retarded and physically handicapped.

HPER 245. ADVANCED TECHNIQUES IN TEACHING GYMNASTIC ACTIVITIES. *Four hours credit.*

Designed to assist the high school or college teacher with special problems in teaching and officiating gymnastic activities.

HPER 246. ADVANCED TECHNIQUES IN TEACHING INDIVIDUAL SPORTS. *Four hours credit.*

Designed to assist the high school or college teacher with special problems in teaching and officiating individual sports.

HPER 247. ADVANCED TECHNIQUES IN TEACHING TEAM SPORTS. *Four hours credit.*

Designed to assist the high school or college teacher with special problems in teaching and officiating team sports.

HPER 248. ADVANCED TECHNIQUES IN TEACHING DANCE ACTIVITIES. *Four hours credit.*

Special problems and procedures for teaching social, square and folk dance. For the advanced physical education major student.

HPER 250. ADMINISTRATION OF PHYSICAL EDUCATION. (ATE) *Three hours credit.*

A study of administrative problems in physical education for men and women dealing with budget and finance, legal aspects, purchase and care of equipment and supplies, programs, public relations, intramural activities, and class organization.

HPER 251. ADMINISTRATION OF COMMUNITY RECREATION. *Four hours credit.*

The course is concerned with the organization and administration of the community recreation program. Eleven essential areas of this subject are studied: fact-finding, survey, legal aspects, municipal organization, department organization, financing, records and reports, publicity, public relations, leadership, and program.

HPER 252. INTERNSHIP IN RECREATION. *Fifteen hours credit.*

Prerequisites, HPER 251, 268, 269, and 272. A course designed primarily to help students make the transition from the classroom to the practical situation. Opportunity is provided for students to assume the normal responsibilities involved in the conduct of various kinds of recreation activities. One quarter of full-time activity is required.

HPER 256. WORKSHOP IN MODERN DANCE. *Four hours credit.*

Problems connected with the staging of dance performances.

***HPER 257. DANCE HISTORY AND PHILOSOPHY.** *Four hours credit.*
History and development of dance as it is culturally determined and the philosophy influencing dance.

HPER 258. DANCE METHODS AND MATERIALS. *Four hours credit.*
Prerequisites, HPER 93, 94. Procedures and materials for teaching modern dance. For the dance education major and minor student. This includes dance accompaniment.

HPER 259. DANCE PRODUCTION IN HIGH SCHOOL AND COLLEGE.
Two hours credit.

Prerequisites, HPER 93, 94, 256. A practical application and principles which serve the presentation of dance. The course deals with a choreographic problem, the invention, manipulation, direction and production involving theatre application of set, and costume and light design.

HPER 260. SCIENTIFIC PRINCIPLES OF COACHING. *Four hours credit.*
Primarily for the athletic coach to assist him in teaching and coaching the usual major sports of the school competitive sports program. Designed to establish on a sound scientific basis the mechanical principles involved in developing techniques for sport competition.

HPER 264. SPORTS OFFICIATING FOR MEN. *Four hours credit.*
Designed for coaches, administrators, and officials. Considers general principles and philosophy of officiating as well as study of the mechanics of officiating the sports for men in the school program.

HPER 265. ADVANCED TECHNIQUES IN TEACHING FOOTBALL TO MEN. *Two hours credit.*

Designed to assist the in-service teacher of major sports for men with special problems in the field of football, including organization, strategy, personnel.

HPER 266. ADVANCED TECHNIQUES IN TEACHING BASKETBALL TO MEN. *Two hours credit.*

Designed to assist the in-service teacher of major sports for men with special problems in the field of basketball, including organization, strategy, personnel.

HPER 268. PROGRAMS IN RECREATION. *Four hours credit.*
Designed to prepare the student for effective planning of varied types of recreation programs. Special attention is given to programs for public playgrounds, community centers, and such special groups as the aging, teenagers, young adults, and the handicapped.

HPER 269. RECREATION FOR THE HANDICAPPED. *Three hours credit.*
Adaptation of recreation activities to meet the varying needs of handicapped individuals in hospitals, schools, homes, recreation and rehabilitation centers. Reports, discussions, observations, and visitations.

HPER 270. ADMINISTRATION OF ATHLETICS. *Three hours credit.*
The administrative problems confronted by the coach: management of athletic events, schedules, budgets, finances, athletic facilities and equipment, awards, public relations, and insurance.

HPER 271. SAFETY EDUCATION. *Three hours credit.*
A comprehensive course for preparing teachers and school administrators to assume responsibility for safety education and accident prevention programming in school and public service.

HPER 272. RECREATION LEADERSHIP. *Three hours credit.*
Reading, reports and projects covering the philosophy, methods, and materials for the recreation leader.

HPER 274. DRIVER EDUCATION I. *Three hours credit.*
Designed to prepare teachers in the organization and teaching of driver education and traffic safety programs in secondary schools. Primary emphasis is placed on teaching the classroom phase of driver education.

HPER 275. DRIVER EDUCATION II. *Three hours credit.*

Prerequisite HPER 274. An advanced course designed for driver education teachers. Problems related to administration, instruction, evaluation, and research in driver education programs will be studied. Course requires laboratory time in which prospective teachers of driver education practice on-the-street driving, receive instruction and practice on the multiple car driving range, and in the simulator training units.

HPER 280. CARE OF SPORTS INJURIES. *Three hours credit.*

Prerequisites, HPER 120, 121. Intensive course in care and treatment of athletic injuries with time devoted to each specific injury. The etiology, pathology, sign and symptoms, treatment, and adapted activities will be given for the major injuries.

HPER 302. INTRODUCTION TO RESEARCH IN HEALTH EDUCATION, PHYSICAL EDUCATION, AND RECREATION. *Three hours credit.*

(Required of all health education, physical education, and recreation majors at the Master of Arts level). An introduction as well as some application of the strategy and methods of research to problem solving in health education, physical education, and recreation.

HPER 304. SCHOOL HEALTH ADMINISTRATION. *Four hours credit.*

Designed to acquaint administrators, supervisors, and health educators with the planning and organizational aspects of the total school health program. Special attention is given to administrative and supervisory problems in health and safety instruction, health services and guidance, and healthful school living.

HPER 305. PUBLIC HEALTH PROBLEMS. *Four hours credit.*

This course encompasses basic facts and principles of public health at the local, state, national, and international levels including the relationships between public health departments, voluntary agencies, and the school health program.

HPER 310. EVALUATION AND RESEARCH IN PARKS AND RECREATION. *Four hours credit.*

A course designed to acquaint the graduate student with the types, methods, and areas of evaluation and research in the field of parks and recreation services. The student will be required to accomplish an actual evaluation in public recreation setting.

HPER 312. EVALUATION IN HEALTH, PHYSICAL EDUCATION AND RECREATION. *Four hours credit.*

Prerequisite, HPER 226. Designed to give the graduate student a sound background in the tools, techniques, and methods of evaluation. Special emphasis is given to the construction of both written and activity tests as well as the use of other evaluative tools.

HPER 320. ADVANCED ANATOMICAL KINESIOLOGY. *Three hours credit.*

Prerequisite, HPER 120. An advanced study of the anatomical and anthropometrical components of human movement.

HPER 321. ADVANCED MECHANICAL KINESIOLOGY. *Three hours credit.*

Prerequisite, HPER 120, 320. An advanced study of the mechanical components of human movement.

HPER 322. ADVANCED PHYSIOLOGICAL KINESIOLOGY. *Four hours credit.*

Prerequisites, HPER 120, 121, and 122. Effect of muscular activities on the various systems and organs of the body.

HPER 323. ADVANCED PSYCHOLOGICAL KINESIOLOGY. *Three hours credit.*

Prerequisite, HPER 123. An advanced study of the psychological components of human movement.

HPER 324. ADVANCED MATURATIONAL KINESIOLOGY. *Four hours credit.*

Prerequisites HPER 322 and 323. An advanced study of the organic, motor, and social aspects of human movement as affected by age group characteristics.

HPER 325. LABORATORY TECHNIQUES IN KINESIOLOGICAL RESEARCH. *Three hours credit. (Two hours lecture, two hours laboratory.)*

Prerequisite, HPER 122 or equivalent. An advanced course in the study and research of motor performance designed to provide the scientific background and laboratory experience essential for an understanding of the organismic responses associated with muscular activity. Students will have the opportunity to conduct experiments on selected topics.

HPER 336. THE SCIENCE OF BODY MECHANICS. *Four hours credit.*

Prerequisite, HPER 120, 220 or 232. A course designed to analyze movement of various activities and the recognition of and exercises for remedial defects. Emphasis will be placed on problems of individual students in relationship to home or school situations.

HPER 340. CURRICULUM IN HEALTH AND PHYSICAL EDUCATION. *Four hours credit.*

The principles underlying curriculum construction, the various elements making up a curriculum, and experience in building a curriculum in either the field of health or physical education.

HPER 344. SUPERVISION OF PHYSICAL EDUCATION AND RECREATION. *Four hours credit.*

Concepts, principles, organization, and techniques of supervision for use by superintendents, supervisors, and teachers in the construction or supervision of programs in physical education and recreation.

HPER 350. SEMINAR IN HEALTH, PHYSICAL EDUCATION, AND RECREATION. *Two to four hours credit. (Each two hours of credit will require one additional laboratory hour of schedule time.)*

Designed for in-depth study by graduate students. Presents contemporary topics under the guidance of qualified graduate faculty and consultants. Topics such as Professional Preparation, Programming, or Contemporary Problems in one of the three areas might be listed as subtitles when this course is scheduled. Class may be repeated providing different subtitles are scheduled.

HPER 370. SOCIOLOGY OF SPORTS AND PHYSICAL EDUCATION. *Three hours credit.*

Designed to introduce the advanced graduate student to the inter-relatedness of sports, society, and physical education.

HPER 375. AREAS AND FACILITIES IN PHYSICAL EDUCATION AND RECREATION. *Four hours credit.*

Major problems involved in the planning, construction, and maintenance of varied types of physical education and recreation areas and facilities. Technical aspects of construction and maintenance will be emphasized.

HPER 376. SEMINAR IN CONTEMPORARY PROBLEMS IN RECREATION. *Four hours credit.*

Detailed study of important problems in the area of leisure and recreation in America.

HPER 377. PARKS AND RECREATION MANAGEMENT. *Four hours credit.*
A course designed to prepare the graduate student in the more complex areas of present-day management, including federal grants, budgets, consultation, workshops, professional certification, and legislation.

HPER 390. ISSUES AND TRENDS IN HEALTH EDUCATION, PHYSICAL EDUCATION AND RECREATION. *Four hours credit.*

A course designed to provide detailed examination of the forces affecting the allied fields of Health Education, Physical Education, and Recreation. A study, in depth, of problems will be expected of each student according to his area of specialization.

HPER 401. ANALYSIS OF RESEARCH AND LITERATURE IN HEALTH AND PHYSICAL EDUCATION. *Four hours credit.*

Appraisal of research and significant literature in health and physical education for the purpose of orienting the student to possible areas of research and developing understanding and appreciation of writings in the field.

HPER 402. HISTORY OF HEALTH, PHYSICAL EDUCATION, AND SPORT. *Four hours credit.*

The purpose of this course is to study the changing concepts of physical education throughout its history; to identify and analyze the forces which have influenced the program; and to determine the role which physical education should play in America today.

HPER 403. RESEARCH SEMINAR IN HEALTH AND PHYSICAL EDUCATION. *Four hours credit.*

Prerequisite, HPER 401. Designed to serve the needs of doctoral candidates planning to conduct research in health education, physical education, or allied areas. Presents techniques and procedures in research and aids in the development of the required research outline for the doctoral degree.

HPER 404. PROBLEMS IN HUMAN MOVEMENT. *Four hours credit.*

Prerequisite, possession of the knowledges related to advanced principles of structural, mechanical, physiological, psychological, and maturational kinesiology (see course descriptions for HPER 320, 321, 322, 323, and 324). Individual and group study of problems related to the scientific variables of human movement.

HPER 406. ADMINISTRATIVE INTERRELATIONSHIPS IN HEALTH, PHYSICAL EDUCATION AND RECREATION. *Four hours credit.*

The purpose of this course is to develop a better understanding of and skill in the administrative process as applied to the numerous interrelationships involved in the operation of programs of health, physical education and recreation.

HIGHER EDUCATION

HIED 391. HIGHER EDUCATION IN THE UNITED STATES. *Three hours credit.*

An overview of the history, philosophies, curricula, organization and administration of American colleges and universities with emphasis on their present status and problems.

HIED 392. ADULT EDUCATION. *Three hours credit.*

A survey of the field of adult education with special emphasis on history, philosophy, functions, institutions, and methods.

HIED 393. THE JUNIOR AND COMMUNITY COLLEGE. *Three hours credit.*

The history, functions, present status, and problems of the junior college and the community college.

HIED 492. THE COLLEGE TEACHER. *Three hours credit.*

Presents college teaching as a profession including selection and preparation of instructors and the status, services and rewards of the profession. Also concerned with the application of psychology to college teaching, problems in improving college instruction, and the research function of the college instructor.

HIED 493. THE COLLEGE AND UNIVERSITY CURRICULUM. *Three hours credit.*

Outlines the major curricular offerings of American colleges and universities including general education, liberal arts education, vocational and professional education including teacher preparation and the academic administration involved in building and improving a curriculum.

HIED 494. COLLEGE ADMINISTRATION. *Three hours credit.*

Describes the organization and administration of American higher education. Includes administrative problems concerned with faculty policy, finance, student personnel, publications, and instruction. Takes up government and administration at all levels from the departmental offices to the board of trustees.

HISTORY

HIST 200. INTRODUCTION TO HISTORICAL RESEARCH. *Three hours credit.*

An introduction to the nature of history; what is history; why study history; how to study history; pursuit of evidence; familiarization with library catalogs; bibliographies and indexes. Selection of topic for research by student. Note taking; criticism; construction of research papers; elements of good English usage.

HIST 220. EUROPEAN CONTRIBUTIONS TO AMERICAN CULTURE. *Fifteen hours credit.*

The major contributions of European civilization to American culture are studied for five weeks on campus and then one month in Europe. Contemporary influences and relationships are included as well as origins of social, economic and political institutions. The background of art and architecture will also be covered.

HIST 221. CULTURAL BACKGROUND OF WESTERN-SOVIET RUSSIAN RELATIONS. *Fifteen hours credit.*

The background of Soviet Russia's relations with the West is studied on campus for five weeks followed by a study tour of selected Western European capitols, Leningrad and Moscow. Excursions are made to Oxford, Versailles, Peterhof and Zagorsk or other places of historical importance.

HIST 233. COLONIAL LATIN AMERICAN HISTORY. *Five hours credit.*

A history of the discovery and colonization of Latin America with particular emphasis on the Spanish and Portuguese institutions, and the events leading up to the wars for independence.

HIST 234. HISTORY OF LATIN AMERICA. *Five hours credit.*

A study of the development of the economic, educational, political, religious, and social institutions of Latin America. Consideration will be given to United States relations with Latin America, and to the status of and prospects for democracy in Latin American nations.

HIST 236. CONTEMPORARY MEXICO AND THE CARIBBEAN. *Three hours credit.*

A study of the developments and problems of contemporary Mexico and republics of Central America and the Caribbean.

HIST 237. HISTORY OF THE ABC COUNTRIES OF SOUTH AMERICA. *Three hours credit.*

Detailed study of the Rio de la Plata region in Latin America including Argentina, Brazil, Chile, Paraguay and Uruguay. Designed to show historical development—special attention to European and African cultural influences, political processes, economic changes. Augments course offerings in Latin American history for M.A. students choosing this as one of their fields.

HIST 238. HISTORY OF THE ANDEAN COUNTRIES OF SOUTH AMERICA. *Three hours credit.*

Provide in-depth study of the Andean region of Latin America—attention to historical background of such contemporary problems as Indian assimilation, urbanization, social integration, political instability. Also augments offerings in Latin American history for the M.A. student who chooses this as one of his fields.

HIST 240. HISTORY OF AFRICA TO 1899. *Five hours credit.*

A general history of the African continent from the early civilizations through

the early European explorations and settlements to the British, French, Belgian, and other European colonizing activities of the nineteenth century.

HIST 241. HISTORY OF AFRICA FROM 1899. *Five hours credit.*

A survey of Africa prior to colonial rule, the impact of the colonialism and the independence movement, with emphasis on the development of the African states, their politics, economics and society.

HIST 247. CONSTITUTIONAL HISTORY OF MEDIEVAL ENGLAND.
Three hours credit.

The development of English legal, constitutional and administrative institutions from their Anglo-Saxon origins to 1485. Stress will be placed on the medieval antecedents of the modern English governmental departments as well as on the development of the common law, the jury system, and the rise of representative government. Emphasis will also be placed on the role of these institutions in the transition from a feudal to a national monarchy.

HIST 248. EARLY ENGLISH HISTORY: TUDOR AND STUART ENGLAND, 1485-1688. *Three hours credit.*

The course will emphasize the political and constitutional stability reached in England during the two centuries following the Hundred Years' War. Constitutional, social, and economic development will be stressed.

HIST 249. RECENT ENGLISH HISTORY: 1689 TO THE PRESENT. *Three hours credit.*

The course will trace the developments in English constitutional, political, economic, and social life from the time of the great Revolution in 1688-89. Emphasis will be placed on the growth of political liberalism in England, and on the role which England has played in the modern world. The role of England as a world power since 1713 will be similarly studied.

HIST 251. THE EARLY COLONIAL PERIOD: 1492-1689. *Three hours credit.*

This course will investigate in depth the background of European colonization, the Age of Discovery and Exploration, the founding of the first British Colonial Empire, and the history of that Empire until 1689.

HIST 252. EIGHTEENTH CENTURY AMERICA: 1689-1763. *Three hours credit.*

This course will investigate in depth the development of the North American British colonies in the 18th Century. Emphasis will be placed on the origin of the Empire and on the colonial economy, political structure, and a society of the time.

HIST 253. GREAT MEN IN AMERICAN HISTORY. *Three hours credit.*

A biographical approach to American history focusing on the lives and contributions of such great Americans as Franklin, Washington, Hamilton, Jefferson, Marshall, Jackson, Lincoln, Holmes, Theodore Roosevelt, Wilson, and Franklin Roosevelt.

HIST 255. HISTORY OF THE TRANS-MISSISSIPPI WEST: 1821-1890.
Three hours credit.

Examination of the Westward movement from the settlement of Texas to the end of the frontier period. Major topics stressed include frontier monetary problems, relation of Mormons to the move west, pre-emption and homestead acts, forty-niners and fifty-niners, transcontinental railroads, and the range-cattle industry.

HIST 256. EMERGENCE OF A NEW NATION: 1763-1815. *Five hours credit.*

Background of Revolution, the conflict between the Colonies and Great Britain, Declaration of Independence, Treaty of Paris, 1783, Articles of Confederation, United States Constitution, administrations of Washington, Adams, Jefferson, and Madison.

HIST 257. NATIONALISM AND SECTIONALISM IN AMERICA: 1815-1848. *Three hours credit.*

A detailed survey of the period 1815-1848 in American history. Major topics examined include post-1815 nationalism, political trends of the Jacksonian Era, the development of sectionalism, religion and reform, expansion and the Mexican War.

HIST 258. THE CIVIL WAR AND RECONSTRUCTION: 1848-1877. *Three hours credit.*

A detailed survey of the period 1848-1877 in American history. Major topics examined include political upheavals of the 1850's, growth of southern nationalism, Civil War years, and problems of the Reconstruction Era.

HIST 259. ANCIENT HISTORY. *Four hours credit.*

The life and institutions of the Ancient Near East and Greece, cultural development, living conditions, and recent archaeological discoveries.

HIST 260. HISTORY OF GREECE. *Four hours credit.*

An advanced course in the history of Ancient Greece placed in the context of the river valley civilizations of the Near East. Emphasis will be placed on the various aspects of Hellenic and Hellenistic life and culture in the light of recent archaeological and historical discoveries.

HIST 261. ROMAN HISTORY. *Five hours credit.*

An advanced study of Roman Civilization from the founding of the Republic to the decline of the Empire. Roman life, institutions and cultural heritage will be emphasized.

HIST 263. RENAISSANCE AND REFORMATION. *Five hours credit.*

A study of political, social, economic, religious and cultural development from 1300-1600.

HIST 264. HISTORY OF MEDIEVAL THOUGHT. *Three hours credit.*

An advanced study of Medieval life and civilization from the beginning of the Middle Ages to about 1300. The course will emphasize Medieval philosophy, theology, literature, art and culture from Augustine to Dante.

HIST 265. THE OLD REGIME. *Five hours credit.*

A study of the political, social, economic, intellectual, and cultural development from the end of the Reformation period to the French Revolution.

HIST 266. FRENCH REVOLUTION AND NAPOLEON. *Five hours credit.*

A study of the causes of the Revolution, its classical pattern, the rise of nationalism, and the significance of Napoleon in France and abroad.

HIST 267. EUROPE: 1815-1870. *Five hours credit.*

A study of the period from the Congress of Vienna through the unification of Germany. Includes the history of ideas, development of political history, and socio-economic changes.

HIST 268. EUROPE: 1870-1914. *Five hours credit.*

A study of the political, social, economic, intellectual, and diplomatic developments from the Franco-Prussian War to the beginning of World War I.

HIST 269. CONTEMPORARY WORLD HISTORY. *Five hours credit.*

An advanced study of world developments in recent times which will investigate the period from 1900 to the present. The course will discuss the ideologies of communism, socialism, fascism, and democracy in their world setting.

HIST 270. HISTORY OF MODERN FRANCE: 1815 TO THE PRESENT. *Four hours credit.*

The course will examine in depth the important political and constitutional issues in French history from the fall of Napoleon I to the present day. It will focus on the Restoration regimes, the Second Empire, and the Third, Fourth, and Fifth Republics.

HIST 271. DIPLOMATIC HISTORY OF THE UNITED STATES TO 1889.*Three hours credit.*

A survey of American diplomatic history from the war for independence to 1889, emphasizing the problems of expansion and relations with major European, Latin American, and Far Eastern countries.

HIST 272. DIPLOMATIC HISTORY OF THE UNITED STATES SINCE 1889.*Three hours credit.*

A survey of American diplomatic history since 1889, emphasizing the problems of peace and war and the internationalist-isolationist conflict in the twentieth century.

HIST 273. CONTEMPORARY AMERICAN FOREIGN POLICY. *Three hours credit.*

An analysis of the theory and practice of American foreign policy since World War II, emphasizing the origins, history, and significance of the Cold War.

HIST 275. THE GILDED AGE: 1868-1892. *Four hours credit.*

Examination of the political, economic, social, and cultural developments in the United States during the Gilded Age from Grant's inauguration to the defeat of President Harrison in 1892. Industrial expansion and the low tone of political morality will be stressed.

HIST. 276. ERA OF REFORM: 1892-1917. *Four hours credit.*

A study of the reform movements that developed in response to America's great industrial transformation of the late nineteenth century. Agrarian agitation, Populism and Free Silver, Progressivism, and Wilson's New Freedom will be stressed.

HIST 277. RECENT UNITED STATES HISTORY TO 1929. *Three hours credit.*

A study of the background of the modern age in America, with emphasis on the reaction to nineteenth century social and intellectual ideas and practices. Political and economic developments up to the Great Depression also are stressed.

HIST 278. CONTEMPORARY UNITED STATES HISTORY: 1929 TO PRESENT. *Three hours credit.*

A cultural, political, and economic study of American history from the Great Depression to the present, emphasizing the depression, the New Deal, world wars and "police actions," and such recent developments as poverty programs, Black Power and other minority movements, and the social rebellion.

HIST 280. HISTORY OF RUSSIA TO 1917. *Four hours credit.*

Surveys the political, social, economic, and cultural history of Russia from Kievan Rus up to the Bolshevik Revolution of 1917. Emphasis is placed on those Russian traits that have continued into the Soviet period.

HIST 281. HISTORY OF THE SOVIET UNION. *Four hours credit.*

Surveys the political, social, economic, and cultural history of the Soviet Union from 1917 to the present. Continuity with pre-Soviet Russia is emphasized as well as change.

HIST 282. RUSSIAN HISTORY SEMINAR. *Four hours credit.*

The class will consider pre-Soviet history, or if the student has also taken HIST 281, the Soviet period. Students will research, write and present a paper, which may be taken from either period. Lectures will cover Russian historiography and bibliography.

HIST 286. DIPLOMATIC HISTORY OF MODERN EUROPE: 1914-1939. *Three hours credit.*

A specialized course in the study of European diplomacy, its methods and accomplishments, utilizing lectures and analyses of basic documents and treaties.

HIST 287. RECENT DIPLOMATIC HISTORY OF MODERN EUROPE: 1939 TO PRESENT. *Three hours credit.*

A specialized course in the study of recent European diplomacy, its methods and accomplishments, utilizing lectures and analyses of basic documents and treaties.

HIST 288. HISTORY OF MODERN GERMANY. *Four hours credit.*

A survey of German history from World War I, including analysis of events from the outbreak of World War I to the present, through the reading of original sources and documents.

HIST 289. REVOLUTIONS IN MODERN TIMES. *Four hours credit.*

The four great revolutions of the Western world, namely, the English, American, French, and Russian revolutions are compared in a search for causes and possible patterns of revolution. Post-World War II revolutions are analyzed to find economic, social, and intellectual causes of the revolutionary period of today.

HIST 290. INSTITUTE IN CHANGE IN UNITED STATES HISTORY. *Twelve hours credit.*

An analysis and study of the social, political, economic, and diplomatic forces that have shaped major developments in United States history from 1776 to the present. A course for high school history teachers who have not majored in history. Special attention will be paid to the methods and materials of teaching history.

HIST 294. HISTORY OF CHINA TO 1840. *Four hours credit.*

The history of China to 1840 will be considered from the point of view of political and cultural development.

HIST 295. HISTORY OF JAPAN TO 1868. *Four hours credit.*

The history of Japan up to 1868 will be considered from a cultural and political aspect. Emphasis will also be placed upon social development.

HIST 296. THE FAR EAST SINCE 1840. *Four hours credit.*

An advanced study of the Far East in modern times, beginning with the impact of western powers from the mid-nineteenth century to the present day. Emphasis will be on internal changes in political, social, economic and cultural aspects of the nations studied.

HIST 298. HISTORY OF INDIA AND PAKISTAN. *Five hours credit.*

A brief history of the peoples of the Indian subcontinent from early times to the present. Emphasis will be placed on the rise and decline of various cultures, Indo-Islamic culture, the advent of the English and their contribution to the birth of nationalism, and the organization of India and Pakistan as independent states.

HIST 310. SEMINAR IN UNITED STATES DIPLOMATIC HISTORY. *Three hours credit.*

The course will examine in depth important issues in American foreign policy from the founding of the nation to the present day.

HIST 313 SEMINAR IN AMERICAN COLONIAL HISTORY. *Three hours credit.*

This course is designed for the student who wishes to deepen his knowledge of the history of Colonial America through directed research.

HIST 320. SEMINAR IN THE JACKSONIAN ERA: 1815-1850. *Three hours credit.*

An intensive survey of the social, economic, and political developments of the Middle Period of American history. Major themes are the advent of industrialism, democracy, Manifest Destiny, and the genesis of a bitter sectional controversy.

HIST 321. SEMINAR IN THE AMERICAN CIVIL WAR. *Three hours credit.*
Slavery in America, the crises of the 1850's and the election of 1860, secession, conflict between the states, the Emancipation Proclamation, the reconstruction of the defeated South.

HIST 323. SEMINAR IN SOUTHWEST HISTORY. *Three hours credit.*

In this course Spanish and Anglo historical developments in Texas, New Mexico, Arizona, Southern California and Southern Colorado will be traced from the Coronado expedition in the sixteenth century to the present. Although the settlement period will be stressed, the political, social and economic developments since 1890 also will be analyzed.

HIST 325. SEMINAR IN THE POPULIST-PROGRESSIVE AGE: 1887-1920. *Three hours credit.*

A study of the Populist and Progressive periods in America with particular attention given to developments in the Rocky Mountain West. Research in primary sources located in nearby libraries and archives will be stressed as well as familiarization with the secondary sources in the college library.

HIST 330. GRADUATE READINGS COURSE IN THE SOCIAL SCIENCES AND HISTORY. *Four hours credit.*

This course is designed to give doctoral candidates who are deficient in the social sciences an opportunity to acquire a basic amount of knowledge and understanding of our cultural heritage and of the political, social, and economic problems that confront American and the rest of the world. Possible solutions to contemporary problems are examined. This course is not applicable to a graduate degree in History or the Social Sciences.

HIST 332. SEMINAR IN THE EMERGENCE OF INDUSTRIAL AMERICA. *Three hours credit.*

A study of the emergence of industrialism in America during the latter part of the nineteenth century and the first decade of the twentieth century with emphasis on the technology and entrepreneurial methods of the new industrial order and the political and social problems created by the industrial transformation.

HIST 334. SEMINAR IN RECENT AMERICAN HISTORY. *Three hours credit.*

Stated in general terms, the objective of the course is to allow the student who has become familiar with the chronological sequence of events in American history to examine in depth the most significant topics, issues, and trends in the evolution of the American society.

HIST 338. SEMINAR ON FRANKLIN D. ROOSEVELT AND THE NEW DEAL. *Three hours credit.*

A study of the political, social, economic and diplomatic history of the 1932-1945 era.

HIST 339. SEMINAR IN AMERICAN INTELLECTUAL HISTORY. *Three hours credit.*

A study of the intellectual aspects of characteristic institutions and the changing modes of thought in American life from the Colonial period to the present day. The relationship of intellectual life to social and economic conditions is stressed.

HIST 340. SEMINAR IN ANCIENT HISTORY. *Three hours credit.*

A graduate course in ancient history designed to acquaint the student with select problems and sources in either Ancient, Greek, or Roman history.

HIST 345. SEMINAR IN MEDIEVAL HISTORY. *Three hours credit.*

A graduate course in Medieval history designed to acquaint the student with select problems in Medieval history. The course will emphasize techniques of research, setting up a historical problem, composing the paper as well as presentation and defense of the paper.

HIST 350. SEMINAR IN THE FRENCH REVOLUTION AND NAPOLEON. *Three hours credit.*

A graduate course in French history designed to introduce the student to some of the main problems and interpretations of the French Revolution. Emphasis

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will be placed on techniques of research, and conception and organization of a historical problem.

HIST 358. SEMINAR IN MODERN GERMAN HISTORY. *Three hours credit.*
An intensive study of selected aspects of 20th century Germany will be undertaken, based on readings and directed research.

HIST 362. SEMINAR IN EUROPEAN IDEOLOGIES. *Three hours credit.*
Traces the history of three European ideologies, namely, socialism, communism, and fascism, from the beginning of the 19th century to the present. These will be related to their interaction with liberalism, nationalism and democracy.

HIST 364. SEMINAR IN MODERN EUROPEAN INTELLECTUAL HISTORY. *Three hours credit.*
An intellectual history of modern Europe tracing the ideas of man from the age of the Enlightenment through the main currents of thought in the contemporary world, with emphasis on the transmission of the ideas of the great social thinkers.

HIST 365. SEMINAR IN LATIN AMERICAN HISTORY. *Three hours credit.*
To give the graduate student an opportunity to conduct research on a specific topic in Latin American history utilizing both primary and secondary resource materials. He will be expected to employ a variety of research methods as well as having a reading knowledge of Spanish.

HIST 380. READINGS IN AMERICAN DIPLOMATIC HISTORY. *Three hours credit.*
This readings course will enable the advanced graduate student to deepen his knowledge of United States diplomatic history through a program of directed readings.

HIST 384. READINGS IN EARLY AMERICAN HISTORY. *Three hours credit.*
This readings course is designed to enrich the student's knowledge of Early American History by allowing him to read and evaluate selected works from the literature of the field.

HIST 386. READINGS IN AMERICAN HISTORY: THE MIDDLE PERIOD. *Three hours credit.*
An analysis of selected works from the bibliography of the Middle Period of American history.

HIST 390. READINGS IN MODERN EUROPEAN HISTORY. *Three hours credit.*
An analysis of selected works concerning a selected topic in modern European history.

HIST 399. HISTORIOGRAPHY. *Three hours credit.*
Required of all graduate students majoring in history. An examination of the great historians and the major schools of historical interpretation from classical Greece to the twentieth century.

HOME ECONOMICS

HEC 201. ART IN CONTEMPORARY LIVING. *Three hours credit.*
A consideration of the general scope of design as well as a study of artistic philosophies relative to developing design awareness and appreciation.

HEC 213. MANAGING FAMILY RESOURCES. *Three hours credit.*

A study of the management of human and material resources in achieving family goals. Work simplification, efficient planning and management of family finances are studied in detail.

HEC 215. CONSUMER PROBLEMS OF THE FAMILY. *Three hours credit.*

This course is designed to give college students a background of practical information and the applications concerning consumer and financial problems of the family.

HEC 219. HOME MANAGEMENT RESIDENCE. *Three hours credit.*

Prerequisites HEC 41, 111, 142, 248. Students live in Margaret Roudebush Home Management House where they put into practice desirable standards of home living.

HEC 223. THE FAMILY. *Three hours credit.*

A study of the family in present day America. Considers functions of the family and forces affecting it; variations in family values and practices; roles, adjustments, relations and problems of adult and child members. Designed for teachers of adolescents and adults.

HEC 231. INFANT AND CHILD CARE. *Three hours credit.*

A study of growth patterns from conception through infancy and the third year. Includes prenatal and postnatal factors influencing early development; guidance and provision for care, and the responsibilities of adults for providing a favorable home environment; the effect of these factors on later years.

HEC 233. DEVELOPMENT AND GUIDANCE OF THE YOUNG CHILD.

Four hours credit. (Three hours lecture, two hours laboratory.)

The physical, emotional and social growth processes as they apply in understanding the total development of the pre-school years with appropriate guidance procedures emphasized. The functions, techniques and physical setting of the pre-school are studied.

HEC 234. CURRICULUM ENRICHMENT FOR YOUNG CHILDREN. *Three hours credit.*

Prerequisite, HEC 233. A study of the sources and use of art, literature, music and science activities in the development of preschool children's curriculum. (Majors, take in conjunction with HEC 235.)

HEC 235. PARTICIPATION IN PRE-SCHOOL. *Three hours credit. (Six hours laboratory per week.)*

Prerequisite, HEC 233. Experience with children in the pre-school situation supplemented by readings, films and discussions. Emphasis on child growth through children's interests and activities. (Take in conjunction with HEC 234.)

HEC 237. ADMINISTRATION OF PROGRAMS FOR YOUNG CHILDREN. *Three hours credit.*

Prerequisite, HEC 234. A course in program planning for young children and experience in administrative responsibilities. (Majors take at the same time as HEC 238.)

HEC 238. PRE-SCHOOL PRACTICUM. *Three hours credit. (Six hours laboratory per week.)*

Prerequisites HEC 233, 234, 235. Sources and uses of play equipment for large and fine coordinations, for dramatic play and for the materials used in musical and creative development. The laboratory sessions give students practical application of these uses as they apply to the child's needs.

HEC 239. PARENT EDUCATION. *Three hours credit.*

This course deals with relationships of parents and children: resources for meeting problems with emphasis on discussion as a method.

HEC 243. PRESERVATION OF FOOD I. *Two hours credit. (One hour lecture, two hours laboratory.)*

The principles of making jellies, jams, pickles and relishes are studied. Products are made. Problems of deep freezing foods are discussed. The purchase and care of the home freezer are included.

HEC 244. PRESERVATION OF FOOD II. *Two hours credit. (One hour lecture, two hours laboratory.)*

Open kettle, water bath, pressure cooker, quick freeze methods of food preservation are discussed and home methods of these types of food preservation are practiced in the laboratory.

HEC 245. EXPERIMENTAL COOKERY. *Three hours credit. (Two hours lecture, two hours laboratory.)*

Prerequisites HEC 41, 142. An opportunity to determine the effects of temperature, time, and different manipulations on foods. Commercial products are tested and compared with home methods of preparation.

HEC 246. QUANTITY COOKERY. *Four hours credit. (One hour lecture, six hours laboratory.)*

Prerequisites HEC 41, 51, 142. Meal planning, techniques of food buying and application of cookery principles to large quantity food service. The facilities of student dining halls, student center, and the school lunch program are used as practice laboratories.

HEC 247. INSTITUTIONAL MANAGEMENT. *Five hours credit. (Four hours lecture, two hours laboratory.)*

The organization and management of various types of institutions. Specific emphasis is given to problems of personnel, the physical plant, and efficient work schedules. The food-service areas of various types of institutions are selected for study.

HEC 248. MEAL PLANNING AND SERVICE. *Four hours credit. (Two hours lecture, four hours laboratory.)*

Prerequisites HEC 41, 142, CHEM 40. Individual planning and purchasing of food. Gracious serving of meals on three income levels involving time and energy management. The study of linens, china, glass, and silverware; their purchase and care.

HEC 251. NEW TRENDS IN NUTRITION. *Three hours credit.*

(May be substituted for HEC 51.)

A detailed study of the value of carbohydrates, fats, proteins, minerals and vitamins in human nutrition. A comprehensive study of nutritional problems in health education. Food as an aid to positive health is stressed. A study of the food needs of growing children in the elementary and secondary school is made.

HEC 252. DIET THERAPY. *Three hours credit.*

Prerequisite, HEC 51. A study of the fundamental principles involved in the treatment of disease through diet. Emphasis is given to modification of normal diet.

HEC 253. ADVANCED NUTRITION. *Three hours credit.*

Prerequisite, HEC 51. A review of the fundamentals of human nutrition is made. Emphasis given to recent development in human nutrition. Application of principles of nutrition to community, state, national and world problems and needs. Readings and reports from current literature.

HEC 256. INFANT AND CHILD NUTRITION. *Three hours credit.*

Prerequisites, HEC 51, 231. A study of the principles in nutrition for maternal, infant, and child health; and an experience in basic food preparation.

HEC 262. DEMONSTRATION TECHNIQUES. *Two hours credit. (One hour lecture, three hours laboratory.)*

Prerequisites HEC 41, 92. Practice in the techniques of demonstrating before audiences. All phases of the Home Economics field will be used to furnish types of demonstrations.

HEC 369. EVALUATION IN HOMEMAKING EDUCATION. *Three hours credit.*

A study of principles and procedures in appraising student achievement of educational goals. Emphasis on evaluation as an integral part of the teaching and learning process. Experience provided in developing procedures and instruments for use in teaching situations.

HEC 376. HOUSING AND FAMILY NEEDS. *Three hours credit.*

A study of the relationship of family values and socio-economic factors as they relate to: apartment, single family structure, low income dwellings, housing for the aged. Consideration will be given to problems involving land use, urban sprawl and urban renewal.

HEC 378. SURVEY OF FURNITURE DESIGN. *Three hours credit.*

Prerequisite, HEC 171. A study of the dominant influences and characteristics of historical and modern furniture, ornamental and architectural design.

HEC 381. ADVANCED TEXTILES. *Three hours credit.*

Prerequisite, HEC 81. A study of recent textile developments. Problems of individual interest are considered. A study of Oriental, European, English and American textiles, the synthetic fibers and recent developments in textiles.

HEC 383. TECHNIQUES OF TEXTILE RESEARCH. *Four hours credit.*

A study which affords the student the opportunity of carrying out some visual and manual experiments that will correlate the fundamental facts and concepts of textile fibers with their behavior in use and care, and to assist her in applying this knowledge to herself as a teacher and as a consumer.

HEC 389. SEMINAR IN CLOTHING AND TEXTILES. *Three hours credit.*

Discussion and interpretation of current literature and research in the fields of textiles and clothing as a means of developing increased understanding of the selection, use and care of modern textile products.

HEC 394. PROBLEMS IN CLOTHING CONSTRUCTION. *Three hours credit. (Two hours lecture, two hours laboratory.)*

Prerequisites, HEC 92, 193. This course is planned for graduate students with a background of knowledge of the fundamentals of clothing construction. Opportunity will be presented to develop greater skill in construction processes, fitting techniques and alteration of ready-to-wear.

HEC 395. ADVANCED DRESS DESIGN AND CLOTHING CONSTRUCTION. *Three hours credit. (Two hours lecture, two hours laboratory.)*

Prerequisites, HEC 92, 193, 195, or 295. Individual patterns designed from the basic block made in HEC 195 or HEC 295 are used in constructing garments. Fitting problems and construction techniques of the entire class will be used to provide breadth of learning experiences. This will provide the student opportunities to develop more knowledge and skills in these areas of clothing construction.

HEC 396. DRESS DESIGN IN DRAPING. *Four hours credit. (Two hours lecture, four hours laboratory.)*

Prerequisite, HEC 195. Creative experiences in dress design through draping fabric on a form which the student makes to her own measurements. Basic problems in draping construction are emphasized. One original garment is completed.

HEC 398. HISTORY OF COSTUME. *Three hours credit.*

A study of the development of the costume through the ages and its influence on the designs of present day clothing. The development of costumes in the couturier houses of Europe and America is considered.

HEC 399. CLOTHING ECONOMICS. *Three hours credit.*

A study of family and individual clothing problems: standardization, labeling, consumer protection, recent textile developments, consumer purchasing surveys, customs and wholesale production methods. The relation of fashion to manufacturing and consumption of clothing.

HUMANITIES (Administered by English Department)

HUM 220. GREEK CULTURE. *Fifteen hours credit.*

Five weeks' study of Greek art, mythology, and literature on the campus. This will be followed by four weeks in Athens, Delphi, the Peloponnesus and Crete with lectures by outstanding authorities in aspects of Greek culture at the appropriate sites.

HUM 240. ADVANCED COURSE IN THE HUMANITIES. *Four hours credit.*

Prerequisites, HUM 1, 2, and 3. The study of a specific great literary work in its setting of history, philosophic concepts, and contemporary arts.

HUM 330. GRADUATE READINGS COURSE IN THE HUMANITIES. *Three hours credit.*

This course is designed to acquaint graduate students with some of the major concepts, terms, and creative figures in the fields of literature, art, painting, and music. This course not applicable to a graduate degree in Humanities.

INDUSTRIAL ARTS

IA 211. PROBLEMS IN BINDERY ORGANIZATION. *Three hours credit.*

Organization of a bindery relating to the library, classroom, and as a general shop unit. Development of courses to meet individual needs.

IA 215. INDUSTRIAL CRAFTS. *Three hours credit.*

Design, construction and demonstration experiences in the craft areas of graphic arts, leather, metal, plastics, wood, similar areas and materials as they apply to industrial arts shop, general shops, school crafts and club activities, and recreational craft programs.

IA 216. DESIGN PROBLEMS IN LEATHER. *Two hours credit.*

Techniques in the designing and construction of leather-craft projects for the junior and senior high school unit or general shop.

IA 217. ADVANCED LEATHERCRAFT. *Three hours credit.*

Prerequisite, IA 216. Organization, teaching problems, and advanced techniques in leathercraft. Development of course material suitable to a unit or general shop.

IA 218. DESIGN PROBLEMS IN SYNTHETIC MATERIALS. *Two hours credit.*

Design and techniques of construction in the area of synthetic craft materials. Development of course units suitable to a unit or general shop on the junior or senior high school level.

IA 219. ADVANCED PLASTICS. *Three hours credit.*

Advanced techniques and problems in the field of plastics. Fabrication design and construction of projects in the area of synthetic craft materials for a unit or general shop. Development of course materials suitable to a unit or general shop.

IA 220. COURSE ORGANIZATION IN INDUSTRIAL ARTS. *Three hours credit.*

Criteria underlying the organization of a course of study in industrial arts. Techniques by which courses are developed or revised. Each student prepares a course of study in the field of interest.

IA 232. IMPROVEMENT OF INSTRUCTION IN THE ARTS. *Three hours credit.*

An analysis of current difficulties and weaknesses in teaching the arts. Curriculum problems, objectives, methods and administration and community pressures are studied.

IA 233. MATERIALS OF INDUSTRY. *Three hours credit.*

A study of the origin of the materials used in industrial arts classes and processes involved in the manufacture of each material. Ways of presenting the related information and consumer knowledge of each material are considered.

IA 234. TEACHING THE INDUSTRIAL ARTS. *Three hours credit.*

Problems in planning industrial arts courses. Philosophy, objectives, evaluation, and school shop organization are considered.

IA 235. HISTORY AND PHILOSOPHY OF INDUSTRIAL ARTS. *Three hours credit.*

A basic understanding of the history of industrial arts, with emphasis on developing an individual philosophy. A study of the conflicts and relationship of philosophy to actual practice in a functional program of industrial arts.

IA 236. PRINCIPLES OF GENERAL SHOP ORGANIZATION. *Three hours credit.*

The purpose and philosophy underlying the organization of general shops. Types of shops, problems of administration, cost, criteria for selecting areas of study and evaluation are considered.

IA 238. CURRENT THEORY AND PRACTICE IN THE ARTS. *Three hours credit.*

Current controversial issues which confront the teachers of the arts. Problems of standardization, laboratory organization, administrative and community attitudes, and correlation with other departments.

IA 240. GRAPHIC ARTS DESIGN AND LAYOUT. *Three hours credit.*

A study of the origin, development and application of the principles of design in the field of typography. Special emphasis is on the selection and use of type and illustrations for printing layout.

IA 241. COPY PREPARATION AND CAMERA PROCEDURES. *Three hours credit.*

Copy preparation for all the printing processes. Use of hot, cold, and photo type. Paste up procedures, camera techniques, and press production.

IA 242. COLOR SEPARATION FOR PHOTOMECHANICAL REPRODUCTION. *Three hours credit.*

Fundamentals of subtractive color theory as used in separating color copy. Handling of transparent and reflection copy. Special proofing, plate making and press operation.

IA 243. THEORY AND PRACTICE IN OFFSET LITHOGRAPHY. *Three hours credit.*

Includes copy preparation, camera and darkroom work, stripping and opaquing, plate making and offset press operation.

IA 250. CONTEMPORARY FURNITURE DESIGN AND FABRICATION. *Three hours credit.*

A brief introduction of recognized periods of furniture design leading to the present concept of functionalism and the techniques of applying contemporary design.

IA 254. ELEMENTARY SCHOOL INDUSTRIAL ARTS. *Three hours credit.*

Development of basic skills through elementary work in wood, metals, and other materials. Adaptation of work to classroom or small shops with limited equipment.

IA 256. ADVANCED UPHOLSTERY. *Two hours credit.*

The use of special techniques and materials relating to upholstery. The study of upholstery and its place in the public school shop.

IA 257. CONSTRUCTION PROBLEMS IN WOOD. *Three hours credit.*

For advanced woodworking students with special emphasis on construction problems relating to the building trades.

IA 261. ARCHITECTURAL DRAWING. *Three hours credit.*

Deals with the planning and drawing of a complete set of building plans with specifications. Emphasis placed on principles, practices, and techniques of house construction.

IA 262. MACHINE DRAWING. *Three hours credit.*

Principles of designing machines. Materials, processes and procedures will be discussed. Such areas as limit and tolerance dimensions, types of fits, screw threads and fasteners, and cam and gear drawing are included.

IA 264. INDUSTRIAL ARTS DESIGN. *Three hours credit.*

Principles of design as they apply to the several areas of industrial arts.

IA 270. ADVANCED GENERAL METALWORK. *Three hours credit.*

An advanced study in bench metalwork, sheet metal work, forge and foundry work.

IA 271. ADVANCED ART METAL. *Three hours credit.*

An advanced study in art metal including experiences in metal tooling, etching, sinking, raising, enameling and spinning of aluminum, copper and brass.

IA 272. ADVANCED WELDING. *Three hours credit.*

The processes and principles of welding including oxy-acetylene, arc, TIG and MIG welding. Consideration given to principles of teaching, course content, welding supplies and equipment suitable for the teaching of welding at the secondary and junior college levels.

IA 273. ADVANCED JEWELRY AND LAPIDARY WORK. *Three hours credit.*

Designed to give advanced work in jewelry construction and silversmithing. Student experiences include work in design, lapidary, fabrication, and casting as it applies to jewelry.

IA 274. MACHINE TOOL TECHNOLOGY. *Two hours credit.*

The operation of machine tools including milling machines, grinding machines, engine lathes and turret lathes, including emphasis on testing and precision measurement.

IA 275. ADVANCED MACHINE TOOL TECHNOLOGY. *Three hours credit.*

The operation and maintenance of machine tools, precision measurement and metals testing techniques, and instructional methods applicable to the secondary and junior college levels.

IA 281. PROBLEMS IN TEACHING GENERAL SHOP ELECTRICITY. *Three hours credit.*

A course designed for industrial arts teachers who needs to review and upgrade their understanding of modern developments in electronics. Emphasis also placed on laboratory organization and equipment problems related to the electronics area.

IA 282. MOTORS, GENERATORS, AND ELECTRICAL WIRING. *Two hours credit.*

Prerequisite, IA 281. A study of the fundamental types of DC and AC generators and motors used in electricity. Deals with construction, repair, and maintenance problems common to AC-DC motors and generators. Emphasis also placed on electronic measuring instruments and devices such as oscilloscopes, meter movements and other common test equipment.

IA 283. ELECTRONIC HARDWARE AND COMPONENTS. *Two hours credit.*

Prerequisite, IA 80. A study of the manufacture, application and function of electronic hardware and components used in industry. Vacuum tubes, transistors, coils, and capacitors are discussed.

IA 284. ELECTRONIC CIRCUITRY. *Three hours credit.*

Prerequisite, IA 283. A study of the basic electronic circuits used in industry

and some common applications of each. Such circuits as power supplies, amplifiers, oscillators, transmitters and receivers are considered.

IA 285. BASIC RADIO (AM-FM). *Three hours credit.*

Prerequisite, IA 284. A study of the characteristics of the AM and FM radio and problems involved in servicing. The procedures, techniques, and problems of making and repairing printed circuits in electronic equipment are considered. Study of circuitry and alignment of AM-FM radio receivers and transmitters.

IA 290. POWER FUNDAMENTALS. *Three hours credit.*

An advanced study of energy sources and the machines that convert into useful work. Emphasis placed on two-cycle and four-cycle engines and their principles of operation.

IA 291. EXTERNAL COMBUSTION ENGINES AND NUCLEAR POWER.
Three hours credit.

A study of reciprocating steam engines and steam turbines and their generating plants. Study will include the principles of operation, design, construction of the various steam engines and generating plants. Emphasis will also be placed on nuclear energy and its application to the generation of steam by means of the nuclear reactors.

IA 292. REACTION ENGINES. *Two hours credit.*

A study of the various continuous combustion engines. Study will include gas turbines, jets, and rocket engines. Emphasis will be placed on their principles of operation, design, and construction as well as their applications.

IA 293. DIRECT ENERGY CONVERSION. *Two hours credit.*

A study of the means of direct energy conversion and the possible applications of such devices. Emphasis placed on thermionics, thermodynamics, solar and photo cell operation, fuel cell, nuclear, and other exotic power generating systems.

IA 294. TRANSMISSION OF POWER. *Three hours credit.*

A study of the various methods of converting power into useful work. Study will include mechanical, hydraulic, and pneumatic transmission and the physical laws concerning this transmission. Emphasis will also be placed on mechanical drives, hydraulic and pneumatic circuits, pumps, valves, and other equipment used.

IA 320. ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL EDUCATION. *Three hours credit.*

A study of the purposes and programs of industrial education in secondary schools, including industrial arts and vocational-industrial education. Special emphasis on the program of vocational-industrial education as provided through the Smith-Hughes Act and other pieces of federal legislation.

IA 330. ORGANIZATION AND ADMINISTRATION IN INDUSTRIAL ARTS. *Three hours credit.*

Designed for teachers, supervisors and administrators of industrial arts. Emphasis placed on shop planning, teacher and school liability, shop organization and operation, accounting procedures, maintenance problems and purchase and replacement of equipment and supplies.

IA 331. A CRITIQUE OF MODERN INDUSTRIAL ARTS. *Three hours credit.*

A study of industrial arts philosophies, objectives, content, methods and evaluation with emphasis upon current and future implications for industrial arts education.

IA 332. SEMINAR IN INDUSTRIAL ARTS. *Three hours credit.*

An opportunity for students doing independent research to report and receive criticism.

IA 333. HISTORY OF INDUSTRIAL ARTS. *Four hours credit.*

A study of the origin, movement, and leaders responsible for theories and philosophies of industrial arts.

IA 334. INDUSTRIAL OCCUPATIONS. *Three hours credit.*

A study of industrial occupations as related to vocational, technical, and industrial arts education. It will include types of occupations, entrance requirements, sources of training, and other related information which would be of benefit to the industrial education teacher.

IA 335. PHILOSOPHY OF INDUSTRIAL ARTS. *Three hours credit.*

A study of the many factors which influence the development of a sound philosophy. Method and subject matter, terminology, development of aims, and the place of the arts in the history of man.

IA 336. CRITIQUE FOR GENERAL SHOP ORGANIZATION. *Three hours credit.*

Philosophy of the program, objectives, techniques of teaching and organization of general shops. Special problems of instruction and administration are also considered.

IA 337. DEVELOPMENT OF INSTRUCTIONAL AIDS IN INDUSTRIAL ARTS. *Three hours credit.*

Visual aids, instruction sheets, charts, graphs, and other instructional devices are planned and developed. The student will select, plan and construct, where appropriate, various instructional aids.

IA 338. CURRICULUM DEVELOPMENT IN INDUSTRIAL ARTS. *Three hours credit.*

Designed for industrial arts teachers, supervisors and administrators who need an understanding of content, objectives, and equipment to conduct classes of industrial arts in the public schools and colleges. Emphasis placed on objectives, methods of selecting course content, equipment, and research completed in this area.

IA 339. EVALUATION IN INDUSTRIAL ARTS. *Three hours credit.*

Problems in measuring industrial arts achievement. A study of the purposes of evaluation and the kind and types of instruments used. Interpretation of data leading to the improvement of instruction.

IA 343. ORGANIZATION OF THE GRAPHIC ARTS SHOP. *Three hours credit.*

The techniques and objectives of the graphic arts; their historical development and place in our cultural background; art in printing; shop planning, equipment and management; course content and organization.

IA 344. PROBLEMS OF DESIGN IN THE GRAPHIC ARTS. *Three hours credit.*

Centered around graphic arts problems found in individual projects, with an emphasis upon teaching students to recognize, appreciate and use the principles of design on the printed page.

IA 351. ORGANIZATION OF THE WOOD SHOP. *Three hours credit.*

Critical study of current practices. A "refresher" course for teachers who have been away from the field. Includes techniques in both bench and machine work.

IA 352. PROBLEMS IN WOODWORKING. *Three hours credit.*

A study of the problems the specialized teacher of woodworking in secondary schools must meet.

IA 362. PROBLEMS IN DRAFTING AND PLANNING. *Three hours credit.*

Objectives, course content, and teaching procedures of all units in drafting. Problems are set up in terms of individual needs.

IA 363. DESCRIPTIVE GEOMETRY. *Three hours credit.*

A study and an analysis of the space relationships of points, lines, and planes that precedes design. Emphasis is placed on orthographic projection, auxiliary view techniques, and revolution. In addition, time will be spent on practical applications of engineering and mathematical problems.

IA 365. TECHNICAL ILLUSTRATION. *Three hours credit.*

The technical illustrator's tools, skills, standards, and opportunities. A study of and practice in lettering, axonometric, oblique, and perspective drawings. Special treatments, including cutaway and exploded assemblies, shades and shadows.

IA 371. ADVANCED METAL CRAFT TECHNIQUES. *Three hours credit.*

Advanced metal tooling, etching, engraving, wire crafts, copper jewelry, forming, raising and spinning. Problems of organization and teaching techniques.

IA 373. ADVANCED LAPIDARY AND SILVER CRAFTS. *Three hours credit.*

Advanced techniques in silver with emphasis on the lost wax process, enameling, lapidary, plating and jewelry.

IA 374. ORGANIZATION OF THE METAL SHOP. *Three hours credit.*

Includes objectives, course content, shop organization, evaluation and problems of teaching the various phases of metalwork.

IA 375. PROBLEMS OF THE METAL SHOP. *Three hours credit.*

Prerequisite, IA 374. Advanced study in the organization of both unit and general metal shops and shop practice handled on the seminar basis, giving the graduate students an opportunity to work on problems in the field.

IA 380. ELECTRONICS. *Five hours credit.*

Prerequisite, IA 281. Problems in the teaching of electronics in industrial arts departments of the public schools and colleges. Course organization and content, methods of presentation, and laboratory equipment problems are considered.

IA 381. INDUSTRIAL ELECTRONICS. *Two hours credit.*

A study of selected materials, components and circuits involved in electronic devices in industry. Special emphasis will be given to basic theory of operation and possible applications of electronic equipment. Deals with fuel cells, solar cells, facsimile reproduction, photo-electrical devices, computers, radar, high frequency heating, motor controls, electronic counters and timers, resistance welding, electroluminescence lighting, and integrated circuits.

IA 395. PROBLEMS IN TEACHING POWER. *Three hours credit.*

Objectives, course content and teaching procedures in all units in power and power transmission. Problems are set up on the basis of individual needs.

IA 430. RESEARCH IN INDUSTRIAL ARTS. *Maximum of nine hours credit.*

A series of three courses designed to (1) study the results of research in education, their implication to industrial arts (2) to identify and isolate the major problems facing research in industrial arts (3) and to discuss the various means of designing, interpreting and reporting research information in industrial arts. This sequence is recommended for the doctoral students who are in residence working on their dissertations.

INTERDISCIPLINARY

ID 0200. AMERICAN SPEECH FOR FOREIGN STUDENTS. *No hours credit. (\$10.00 fee required.)*

This course is designed for students who are using English as a secondary language. An evaluation will be made of each student's special needs. Emphasis will be centered on vocabulary, pronunciation, articulation, intonation, and rhythm of American speech.

ID 302. WRITING LABORATORY FOR GRADUATE STUDENTS. *No credit. (\$10.00 fee required.)*

A required remedial writing laboratory for graduate students whose English usage ability is low.

ID 200. WORKSHOP. *One to three hours credit.*

This course is concerned with the instructional problems of the participants; however, the problems attacked would vary from time to time according to the experts conducting the workshop. The nature of the workshop might cover such areas as Administration, Reading, Kindergarten, Curriculum, etc. Each workshop will have a sub-title and no sub-title may be repeated for credit.

ID 222. PRACTICUM IN OUTWARD BOUND. *Ten hours credit.*

This field course is designed to acquaint teachers with the broad Outward Bound program. Emphasis will be placed on the philosophical, psychological, sociological, and educational aspects of the program. Extensive first hand experiences will be provided for graduate students to study and participate with high school and college students.

ID 222. REMOTE TRAINING OF EARLY CHILDHOOD EDUCATORS.

Variable credit to five hours. (NDEA Institute)

Administered by the Child Institute, this course is an interdisciplinary approach to training educators of disadvantaged children while in their school setting. At least sixteen learning episodes are modeled and generated during three quarters. Continuous dialogue is maintained by on sight visits, telelectures, films, video-taped lessons (microtraining), and written materials.

ID 300. INTRODUCTION TO GRADUATE STUDY. *Three hours credit.*

An orientation to graduate study in general and the nature and methods of research in particular. Required of all first-year graduate students (except for those departments which have substitutes for this course). Should be taken during the first quarter of graduate work.

ID 301. PRACTICUM. *Maximum of four hours credit.*

Open only by invitation to resident graduate students. Supervised professional activity in the student's major field, approximately two hours per day. Two copies of a well-written paper must be filed before credit is given, one with the instructor and one with the Dean of the Graduate School.

ID 322. INDIVIDUAL STUDIES. *Maximum of four hours credit.*

Qualified graduate students outline and spend a minimum of 25 clock hours per quarter hour on a problem. Two copies of a well-written paper must be filed before credit is given, one with the instructor and one with the Dean of the Graduate School. Does not satisfy the 300 requirement unless the student is in full-time residence at CSC during the quarter the course is taken.

ID 336. PRACTICUM IN PROGRAMMED LEARNING AND OTHER RELATED NEW MEDIA. *Maximum of fifteen hours credit.*

Prerequisites, EDHP 295 or 395, PCG 340. Under supervision of professional programmers and psychologists, the students will learn to program materials. Task analysis, coordination with subject matter and curriculum experts, program validation and revision, techniques of frame writing, selection of student samples, and technology of program construction will be emphasized in the programming experience.

ID 399. THESIS. *Maximum of fifteen hours credit.*

Required of Master of Arts candidates in the Arts and Sciences programs Botany, Chemistry, Physics, Zoology. Optional for all other Master of Arts programs on recommendation of the major adviser.

ID 400. INTRODUCTION TO DOCTORAL RESEARCH. *Three hours credit.*

An introduction to research and advanced study. Required of all specialist and doctoral candidates (except for those departments which have substitutes for this course).

ID 401. SPECIALIST DEGREE PRACTICUM. *Eight hours credit.*

Project or supervised professional activity, required of all candidates for the Specialist in Education degree (except for those departments which have substitutes for this course).

ID 423. DOCTORAL DISSERTATION. *Eighteen hours credit.*

Required of all doctoral candidates. The candidate registers for the eighteen hours immediately following the successful defense of the study.

ID 451. SUPERVISED PRACTICUM IN COLLEGE TEACHING. *Maximum of nine hours credit.*

This course provides experiences in observation and supervised practice in college teaching for doctoral candidates planning to teach on the college or university level. Observations and the teaching experiences will be used as a basis for the analysis of learning experiences.

ID 452. INTERNSHIP IN SUPERVISING COLLEGE TEACHING. *Three hours credit.*

This course is designed for doctoral candidates preparing for college teaching. It provides experiences in working with the regular staff members engaged in the supervision of college and university teaching experiences. Particular attention is centered on the various aspects of the teaching-learning process and on analyses of self growth.

INTERDISCIPLINARY STUDIES IN VOCATIONAL EDUCATION

IDVE 200. DIRECTED OCCUPATIONAL EXPERIENCE. *Maximum of eight hours credit.*

Work experience is required for vocational credentials. Credit can be received for approved and/or supervised occupational experience related to the student's major area. The credits are registered after the work has been completed satisfactorily. For additional information see the Coordinator of Occupational Experiences.

IDVE 210. FOUNDATIONS OF VOCATIONAL EDUCATION. (ATE) *Three hours credit.*

Prerequisites: The student must have reached ATE standing. This is a required course for all vocational teachers, counselors, and administrators in Colorado. The course was formerly called EDCI 249 "Principles of Vocational Education." The course is a study of the development of vocational-technical education, legislation, state policies, programs, and recent developments in the total field of occupational education and training. The course must be taken before a student may enroll for other vocational courses.

IDVE 220. COOPERATIVE EDUCATION AND COORDINATION TECHNIQUES. *Three hours credit.*

Prerequisites, IDVE 210. This required course for vocational teachers provides the student with an analysis of coordinated work-experience programs and describes the specific duties of a teacher-coordinator. Actual problems encountered in coordinating the school program with on-the-job experiences are elucidated.

IDVE 230. OCCUPATIONAL ANALYSIS AND PROGRAM DEVELOPMENT. *Three or five hours credit.*

Prerequisites, IDVE 210, a senior (ATE) or graduate student. This required course for vocational education teachers briefly explores the methods of analyzing an occupation for the purpose of determining instructional units. Students are introduced to a career development learning system design which is applicable to group instruction as well as individualized instruction. The student develops a job-task instructional unit for a specific occupation. Students taking the course for 5 credits prepare, develop, and demonstrate a multimedia occupational learning packet.

IDVE 240. ADULT VOCATIONAL EDUCATION. *Three hours credit.*

Prerequisites, IDVE 210. The course includes a brief overview of the history of adult vocational education; the relationship of basic education and vocational training; curriculum development for specific adult programs; special funded adults training programs in the State of Colorado; field trips to observe post-

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secondary/community college training programs; seminars with community leaders to discover the resources available for planning adult education; and an opportunity to explore interdisciplinary occupational training possibilities.

IDVE 250. VOCATIONAL EDUCATION FOR LEARNERS WITH SPECIAL NEEDS. *Three hours credit.*

Prerequisites, IDVE 210. Recommended for seniors and graduate students. The purpose of this course is to seek ways for teachers and administrators to initiate new vocational education programs for learners often classified as the "disadvantaged" or those students described by the Vocational Education Acts of 1963 and 1968 as "students with special needs." These are students who have academic, socio-economic, or other handicaps which prevents them from succeeding in regular vocational education programs.

IDVE 270. INDIVIDUAL STUDIES IN VOCATIONAL EDUCATION. *Maximum of four hours credit.*

Qualified graduate student outline and spend a minimum of 25 clock hours per quarter hours on a problem. Two copies of a well-written paper must be filed before credit is given, one with the instructor and one with the Dean of the Graduate School. (Offered by arrangement)

IDVE 300. DIRECTED OCCUPATIONAL EXPERIENCE. *Fifteen hours credit.*

This is a summer work experience program for vocational teachers. The teacher will spend the first week on campus for job orientation and the study of occupational analysis. This is followed by seven or eight weeks of paid employment in an approved business/industrial establishment related to the teacher's vocational field or occupational objective. The last week of the quarter is spent back on campus applying the employment experiences to curriculum development. **THE TEACHER MUST MAKE APPLICATION FOR THIS EXPERIENCE BEFORE APRIL 15** with the Coordinator of Occupational Experiences. The employment must be planned and approved prior to enrollment in the class. A minimum of 275 hours of approved on-the-job learning experiences are required. Supervision of the experiences will be provided by the Coordinator of Occupational Experiences. Colorado teachers will be given first opportunity to enroll. (Summer Quarter)

IDVE 320. DIRECTED OCCUPATIONAL OBSERVATIONS. *Eight hours credit.*

This five week summer program for vocational teachers and counselors will apply toward the hours required for renewing a state vocational credential every five years. Teachers will spend three days each week assigned to various business/industrial establishments to observe individuals employed in related occupations. Two days on-campus each week will be spent developing effective methods for analyzing an occupation and applying the findings to classroom instruction. Each teacher/counselor will have an opportunity to observe in five different business establishments. **THE TEACHER MUST MAKE APPLICATION FOR THIS EXPERIENCE BEFORE APRIL 15** with the Coordinator of Occupational Experiences. The teacher will provide for his own transportation.

IDVE 330. SEMINARS IN VOCATIONAL EDUCATION. *Maximum of six hours credit.*

Seminars provide the theoretical structure for future workshops, practicums, and individual studies. The seminars are designed for group participation and focus on specific topics. Special off-campus guest instructors will be asked to contribute their expertise to the general theme. Special summer seminars will cover such topics as "State, Regional, National Organization of Vocational-Technical Education," "P.P.B.S.—Planning, Programming, Budgeting Systems," and "Vocational-Technical Research."

IDVE 340. WORKSHOPS IN VOCATIONAL EDUCATION. *Maximum of six hours credit.*

Laboratory approach which provides opportunities for vocational educators to concentrate their study on common instructional or administrative problems.

Each workshop will have a sub-title and no sub-title may be repeated for credit. Write to the Director of Vocational Education for the Summer Vocational Education Bulletin.

IDVE 350. PRACTICUM IN VOCATIONAL EDUCATION. *Maximum of six hours credit.*

This is a program designed by a teacher or administrator in the summer and implemented by the individual the following school year. The practicum is designed to encourage educators to develop new programs and initiate needed educational changes. The practicum is a form of "action research" and will be evaluated in the field by the instructor.

IDVE 440. SEMINARS IN VOCATIONAL EDUCATION ADMINISTRATION AND SUPERVISION. *Three hours credit.*

Program is designed for graduate students and taught by State and Regional vocational administrators as a means of acquainting individuals with specific information related to the role of vocational administrators.

IDVE 450. SUPERVISED FIELD EXPERIENCES IN VOCATIONAL ADMINISTRATION AND SUPERVISION. *Fifteen hours credit.*

This is an off-campus experience to acquaint administrators and supervisors with the responsibilities of the local, state, regional, and national vocational administrators, supervisors, directors. The program is designed for the individual.

JOURNALISM

JOUR 201. METHODS OF TEACHING JOURNALISM IN THE SECONDARY SCHOOL. (ATE) *Three hours credit.*

Instruction in advising the preparation and publication of school newspapers and in teaching scholastic journalism.

JOUR 205. WORKSHOP FOR SCHOOL PUBLICATION SPONSORS. (ATE) *Three hours credit.*

Acquaint students with role of publications as media for internal and external publics; study and experience procedures of doing school newspapers, annuals, handbooks, and radio programs.

***JOUR 244. COMMUNITY RELATIONS.** *Three hours credit.*

This course presents a view of community relations which is based on the concept of changing institutions in a changing society. It examines the communicative, sociological, and psychological factors which create and influence public and personal opinion. It shows how skills and techniques may be developed and utilized in a sound community relations program.

JOUR 297. MASTER JOURNALISTS AND THEIR TIMES. *Three hours credit.*

A concentration on the great American and British journalists, emphasizing their writings, standards of journalism, and their contributions to journalism and to society.

JOUR 298. ETHICS AND LIBEL. *Three hours credit.*

Study of current ethical and legal problems of the printed and broadcast media; designed for the newsman, publisher-manager, school administrator, and journalism teacher.

JOUR 299. THE PRESS AND CURRENT AFFAIRS. *Three hours credit.*

Examination of criticisms of the American print and broadcasting press, the ways the press covers and comments on current domestic and foreign news, and the influence of the media and top journalists on public affairs.

MATHEMATICS

MATH 203. STRUCTURE OF NUMBERS. *Three hours credit.*

Prerequisite, MATH 32. A rigorous development of the real and complex numbers. Beginning with Peano's axioms for natural numbers, the integers are developed by extension. The rational and real number systems are then obtained as successive extensions. Complex numbers are structured from pairs of real numbers. The nature of isomorphism is stressed.

MATH 205. MATHEMATICS OF FINANCE. *Five hours credit.*

Prerequisite, MATH 23. This course offers the student an opportunity to apply his elementary mathematics of arithmetic and algebra to problems of business. Such topics as simple and compound interest, annuities, installment buying, and life insurance are considered.

MATH 221. MODERN ALGEBRA I. *Three hours credit.*

Prerequisite, Math 123 or equivalent. A study of modern abstract algebra with emphasis on the theory of mappings and the theory of groups.

MATH 222. MODERN ALGEBRA II. *Three hours credit.*

Prerequisite, MATH 221 or equivalent. A study of modern abstract algebra with emphasis on the theory of rings, ideals, and polynomial rings. To be offered as a five-hour course summer 1968, thereafter as a three-hour course.

MATH 223. MODERN ALGEBRA III. *Three hours credit.*

Prerequisite, MATH 222 or equivalent. A continuation of MATH 324 with emphasis on extension fields, Galois Theory, vector spaces and other selected topics in modern algebra.

MATH 225. LINEAR ALGEBRA. *Four hours credit.*

Prerequisite, MATH 122. A further treatment of linear algebra, based on the first work of modern algebra. The course will complement the study of Matrices in MATH 125. Matrix Algebra. The content includes a study of vector spaces, linear transformations, and characteristic roots.

MATH 230. DIFFERENTIAL EQUATIONS I. *Five hours credit.*

Prerequisite, MATH 34 or taken concurrently. A study of the theory and solution of differential equations. Ordinary and partial differential equations are treated along with numerous applications.

MATH 231. DIFFERENTIAL EQUATIONS II. *Five hours credit.*

Prerequisite, MATH 230. A continuation of MATH 230. Topics to be covered includes series solutions of differential equations, systems of equations, partial differential equations, Fourier series and boundary value problems.

MATH 232. ADVANCED CALCULUS I. *Four hours credit.*

Prerequisite, MATH 34. The first course of a sequence of three courses which will extend the student of calculus and analysis into the mathematical rigor and logic of analysis. This course will cover the following topics: real numbers developed through the Dedekind cut definition, some introductory topological topics, limits, continuity, differentiability, and Riemann integral.

MATH 233. ADVANCED CALCULUS II. *Four hours credit.*

Prerequisite, MATH 232. A second course in a sequence of three courses. The topics to be covered in this course will be as follows: sequences and series, functions of several real variables and integrals of functions of several variables.

MATH 234. ADVANCED CALCULUS III. *Four hours credit.*

Prerequisite, MATH 233. The third course in a sequence of three courses. From the background built up in the first two courses, this course will consider certain special topics of application. Some of the topics to be considered will be chosen from the following: implicit functions; applications to geometry; the gamma and beta functions; line, surface, and space integrals; vector notation; Bessel functions; elliptic integrals.

MATH 235. INTRODUCTORY ANALYSIS I. *Four hours credit.*

Prerequisite, MATH 34. The first course of a sequence of three courses designed to study the foundations of analysis. The sequence will include the following topics: the real numbers, basic point set topology, theorems on continuity, differentiation and integration, sequences and series of functions, the inverse and implicit function theorems. The sequence of courses is especially recommended for those students intending to do graduate work in mathematics.

MATH 236. INTRODUCTORY ANALYSIS II. *Four hours credit.*

Prerequisite, MATH 235. Continuation of MATH 235.

MATH 237. INTRODUCTORY ANALYSIS III. *Four hours credit.*

Prerequisite, MATH 236. Continuation of MATH 236.

MATH 240. INTRODUCTION TO TOPOLOGY. *Four hours credit.*

Prerequisites, MATH 102, 34. Elementary point set topology. General topological spaces with emphasis on metric spaces.

MATH 251. INTRODUCTION TO MATHEMATICAL STATISTICS I. *Four hours credit.*

Prerequisite, MATH 150. Distributions of discrete and continuous random variables; means and moment generating functions; marginal and conditional distributions; distributions of functions of random variables; t , F , and Chi-square distributions.

MATH 252. INTRODUCTION TO MATHEMATICAL STATISTICS II. *Four hours credit.*

Prerequisite, MATH 251. Interval estimation; point estimation and maximum likelihood procedures; distributions of order statistics, stochastic convergence, central limit theorem and limiting distribution theory; sufficient statistics and completeness property.

MATH 253. INTRODUCTION TO MATHEMATICAL STATISTICS III. *Four hours credit.*

Prerequisite, MATH 252. Tests of hypotheses, analysis of variance, non-central t , F , and Chi-square distributions, multivariate normal distribution.

MATH 255. PROBABILITY THEORY. *Four hours credit.*

Prerequisite, MATH 150. Chebyshev's inequality, laws of large numbers, sums of independent random variables, central limit theorem, sequence of random variables, different modes of convergence, and probability generating functions.

MATH 256. AN INTRODUCTION TO STOCHASTIC PROCESSES. *Four hours credit.*

Prerequisite, MATH 255. Definition of stochastic processes, probability laws of stochastic processes, Wiener process, Poisson process, covariance stationary process and Markov chain.

MATH 280. COMPUTER PROGRAMMING. *Four hours credit. (Three hours lecture, two hours laboratory.)*

Prerequisite, MATH 24. This is a course in computer programming designed for mathematics students in the arts and sciences and in the teaching professions. Topics will include arithmetic, specification, control and input-output statements, along with subroutine arrangements. Laboratory work will consist of the Fortran programming of select mathematical problems, chosen for their applicability to the secondary classroom and to the field of elementary numerical analysis. The Colorado State College IBM 360 computer system will be used for programming and operational purposes.

MATH 281. COMPUTER MATHEMATICS I. *Four hours credit. (Three hours lecture, two hours laboratory.)*

Prerequisite, MATH 34. An introduction to basic computer mathematics, including computer arithmetic, Boolean equations, arithmetic design criteria and programming routines. Stress will be placed on teaching computer methods for use in the junior and senior high schools. Laboratory work will consist of Fortran programming with application to computers.

MATH 282. COMPUTER MATHEMATICS II. *Four hours credit. (Three hours lecture, two hours laboratory.)*

Prerequisite, MATH 281. This is a continuation of MATH 281 designed to give teachers of high school and junior college mathematics a solid background in programming fundamentals, computer logic and computer systems analysis. Two hours laboratory per week will be directed toward programming Colorado State College computers and computers at outside installations.

MATH 283. COMPUTER MATHEMATICS III. *Four hours credit. (Three hours lecture, two hours laboratory.)*

Prerequisite, MATH 282. This is a continuation of MATH 282, stressing applications of FORTRAN and ALGOL to mathematical problems. Both numerical and non-numerical applications will be covered. Language translators and compilers and assemblies will be covered as will the mathematics and logic of computer arithmetic units. The final goal of the three courses is to give teachers of mathematics a confidence in computer technology.

MATH 290. FOUNDATIONS OF ARITHMETIC. *Three hours credit.*

Designed to provide opportunity for elementary and junior high teachers and supervisors to acquire the understandings of arithmetic essential for effective teaching. Areas to be covered include the structure of our number system and operations in it, special numbers.

MATH 291. THEORY OF NUMBERS. *Five hours credit.*

Prerequisite, MATH 122. Foundations of arithmetic and algebra, including the fundamental laws, the linear Diophantine equation, properties of integers and the properties of linear and quadratic congruences.

MATH 301. FOUNDATIONS OF MATHEMATICS. *Three hours credit.*

A study of the logical and set theoretical foundations of modern mathematics including the axiomatic features of mathematics such as consistency, independence, and completeness. Some special topics are the Axiom of Choice, Zermelo's Well-Ordering Theorem, and Transfinite Cardinal and Ordinal Numbers.

MATH 310. SEMINAR IN MATHEMATICS. *One hour credit. (Maximum six hours credit.)*

Study and discussion of topics from mathematics.

MATH 311. SPECIAL TOPICS. *Three hours credit. (Maximum eighteen hours credit.)*

Prerequisite, approval of the instructor. Advanced topics in the areas of analysis, algebra, topology and statistics. Specific topics to be covered will be determined at the instructor's discretion and by the current needs of the students. Such topics as functional analysis, advanced differential equations, algebraic topology and others may be covered.

MATH 320. THEORY OF FIELDS. *Four hours credit.*

Prerequisite, MATH 325 or equivalent. Adjunction. Separable and inseparable extensions. Modular fields. Galois theory. Transcendental extensions. Additional topics selected from ordered fields, fields with valuation, theory of elimination.

MATH 326. THEORY OF RINGS. *Four hours credit.*

Prerequisite MATH 324 or equivalent. A graduate course designed to complement graduate courses in modern algebra and extend the development of ring theory in ideals, endomorphisms, the Jacobson radical, and other topics.

MATH 328. THEORY OF GROUPS. *Four hours credit.*

Prerequisites, MATH 323 or equivalent. This is an extension of the study of group theory begun in modern algebra into selected elementary areas including permutation groups, abelian groups and Sylow's theorems.

MATH 329. SPECIAL TOPICS IN ALGEBRA. *Three hours credit. (Maximum eighteen hours credit.)*

Prerequisite, approval of the instructor. Advanced topics in the area of algebra. Specific topics to be covered will be determined by the instructor's discretion and

the current needs of the student. Such topics as representation theory, commutative algebra, homological algebra and category theory may be covered.

MATH 332. COMPLEX VARIABLE I. *Three hours credit.*

Prerequisite, MATH 233 or 236. The first course of a sequence of three courses which will cover the basic theory of functions of a complex variable. The course will cover the following topics: complex number and their algebra, analytic functions, Cauchy Riemann conditions, and differential calculus of analytic functions.

MATH 333. COMPLEX VARIABLE II. *Three hours credit.*

Prerequisite, MATH 332. A second course in a sequence of three courses. The topics to be considered in this course are elementary functions of a complex variable and their inverses, residues and poles of a function of a complex variable and their application to evaluating real integrals.

MATH 334. COMPLEX VARIABLE III. *Three hours credit.*

Prerequisite, MATH 333. The third course in a sequence of three courses. From the background established in the first two courses several advanced topics and applications will be considered. These will include conformal mapping and applications (to solutions of differential equations) and the concept of analytic continuation.

MATH 335. REAL ANALYSIS I. *Three hours credit.*

Prerequisite, MATH 233 or 236. Elements of set theory and its application to classical integration theory and classical Banach spaces.

MATH 336. REAL ANALYSIS II. *Three hours credit.*

Prerequisite, MATH 335. An introduction to general topology and to the theory of general Banach spaces.

MATH 337. REAL ANALYSIS III. *Three hours credit.*

Prerequisite, MATH 336. A treatment of general measure and integration theory.

MATH 339. SPECIAL TOPICS IN ANALYSIS. *Three hours credit. (Maximum eighteen hours credit.)*

Prerequisite, approval of the instructor. Advanced topics in analysis and functional analysis. Specific topics to be covered will be determined by the instructor's discretion with an attempt to meet the current needs of the students. Such topics as functional analysis, integral operators, differential equations, measure theory, spectral theory, etc., may be covered.

MATH 343. MODERN GEOMETRY I. *Five hours credit.*

Prerequisite, Graduate standing in mathematics. A first course in a two-course sequence which will emphasize new topics in present-day geometry. This emphasis will be partly Euclidean in nature and partly non-Euclidean. Special emphasis will be placed upon the foundations of geometry along with the different geometries which can be developed from this foundation. Topics to be covered are foundations of geometry, transformations, types of geometry, selected Euclidean topics.

MATH 344. MODERN GEOMETRY II. *Five hours credit.*

Prerequisite, MATH 343. A continuation of MATH 343. This course will continue to emphasize types of geometry with special emphasis being placed on non-Euclidean topics. Special types to be covered include absolute geometry, parabolic geometry, elliptic geometry and differential geometry.

MATH 346. GENERAL TOPOLOGY I. *Three hours credit.*

Prerequisites, MATH 233 or 236. Point set and algebraic topology.

MATH 347. GENERAL TOPOLOGY II. *Three hours credit.*

Prerequisite, MATH 346. A continuation of MATH 346.

MATH 348. GENERAL TOPOLOGY III. *Three hours credit.*

Prerequisite, MATH 347. A continuation of MATH 347.

MATH 349. SPECIAL TOPICS IN TOPOLOGY. *Three hours credit. (Maximum eighteen hours credit.)*

Prerequisite, approval of the instructor. Advanced topics in general and algebraic topology, specific topics covered will be determined by the instructor and current needs of the students. Topics may include algebraic topology, homotopy theory, knot theory, dimension theory and topological groups.

MATHEMATICS EDUCATION

MED 264. HISTORY OF MATHEMATICS I. *Three hours credit.*

Prerequisite, MATH 122 or 141. A general view of the development of mathematics through the 18th century. Particular attention is given to the history of arithmetic, algebra, geometry, and mathematical symbolism.

MED 271. INSTRUCTIONAL MATERIALS IN SECONDARY SCHOOL MATHEMATICS. *Three hours credit. (Two hours lecture, two hours laboratory.)*

Prerequisite, MATH 31. This course introduces the student into the rich areas of possible sources of instructional materials which can be used for instructional purposes in the secondary school. Areas studied will include aesthetic values of mathematics, instructional models, historical materials, classroom equipment, recreational materials, and calculating devices.

MED 277. MATHEMATICS TEACHERS' WORKSHOP. *Three hours credit. (Maximum eighteen hours credit.)*

Provision is made for students to work on problems related to elementary, junior high, senior high, or junior college mathematics. No more than nine hours may be applied on any one graduate degree.

MED 364. HISTORY OF MATHEMATICS II. *Three hours credit.*

Prerequisite, MATH 34. A deeper study of the development of elementary mathematics which is begun in MED 264 as well as a study of the development of calculus, statistics, and recent advances in the field of mathematics.

MED 372. CURRICULUM IN SECONDARY SCHOOL MATHEMATICS. *Five hours credit.*

A study of the mathematics curriculum in grades 7-14 with emphasis on committee and commission reports, changes in textbooks, and modern curricular programs in both large and small secondary schools.

MED 373. PROBLEMS IN THE TEACHING OF SECONDARY MATHEMATICS. *Four hours credit.*

Prerequisites, MATH 122, MED 372. Content, special problems, and modern trends in algebra will be studied. Emphasis will be placed upon new approaches and content.

MED 374. SEMINAR IN TEACHING SECONDARY MATHEMATICS. *Four hours credit.*

Prerequisites, MATH 141, MED 372. Content, special problems, and modern trends in geometry and trigonometry will be studied. Emphasis will be placed upon new approaches and content.

MED 378. SPECIAL TOPICS. *Three hours credit. (Maximum eighteen hours credit.)*

Prerequisites and topics will be announced in the schedule of classes. No more than nine hours may be applied on any one graduate degree.

MED 472. THEORY AND PRACTICE OF TEACHING MATHEMATICS. *Three hours credit.*

Prerequisites, MED 372, PCG 340. Current practices used in the classroom will be related to the various theories of learning. Emphasis will be placed upon recent developments.

MED 473. SEMINAR IN MATHEMATICS EDUCATION. *Three hours credit.*

Prerequisites, MED 472, RSM 305. The first of two courses which will examine the completed research in mathematics education and the various recommendations for improving the teaching of mathematics. Needed research will be identified.

MED 474. ADVANCED SEMINAR IN MATHEMATICS EDUCATION. *Three hours credit.*

Prerequisite, MED 473. A continuation of MED 473.

METEOROLOGY

MET 280. SURVEY OF METEOROLOGY. *Five hours credit. Four hours lecture, three hours laboratory).*

This course will consider the basic principles of atmospheric science with a non-mathematical approach. Topics of weather observation and prediction, physical basis for cloud formation, radiational heating and cooling, wind circulation, condensation and precipitation processes will be considered. A laboratory of three hours per week will be required for work with meteorological instruments, maps, and charts. Projects will be required. Arranged primarily for graduate students. Offered summers only.

MET 282. CLIMATOLOGY. *Three hours credit.*

Prerequisite, MET 182 or 186. A study of the meteorological basis of climate, nature and origin of the atmosphere, and classifications of world climates. Specific attention will be given to climates of Colorado and surrounding western states. Relationships of climate to water resources, agriculture, housing, transportation, and other human activities will be studied.

MET 284. PHYSICAL METEOROLOGY. *Three hours credit.*

Prerequisite, 182 or 186. A study of radiation processes, the thermodynamics of moist air, condensation, and precipitation. Attention given to severe weather phenomena associated with precipitation processes. Study of adiabatic diagrams and other pressure-height-temperature charts. Discussion of air masses, cyclones and anticyclones, fronts and frontogenesis.

MET 286. SYNOPTIC METEOROLOGY. *Four hours credit. (Two hours lecture, four hours laboratory.)*

Prerequisites, MET 181, 284. A study of the fundamental topics of synoptic meteorology, such as air mass development, fronts and frontogenesis, cyclones and anticyclones, long- and short-waves in the atmosphere, the jet stream, and the vertical structure of the atmosphere. Elementary analysis and forecasting exercises in the laboratory will apply these topics to actual weather situations. Maps and charts of the U.S. Weather Bureau will be considered.

MET 287. SEVERE WEATHER PHENOMENA. *Three hours credit.*

Prerequisite, MET 182. A study of the development and structure of thunderstorms, squall lines, tornadoes, and hurricanes.

MET 290. PHYSICAL AND METEOROLOGICAL BASIS OF EARTH SCIENCE. *Three hours credit. (NSF In-Service Institute.)*

The physical and meteorological basis of Earth Science will be investigated through the media of contemporary curriculum materials. The student will learn basic principles pertaining to density, gravity, energy, motion, force, air motions, water in air, and climatology.

MUSIC

MUS 201. STAGE AND OPERA TECHNIQUES. *Two hours credit.*

Study of proper selection of opera and operetta; its organization and procedures

for casting and tryouts. Rehearsal procedures, scenery, lighting, costuming and makeup; advertising, tickets and programs, and other basics necessary to production of a public performance.

MUS 204. PRINCIPLES OF VIOLIN AND VIOLA TEACHING. *Two hours credit.*

Prerequisite, Student should be technically proficient in the performance of scales and arpeggios in all keys through three octaves. He should also be familiar with the Etudes of Kreutzer and the standard solo repertoire. This is a laboratory course which includes observation and participation and instruction in group and individual violin and viola.

MUS 206. MUSIC AND RECREATION. *Two hours credit.*

The following aspects of recreational music will be stressed: singing and leading of community songs; formation, training, and operation of community performance groups; learning to play some of the simple social instruments and becoming proficient in teaching others how to listen to music intelligently. For non-music majors.

MUS 207. LITERATURE OF THE PIANOFORTE. *Three hours credit.*

Prerequisite, piano performance Level II or above. This course is designed to provide a systematic examination of keyboard literature from the English and French schools of the 17th century to the contemporary period. Special emphasis will be placed on detailed study of representative works of Bach, Beethoven, and composers of the Romantic and Modern periods.

MUS 209. MUSIC METHODS AND MATERIALS FOR ELEMENTARY TEACHERS (ATE). *Two hours credit.*

Prerequisite, MUS 1 or 49. A comprehensive methods course for the elementary classroom teacher covering the teaching of singing, rhythm, music reading, creative activities and music listening. A list of recorded music and song literature for each grade will be developed by the class. Grade placement for all aspects of the music program will be studied.

MUS 210. MUSIC LITERATURE FOR ELEMENTARY GRADES. *Three hours credit.*

Music major prerequisite, MUS 141. Non-music major prerequisites, MUS 49, 209. A course designed to further acquaint the classroom teacher and music supervisor with the music literature and instructional aids used in the elementary grades. Collections are made of: (1) songs; (2) rhythmic activities; (3) listening lessons; (4) elementary chorus selections; and (5) program and assembly materials. For both elementary classroom teachers and music supervisors.

MUS 211. IMPROVEMENT OF INSTRUCTION IN MUSIC READING. *Three hours credit.*

Prerequisites, MUS 40, 41, 42, 49 and 209. A complete analysis of the program in music reading in the elementary grades. Includes an evaluation of basic methods and materials, curriculum building in music reading, and a survey of published materials suitable for classroom use.

MUS 212. MUSIC ACTIVITIES FOR CLASSROOM TEACHERS. *Three hours credit.*

Activities in music for children requiring a minimum of musical skill on the part of the teacher. Includes a study of such activities as playing and reading music with simple melody instruments, the use of the autoharp for song accompaniment, the rhythm band, the construction of simple instruments, and the teaching of songs and rhythmic activities through the use of the phonograph.

MUS 213. CHORAL LITERATURE TO 1750. *Three hours credit.*

A study of the stylistic trends, musical characteristics and performance practice of choral music written before 1750.

MUS 214. CHORAL LITERATURE FROM 1750. *Three hours credit.*

A study of the stylistic trends, musical characteristics and performance practice of choral music written after 1750.

MUS 215. INSTRUMENTAL LITERATURE. *Three hours credit.*

A study of instrumental literature for school groups. The high school band and orchestra, materials for class and individual instruction, and small instrumental ensembles.

MUS 216. METHODS AND MATERIALS FOR CLASS VOICE INSTRUCTION. *Two hours credit.*

Organization of the voice class, a study of voice production problems, procedures and techniques such as posture, breath control, resonance, and interpretation through proper diction. Attention will be called to certain advantages to be gained through a class type of instruction.

MUS 217. METHODS AND MATERIALS FOR CLASS INSTRUMENTAL INSTRUCTION. *Three hours credit.*

A course designed to give the student practical experience in the organization and teaching of heterogeneous wind instrument classes. The course will stress the improvement of teaching methods and the creation of original materials for class work.

MUS 219. IMPROVISATION. *Two hours credit.*

Improvisation is one of the most natural forms of musical expression. The course starts with simple vocal and rhythmical improvisations and proceeds to group improvisation, using prepared charts which indicate mood, tempo, form, and the structural role, leading or accompanying, of each instrument.

MUS 220. INSTRUMENT REPAIR AND CARE. *Two hours credit.*

Study of the care and repair of band and orchestral instruments. Practical experience in instrument repairs which requires a minimum amount of equipment, skill and time.

MUS 223. PRACTICUM IN BAND CONDUCTING AND PERFORMANCE. *Three hours credit.*

A laboratory course in advanced band conducting and performance. Supervised conducting experience under actual conditions is provided. Marching and football band performance will also be covered.

MUS 224. PRACTICUM IN CHORAL CONDUCTING AND PERFORMANCE. *Three hours credit.*

A workshop course in advanced choral conducting and performance. Provides opportunity for supervised conducting, analysis of choral materials, problems of choral organization, a study of the literature of choral conducting and practices.

MUS 225. PRACTICUM IN ORCHESTRAL CONDUCTING AND PERFORMANCE. *Three hours credit.*

A workshop course in advanced orchestral conducting and performance. Provides opportunity for supervised conducting, analysis of orchestral material, problems of organization, a study of the literature of orchestral conducting and practice.

MUS 226. PRINCIPLES OF PIANO TEACHING I. *Two hours credit.*

Prerequisite, piano performance Level II or above. A laboratory course including observation and participation in group and individual piano instruction. The beginning pianist and individual differences. Readiness and normal progress defined. Musicianship and music reading approached through piano study. Basic keyboard techniques. Criteria for selecting teaching materials.

MUS. 227. PRINCIPLES OF PIANO TEACHING II. *Two hours credit.*

Prerequisite, MUS 226. Studio procedures. Demonstrations of specific musical and technical problems and their possible solutions. Guided teaching. Keyboard experience in the school music program. Individual differences in sight-reading ability, musicianship, and literature and materials.

MUS 228. PRINCIPLES OF PIANO TEACHING III. *Two hours credit.*

Prerequisite, MUS 227. Studio management. Piano teaching as a profession. Class members will assume responsibility for teaching one or more pupils at beginning and intermediate levels with clinical study of problems involved. Adjudication. Public performance. Recital planning. Basic teaching repertory and representative styles.

MUS 230. INDIVIDUAL PERFORMANCE IN VOICE. *One hour credit.*

MUS 231. INDIVIDUAL PERFORMANCE IN PIANO. *One hour credit.*

MUS 232. INDIVIDUAL PERFORMANCE IN ORGAN. *One hour credit.*

MUS 233. INDIVIDUAL PERFORMANCE IN STRINGS. *One hour credit.*

MUS 234. INDIVIDUAL PERFORMANCE IN WOODWINDS. *One hour credit.*

MUS 235. INDIVIDUAL PERFORMANCE IN BRASS. *One hour credit.*

MUS 236. INDIVIDUAL PERFORMANCE IN PERCUSSION. *One hour credit.*

MUS 237. INDIVIDUAL INSTRUCTION IN COMPOSITION. *One hour credit.*

MUS 238. INDIVIDUAL PERFORMANCE IN HARP. *One hour credit.*

MUS 241. MARCHING BAND TECHNIQUES. *Two hours credit.*

A workshop to provide materials and suggestions to band directors and prospective band directors. To assist with the planning of individual football shows and pageantry.

MUS 242. VOCAL REPERTOIRE: GERMAN ART SONG. *Two hours credit.*
A course in performance of nineteenth and twentieth century German Art Song, with particular emphasis upon style, technical requirements and diction.

MUS 243. VOCAL REPERTOIRE: FRENCH ART SONG. *Two hours credit.*
A course in performance of nineteenth and twentieth century French Art Song, with particular emphasis upon style, technical requirements and diction.

MUS 244. VOCAL REPERTOIRE: 17TH AND 18TH CENTURIES. *Two hours credit.*

A course in performance of songs and airs before the nineteenth century, with particular emphasis upon style, technical requirements and diction in English, Italian, French and German.

MUS 250. ACOUSTICS OF MUSIC. *Three hours credit.*

A study of (1) basic concepts; (2) harmonic motion, transmission of sound, interference; (3) hearing, resonance, pitch, quality, temperament; (4) acoustical properties of string, wind and percussion instruments; and (5) electronic musical instruments.

MUS 253. POLYPHONIC FORMS. *Three hours credit.*

A study of the forms, techniques and literature of the 17th, 18th, and 19th century polyphonic music.

MUS 259. THE SCHOOL MUSIC PROGRAM FOR THE HANDICAPPED. *Three hours credit.*

A course designed to present a music program for the various handicapped children who are part of the public schools: the mentally retarded, the culturally handicapped, the blind, the hard of hearing, emotionally disturbed, and the physically handicapped.

MUS 260. COLLEGIUM MUSICUM. *One hour credit.*

This performing group is concerned with little performed music of all types. The goal of the organization is to give the student experience in preparing and performing early music, music for unusual media and experimental music of all types. Admission with the approval of the instructor.

MUS 261. HISTORY OF MUSICAL INSTRUMENTS. *Three hours credit.*

A study of the development of musical instruments from the distant past to the present. Specific notice will be made of their growth into families of instruments and their usage in musical practice.

MUS 266. TEACHING MUSIC APPRECIATION. *Three hours credit.*

Music major prerequisites, MUS 40, 41, 42, 141. Non-music major prerequisites, MUS 209 or 141. Developing a music listening program for schools covering methods of teaching, recorded materials and the construction of a graded program. The published recorded material suitable for both elementary and high school students is studied, as well as reference and textbooks dealing with music appreciation.

MUS 269. THE HISTORY AND LITERATURE OF JAZZ. *Two hours credit.*

A survey of the history and literature of jazz music from 1890 to the present. This course is open to all students.

MUS 270. SYMPHONIC WIND BAND. *One hour credit.*

The Symphonic Wind Band is limited in enrollment to approximately 80 members. This organization performs the best literature available for the band. Over the years this CSC band has become known throughout the region for its excellence as a concert organization. The Symphonic Wind Band presents many concerts during the year, and takes an annual tour.

MUS 271. CONCERT BAND. *One hour credit.*

The Concert Band is open to all band performers who wish a more limited band experience than is provided by the Symphonic Wind Band. This band studies, rehearses, and presents advanced forms of concert band literature.

MUS 272. MARCHING BAND. *One hour credit.*

Open to all men students regardless of major field who have had high school band experience. A study and practice of the fundamentals of drill and presentation of marching maneuvers and pageants at athletic events. Required during Fall Quarter for men in either Symphonic Wind Band or Concert Band. Satisfies physical education requirements for Fall Quarter.

MUS 273. VARSITY BAND. *One hour credit.*

Open to all students regardless of major who have had high school band experience. To provide music for athletic and college functions. To read material suitable for use by high school band.

MUS 274. JAZZ ENSEMBLE. *One hour credit.*

Membership in the Jazz Ensemble is limited to five trumpets, five trombones, five saxophones, and three rhythm (players piano, string bass, percussion). This unit is concerned with jazz idiom music: show music, dance music, and concert jazz. The goal of this type of ensemble training is to give the student a thorough idiom in preparation for teaching at both the secondary and college levels. Members of Jazz Ensemble who are music majors must be enrolled in a major ensemble.

MUS 275. SYMPHONY ORCHESTRA. *One hour credit.*

The College Symphony Orchestra is a rapidly developing organization in which the wealth of the world's most outstanding music is performed. The orchestra is presented regularly in local concerts and participates in performance of the large works for chorus and orchestra performed by the faculty and students of the School of Music.

MUS 276. CHAMBER ORCHESTRA. *One hour credit.*

A select group of approximately 20 string students chosen by audition from the membership of the Symphony Orchestra. The Orchestra performs and reads literature from the Baroque to the present day, specializing in materials specifically designed for chamber orchestra.

MUS 277. LABORATORY ORCHESTRA. *One hour credit.*

A laboratory course to provide practice orchestra experience on stringed instruments. Orchestral materials and the use of them for continued development of string students will be discussed and demonstrated.

MUS 278. MIXED CONCERT CHOIR. *One hour credit.*

Membership in the concert choir is limited to approximately 60 singers. This organization performs a wide range of choral literature from the classics to the music of contemporary composers. The organization is recognized widely for its excellence as a choral performing group. It is in demand throughout the region for concert appearances.

MUS 279. ORATORIO CHORUS. *One hour credit.*

Membership to the group of approximately 150 singers is open to all college students on an audition basis. The choir specializes in the performance of large choral masterworks such as Handel's "Messiah" and the "Creation" by Haydn.

MUS 280. CHORUS AND ORCHESTRA WORKSHOP. *One hour credit.*

Conducted by authorities nationally known in their fields of specialization. The purpose of the workshop is to provide information about current important ideas in each field of knowledge.

MUS 281. WOMEN'S CONCERT CHOIR. *One hour credit.*

The women's choir is open to all women students who enjoy singing the literature for women's voices. This group performs for many local community and college events. Elementary education majors are especially urged to apply for membership.

MUS 282. VARSITY MEN'S GLEE CLUB. *One hour credit.*

Membership is open to the entire male student body. A love of singing is the main requirement for registration. No formal audition is necessary. The Varsity Men's Glee Club affords an opportunity for men from all schools and divisions to participate in the great tradition of men's ensemble singing while performing a wide range of literature before college and community audiences.

MUS 283. CHAMBER SINGERS. *One hour credit.*

A select group of approximately 20 singers chosen by audition from the membership of the Concert Choir. The choir utilizes in material specifically designed for chamber ensemble.

MUS 284. OPERA WORKSHOP. *One to three hours credit.*

Workshop offering practical experience in production of a musico-dramatic show. Techniques of acting, singing, directing, and other facets necessary for preparation of a show for public performance will be offered.

MUS 285. STRING ENSEMBLE. *One hour credit.*

MUS 286. BRASS ENSEMBLE. *One hour credit.*

MUS 287. WOODWIND ENSEMBLE. *One hour credit.*

MUS 288. PERCUSSION ENSEMBLE. *One hour credit.*

MUS 289. PIANO ENSEMBLE. *One hour credit.*

MUS 299. CHAMBER BRASS CONSORT. *One hours credit.*

A select performing ensemble of 15 to 20 brass students with added percussionists when necessary. Concentration is upon familiarization of literature for the brass instrumental media as well as upon development of musical sensitivity, phrasing, style and intonation.

MUS 300. INTRODUCTION TO MUSICAL SCHOLARSHIP. *Three hours credit.*

An introduction to problems facing the graduate student in music. This will include methods for dealing with such problems as: attitudes and aims of the musical scholar, studies in bibliography, reference materials, sources, editions, and editing procedures. Included will be oral and written reports, reviews, outline procedures for term papers, articles, and thesis. Required of all Master of Arts candidates in music and should be taken during the first quarter of graduate work.

MUS 301. INTRODUCTION TO BIBLIOGRAPHIC METHOD. *Three hours credit.*

A comprehensive study of basic reference materials in music through the collection, examination and documentation of information. The course will investigate general as well as music library materials.

MUS 302. PSYCHOLOGY OF MUSIC. *Three hours credit.*

The subjects included in this course are measurements of musical talent, tests and measurements in music, the psychology of musical listening and musical performance.

MUS 303. MUSIC IN AMERICA. *Three hours credit.*

A comprehensive study of the music of our country and the people who have produced it, tracing the development of vocal and instrumental music from the time of the Puritans and Pilgrims to today. Some topics are folk music, symphony orchestra, jazz, and new film music.

MUS 304. TEACHING SECONDARY SCHOOL MUSIC. *Three hours credit.*

Previous teaching experience important. A study of the total instructional use of music in the junior and senior high school, with special emphasis on the integration of related humanities in the general music classes and in the performing group rehearsals.

MUS 305. SUPERVISING ELEMENTARY TEACHING OF MUSIC. *Three hours credit.*

Procedures for supervising the music program in the elementary grades, cooperative curriculum building, planning courses of study and units of work, the induction of the beginning teacher, human relations, and in-service education of the classroom music teacher.

MUS 306. TEACHER EDUCATION IN MUSIC. *Three hours credit.*

The teacher education program in music including both the pre-service and in-service education of the elementary classroom teacher, the teacher's college music curriculum, the administration of college music, the junior college, and the music program in general education.

MUS 307. ADMINISTRATION AND SUPERVISION OF THE MUSIC PROGRAM. *Three hours credit.*

A course designed to acquaint the school administration with the problems of the administration and supervision of the music program. The content includes the place of music in the school program, music equipment, schedules, budget, instructional problems, and public relations in music.

MUS 308. SEMINAR IN MUSIC EDUCATION. *Three hours credit.*

A review and criticism of the evolution of philosophical and psychological thought which has influenced music education.

MUS 309. SYMPHONIC LITERATURE. *Three hours credit.*

A study of the literature for the symphony orchestra from the time of Haydn and Mozart to the writings of present-day composers, leading to an understanding and appreciation of the larger works in music.

MUS 310. PROBLEMS OF INSTRUMENTAL SUPERVISION. *Three hours credit.*

A discussion and study of the problems of instrumental supervision based upon an analysis of the professional problems found to exist in the field of teaching instrumental music.

MUS 311. IMPROVEMENT OF INSTRUCTION IN INSTRUMENTAL MUSIC. *Three hours credit.*

A study of the instrumental approach in the development of pitch, rhythm, melody and sight reading. Special emphasis will be given to the development of instrumental performance and musicianship.

MUS 312. MUSIC WORKSHOP. *One to four hours credit.*

Workshops are conducted by authorities nationally known in their fields of specialization. The purpose of the workshop is to provide information about current important ideas in each field of knowledge.

MUS 317. INSTRUMENTAL TECHNIQUES AND MATERIALS (STRINGS). *Five hours credit.*

A discussion and presentation of the methods used in string class, violin, viola, and cello teaching and private lessons and a study of the materials used in class teaching. Continued proficiency in actual performance by student.

MUS 318. INSTRUMENTAL TECHNIQUES AND MATERIALS (PERCUSSION). *Two hours credit.*

A course designed for graduate students that will enable them to explore advanced techniques, methods and materials related to all of the percussion instruments.

MUS 319. INSTRUMENTAL TECHNIQUES AND MATERIALS (WOODWINDS). *Five hours credit.*

Prerequisite, MUS 190, 195 or 197. This course provides an opportunity for the graduate student to study the techniques peculiar to instruments of the woodwind family; to gain additional proficiency in playing; to study teaching materials suitable for both individual and group instruction; and to become familiar with the standard solo and small ensemble literature for these instruments.

MUS 320. INSTRUMENTAL TECHNIQUES AND MATERIALS (BRASS). *Five hours credit.*

Prerequisite, MUS 191 or 192. An advanced course in the techniques, theories and problems of teaching and playing brass instruments.

MUS 321. PERFORMANCE PRACTICES. *Three hours credit.*

Prerequisite, MUS 263. A study of musical performance from the Renaissance Era (ca. 1450) through the Classical Era (ca. 1825). Discussion of musical instruments, and thorough bass practices. The interpretation of ornamentation.

MUS 322. CHURCH MUSIC. *Three hours credit.*

This course gives a brief survey of music in the history of the Christian church. The philosophy of church music and its real function in worship is studied. The administration of the total music program in the church is outlined. Suitable materials for all occasions are evaluated and classified.

MUS 323. PRINCIPLES OF THE TEACHING OF VOICE. *Three hours credit.*

A survey of the development of singing through the centuries, classifying the known theories and teaching concepts. Correlation of available sources of bibliographic information provides a core of organized information and orientation for research in this and related fields. The student should have had the study of voice as his undergraduate area of applied music emphasis.

MUS 324. COMPARATIVE STRING METHODS AND MATERIALS. *Three hours credit.*

A comparison of the materials used in string teaching. The various methods for student requirements as they apply to individual cases.

MUS 325. COMPARATIVE PIANO TEACHING METHODS AND MATERIALS. *Three hours credit.*

A review of past and present piano methods, combined with the fundamentals of piano teaching and playing. Demonstrations of methods and techniques.

MUS 330. INDIVIDUAL PERFORMANCE IN VOICE. *One hour credit*

MUS 331. INDIVIDUAL PERFORMANCE IN PIANO. *One hour credit.*

MUS 332. INDIVIDUAL PERFORMANCE IN ORGAN. *One hour credit.*

MUS 333. INDIVIDUAL PERFORMANCE IN STRINGS. *One hour credit.*

MUS 334. INDIVIDUAL PERFORMANCE IN WOODWINDS. *One hour credit.*

MUS 335. INDIVIDUAL PERFORMANCE IN BRASS. *One hour credit.*

MUS 336. INDIVIDUAL PERFORMANCE IN PERCUSSION. *One hour credit.*

MUS 337. INDIVIDUAL INSTRUCTION IN COMPOSITION. *One hour credit.*

MUS 338. INDIVIDUAL PERFORMANCE IN HARP. *One hour credit.*

MUS 350. PRACTICAL ARRANGING. *Three hours credit.*

Prerequisite, MUS 154. A project course in arranging for school instrumental and vocal groups. Projects include arranging for small ensembles in both standard and unusual combinations, transcription of instrumental and vocal descants for the enrichment of song literature.

MUS 351. ADVANCED CONDUCTING. *Three hours credit.*

Prerequisites, MUS 162, 163, 164 or 166, 167 and 168. A laboratory course in advanced problems of instrumental and choral conducting. Supervised conducting experience is provided.

MUS 352. EIGHTEENTH CENTURY HARMONY AND FORMS. *Three hours credit.*

Construction and harmonization of melodies. Review of figured bass and harmonic practices deriving from a study of Bach chorales, part forms, rondo, variation, and sonata principles appearing in eighteenth century music. Altered chords, modulation, non-chordalism, and tonality concepts within Baroque and Classic periods.

MUS 353. NINETEENTH CENTURY HARMONY AND FORMS. *Three hours credit.*

Harmonic materials of the nineteenth century, beginning with a brief review of secondary sevenths, diminished sevenths, and continuing with augmented chords, ninth chords, modulation, sequence, and the whole tone scale. Study of simple part forms—song form with trio, rondo forms, variations and the sonata allegro—as used in the nineteenth century. Analysis of compositions in all major forms. Original compositions in shorter forms.

MUS 354. TWENTIETH CENTURY HARMONY AND FORMS. *Three hours credit.*

This course is concerned with new compositional techniques employed in twentieth century music as revealed in new concepts of melody, harmony, rhythm and form. When possible, this course should be combined with MUS 368. Seminar: New Music.

MUS 355. HISTORY OF MUSIC THEORY. *Three hours credit.*

A study of the theory of music, musical composition, pedagogy and performance from the earliest times to the present.

MUS 356. SEMINAR: MEDIEVAL MUSIC. *Three hours credit.*

A study of musical style in its historical, theoretical and practical aspects during the Middle Ages.

MUS 357. ARTS AND IDEAS FOR TEACHERS. *Three hours credit.*

A study of humanistic values in the arts. The development of teaching guides for interdisciplinary study of art, music, and poetry. The use of educational media in interdisciplinary study. Materials for all age levels.

MUS 358. MUSIC HISTORY I. *Three hours credit.*

Music history from the Greek Period to the end of the Baroque. The course is designed as a comprehensive review for the new graduate student with emphasis on styles and characteristics of Gregorian Chant, early polyphony, and the music of the Renaissance and Baroque Periods.

MUS 359. MUSIC HISTORY II. *Three hours credit.*

Tracing the historical development of music from the Classic Period to the present day and presenting a review of the stylistic characteristics of the music of the Classical, Romantic, Impressionistic and Modern Schools.

MUS 360. HISTORICAL ANALYSIS OF MUSIC STRUCTURE. *Three hours credit.*

Prerequisites, MUS 158, 159, 160. A detailed study of the structure of music from the period of plain song to the works of Palestrina. A thorough study of the cadential, harmonic, melodic and rhythmic changes which take place in this period.

MUS 361. AESTHETICS AND CRITICISM. *Three hours credit.*

A study of the standard literature of aesthetics. A consideration of art in its relation to experience with specific reference to the function of music in an educational program.

MUS 362. HISTORY OF OPERA. *Three hours credit.*

A survey of the history of opera from 1600 to the present. This will include a study of the aesthetic climate, stylistic, musical and dramatic development and methods of character delineation within the various periods of music history.

MUS 363. SEMINAR: RENAISSANCE MUSIC. *Three hours credit.*

A study of musical style in its historical, theoretical and practical aspects during the Renaissance.

MUS 364. SEMINAR: THE BAROQUE PERIOD. *Three hours credit.*

Music from 1600 to 1750. Beginning and development of opera from its Florentine beginnings through Venetian, Neapolitan and French styles; growth of chamber, orchestral and solo instrumental music; religious vocal music; principal forms, including sonata, suite, concerto, concerto grosso, oratorio, motet, fugue, toccata, prelude. Emphasis placed on composition of Handel and J. S. Bach.

MUS 365. SEMINAR: THE CLASSIC PERIOD. *Three hours credit.*

Historical and cultural influences bearing upon the emergence of eighteenth century classicism in music. The composers, representative works, forms, styles, and media of the Classic Era. Haydn, Mozart, and Beethoven and their treatment of the sonata principle.

MUS 366. SEMINAR: THE ROMANTIC PERIOD. *Three hours credit.*

The course will be devoted to the analysis of representative music works of the Romantic period; scores and recorded music will be studied. Related literary movements will be discussed and research projects will be carried out concerning the aesthetic theories and musical criticism of the time.

MUS 367. SEMINAR: BEETHOVEN. *Two hours credit.*

The life and works of Beethoven. Readings will be assigned as a basis for study and discussion of Beethoven's life and times. Special topics will be developed by individual students. A general review of the composer's complete works will be complemented by score and record study and analysis of representative compositions.

MUS 368. SEMINAR: NEW MUSIC. *Two hours credit.*

This course is primarily concerned with new content and new media as revealed in music of the twentieth century. Literature and biography will be stressed in this course while the actual technical practices of modern composers will be more thoroughly investigated in the companion course, MUS 265, Twentieth Century Harmony and Forms.

MUS 369. SEMINAR: CHORAL MUSIC. *Three hours credit.*

A seminar designed to allow discussion of a variety of subjects related to choral literature. Individual projects will be assigned calling for creative research.

MUS 370. SYMPHONIC WIND BAND. *One hour credit.*

The Symphonic Wind Band is limited in enrollment to approximately 80 members. This organization performs the best literature available for the band. Over the years this CSC band has become known throughout the region for its excellence as a concert organization. The Symphonic Wind Band presents many concerts during the year, and takes an annual tour.

MUS 371. CONCERT BAND. *One hour credit.*

The Concert Band is open to all band performers who wish a more limited band experience than is provided by the Symphonic Wind Band. This band studies, rehearses, and presents advanced forms of concert band literature.

MUS 372. MARCHING BAND. *One hour credit.*

Open to all men students regardless of major field who have had high school band experience. A study and practice of the fundamentals of drill and presentation of marching maneuvers and pageants at athletic events. Required during Fall Quarter for men in either Symphonic Wind Band or Concert Band. Satisfies physical education requirements for Fall Quarter.

MUS 373. VARSITY BAND. *One hour credit.*

Open to all students regardless of major who have had high school band experience. To provide music for athletic and college functions. To read material suitable for use by high school band.

MUS 374. JAZZ ENSEMBLE. *One hour credit.*

Membership in the Jazz Ensemble is limited to five trumpets, five trombones, five saxophones, and three rhythm players (piano, string bass, percussion). This unit is concerned with jazz idiom music: show music, dance music, and concert jazz. The goal of this type of ensemble training is to give the student a thorough idiom in preparation for teaching at both the secondary and college levels. Members of Jazz Ensemble who are music majors must be enrolled in a major ensemble.

MUS 375. SYMPHONY ORCHESTRA. *One hour credit.*

The College Symphony Orchestra is a rapidly developing organization in which the wealth of the world's most outstanding music is performed. The orchestra is presented regularly in local concerts and participates in performance of the large works for chorus and orchestra performed by the faculty and students of the School of Music.

MUS 376. CHAMBER ORCHESTRA. *One hour credit*

A select group of approximately 20 string students chosen by audition from the membership of the Symphony Orchestra. The Orchestra performs and reads literature from the Baroque to the present day, specializing in material specifically designed for chamber orchestra.

MUS 377. LABORATORY ORCHESTRA. *One hour credit.*

A laboratory course to provide practice orchestra experience on stringed instruments. Orchestral materials and the use of them for continued development of string students will be discussed and demonstrated.

MUS 378. MIXED CONCERT CHOIR. *One hour credit.*

Membership in the concert choir is limited to approximately 60 singers. This organization performs a wide range of choral literature from the classics to the music of contemporary composers. The organization is recognized widely for its excellence as a choral performing group. It is in demand throughout the region for concert appearances.

MUS 379. ORATORIO CHORUS. *One hour credit.*

Membership to the group of approximately 150 singers is open to all college students on an audition basis. The choir specializes in the performance of large choral masterworks such as Handel's "Messiah" and the "Creation" by Haydn.

MUS 380. CHORUS AND ORCHESTRA WORKSHOP. *One hour credit.*

Conducted by authorities nationally known in their fields of specialization. The purpose of the workshop is to provide information about current important ideas in each field of knowledge.

MUS 381. WOMEN'S CONCERT CHOIR. *One hour credit.*

The women's choir is open to all women students who enjoy singing the literature for women's voices. This group performs for many local community and college events. Elementary education majors are especially urged to apply for membership.

MUS 382. VARSITY MEN'S GLEE CLUB. *One hour credit.*

Membership is open to the entire male student body. A love of singing is the main requirement for registration. No formal audition is necessary. The Varsity Men's Glee Club affords an opportunity for men from all schools and divisions to participate in the great tradition of men's ensemble singing while performing a wide range of literature before college and community audiences.

MUS 383. CHAMBER SINGERS. *One hour credit.*

A select group of approximately 20 singers chosen by audition from the membership of the Concert Choir. The choir utilizes in material specifically designed for chamber ensemble.

MUS 384. OPERA WORKSHOP. *One to three hours credit.*

Workshop offering practical experience in production of a musico-dramatic show. Techniques of acting, singing, directing, and other facets necessary for preparation of a show for public performance will be offered.

MUS 385. STRING ENSEMBLE. *One hour credit.*

MUS 386. BRASS ENSEMBLE. *One hour credit.*

MUS 387. WOODWIND ENSEMBLE. *One hour credit.*

MUS 388. PERCUSSION ENSEMBLE. *One hour credit.*

MUS 389. PIANO ENSEMBLE. *One hour credit.*

MUS 399. CHAMBER BRASS CONSORT. *On hour credit.*

A select performing ensemble of 15 to 20 brass students with added percussionists when necessary. Concentration is upon familiarization of literature for the brass instrumental media as well as upon development of musical sensitivity, phrasing, style and intonation.

MUS 401. RESEARCH SEMINAR IN MUSIC EDUCATION. *Three hours credit.*

Analysis of studies in music education; writing and research techniques for dissertations and field studies; a survey of critical problems in music education; the preparation of the research outline.

MUS 402. FOUNDATIONS OF MUSIC EDUCATION. *Three hours credit.*

A critical analysis of instructional procedures in teaching aural, rhythmic, and theoretical concepts in music. A study of philosophical, psychological, and sociological backgrounds of education as related to the arts. Symposium of advanced graduate students and music education faculty in addition to the regularly scheduled class meetings.

MUS 420. CRITERIA FOR MUSIC ANALYSIS AND COMPARISON. *Four hours credit.*

MUS 420 is designed as an introductory course to acquaint the candidate with the subtleties of analytical and comparative music problems.

MUS 421. PRACTICUM IN ARRANGING AND PERFORMANCE. *Three hours credit.*

Prerequisite, MUS 420. This course will deal with transcribing, editing, and performing of valuable music from unusable original forms to useful available material for pedagogic, historic and concert occasions. Stylistic practices will be given major consideration. Music of the Baroque and Pre-Baroque eras will be the chief sources of material.

MUS 422. ANALYTICAL STUDIES I. *Three hours credit.*

Prerequisite, mastery of traditional harmony. Studies in analyzing the structure of music to 1700.

MUS 423. ANALYTICAL STUDIES II. *Three hours credit.*

Prerequisite, mastery of traditional harmony. Studies in the analysis of music structure from 1700 to 1830.

MUS 424. HISTORY OF MENSURAL NOTATION. *Three hours credit.*

A study of ensemble notational procedures from 1200 to 1600.

NURSING

NURS 201. PREVENTIVE MEDICINE AND PUBLIC HEALTH. *Three hours credit.*

A study of concepts derived from the field of Public Health which includes an introduction to Public Health Administration, environmental sanitation, biostatistics, and epidemiology. Concurrent with NURS 200.

NURS 204. TRENDS IN NURSING. *Three hours credit.*

Prerequisites, NURS 102, 103, 104 or permission of instructor. A study of trends, problems and issues in present-day nursing. Historical and contemporary social forces are studied in relation to their influence on the development of nursing. Emphasis is on the responsibilities of the professional nurse in an increasingly complex system of health and medical care.

PHILOSOPHY (Administered by English Department)

PHIL 210. ETHICS AND VALUE-THEORY. *Three hours credit.*

A consideration of the major philosophers' views on problems of ethics and of values, from early Greek to contemporary thought.

PHIL 220. LOGIC IN PRACTICE. *Three hours credit.*

A practical study of the uses of deductive and inductive logic, including consideration of current uses of verbal and material logical-fallacies.

PHIL 230. PROBLEMS IN PHILOSOPHY. *Three hours credit.*

A consideration of the major philosophers' views on problems in epistemology, metaphysics, and aesthetics, from early Greek to contemporary thought.

PHIL 240. HISTORY OF WESTERN PHILOSOPHY I. *Three hours credit.*

Classical and medieval philosophy from the pre-Socratics through Aquinas. Readings from such philosophers as Plato, Aristotle, Augustine, and Aquinas are utilized, along with a basic history of philosophy text.

PHIL 250. HISTORY OF WESTERN PHILOSOPHY II. *Three hours credit.*

Modern philosophy from Descartes through Hume, with emphasis being placed on the break with the medieval and classical tradition. Selected readings from and about such philosophers as Descartes, Hobbes, Spinoza, Locke, Berkeley, and Hume.

PHIL 260. HISTORY OF WESTERN PHILOSOPHY III. *Three hours credit.*

Modern and contemporary philosophy, including such philosophers as Kant, Hegel, Sartre, Whitehead, and Russell.

PHYSICS

PHYS 260. SOUND. *Three hours credit.*

A study of sound waves, their nature, propagation, and modes of combination. Includes supporting mathematical instruction and demonstration of basic instrumental measurements. Not open to physics majors or minors.

PHYS 261. INTRODUCTION TO RESEARCH IN PHYSICS. *Two hours credit. (Maximum six hours credit.)*

Prerequisites, PHYS 165, 266. A course to introduce the various aspects of research in physics. Emphasis will be placed on laboratory techniques used in obtaining data. Informal student seminars will be held and at termination of course, the student will submit a written report on this research involved.

PHYS 262. ELECTRONICS I. *Four hours credit. (Three hours lecture, three hours laboratory.)*

Prerequisite, PHYS 162. A continuation of PHYS 162. Topics to be covered include simple diodes, triodes, power supplies, simple amplifiers, simple detectors, types of amplifiers, R. F. circuitry and an introduction to transistor theory.

PHYS 264. THERMODYNAMICS. *Four hours credit.*

Prerequisites, PHYS 67, MATH 34. An introduction to heat and thermodynamics. This course covers thermodynamic systems, equations of state, the first and second laws of thermodynamics and an introduction to kinetic theory.

PHYS 265. MECHANICS II. *Three hours credit.*

Prerequisites, PHYS 165, MATH 34. Second course of a sequence of two courses. Topics covered include motion of systems of particles, rigid body motion in a plane and in three dimensions, central field motion, accelerated reference systems.

PHYS 266. ELECTRICITY AND MAGNETISM II. *Three hours credit.*

Prerequisites, PHYS 166, MATH 34. Second course in a sequence of two courses. A course which deals with the theory of dielectrics, the magnetic properties of matter and an introduction to electromagnetic theory.

PHYS 267. OPTICS II. *Four hours credit. (Three hours lecture, three hours laboratory.)*

Prerequisites, PHYS 67 and MATH 34. This course is an introduction to the advanced study of light. Topics to be studied in this course include geometrical optics, reflections, thin and thick lenses, optical instruments, wave theory of light, interference, diffraction and the electromagnetic nature of light.

PHYS 268. ATOMIC PHYSICS. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisites, PHYS 68, 165, MATH 34. A study of modern physics concepts including the electron and its properties, energy levels, quantum numbers, X-rays, and elementary aspects of relativity and quantum physics.

PHYS 269. NUCLEAR PHYSICS I. *Five hours credit. (Four hours lecture, three hours laboratory.)*

Prerequisites, PHYS 68, 165, MATH 34. A study of the nucleus of the atom including nuclear processes, decay schemes, sub-atomic particles and high energy reactions.

PHYS 272. ELECTRONICS II. *Three hours credit. (Two hours lecture, three hours laboratory.)*

Prerequisite, PHYS 262. A study of electronic theory and application to include multistage and power amplifiers, methods of pulse and wave shaping, and electronic switching and timing systems. Transistor theory as well as tube theory will be emphasized.

PHYS 275. MECHANICS III. *Three hours credit.*

Prerequisites, PHYS 265, MATH 34. First course in a sequence of three courses. Particle and rigid body motion are treated by the methods of vector calculus, calculus of variations, and matrix algebra. Included are the La-Grangian and Hamiltonian formulations, small oscillations, rigid body motion, and relativistic mechanics.

PHYS 276. ELECTRICITY AND MAGNETISM III. *Three hours credit.*

Prerequisites, PHYS 266, MATH 34. Second course in a sequence of three courses. Static charge distributions in space, upon conductors, or in dielectrics, motion of charges and the magnetic field arising from such motion, electromagnetic

induction, electromagnetic radiation, and magnetic properties of matter are examined by advanced mathematical techniques.

PHYS 290. HARVARD PROJECT PHYSICS I. *Eleven hours credit. (Five hours lecture, eighteen hours laboratory.)*

Prerequisite, College-School Cooperative Institute Member. This is the first course sequence to prepare high school teachers of physics to teach the Harvard Project Physics (HPP) course to high school students. The necessary physics background and the content of the HPP course will be emphasized.

PHYS 291. HARVARD PROJECT PHYSICS II. *Two hours credit.*

Prerequisite, PHYS 290. This is the second of four courses to train teachers in Harvard Project Physics. The concentration will be on the instructional materials and content of units I and II of the HPP courses.

PHYS 292. HARVARD PROJECT PHYSICS III. *Two hours credit.*

Prerequisite, PHYS 291. This is the third course of four courses to train teachers in Harvard Project Physics. The concentration will be on the instructional materials and content of units III and IV of the HPP course.

PHYS 293. HARVARD PROJECT PHYSICS IV. *Two hours credit.*

Prerequisite, PHYS 292. This is the fourth course of four courses to train teachers in Harvard Project Physics. The concentration will be on the instructional materials and content of units V and VI of the HPP course.

PHYS 361. GRADUATE RESEARCH IN PHYSICS. *Two hours credit. (Maximum six hours credit.)*

A course designed to familiarize the student with research in physics. It involves investigation of physics journals, study of physics research problems, and research of a subproblem in physics culminating in an oral and written report.

PHYS 363. NUCLEAR MEASUREMENTS. *Two hours credit.*

Prerequisite, PHYS 269. This is a laboratory course in which various nuclear phenomena are studied in the laboratory. Some of the experiments to be performed include G-M measurement techniques, gamma ray spectrum, absorption of alpha, beta, and gamma rays, half-life measurements.

PHYS 367. INTRODUCTION TO THEORETICAL PHYSICS. *Four hours credit.*

Prerequisites, PHYS 267, 275, 276. Mathematical formalism and electromagnetic theory are utilized to analyze and connect the topics of Fresnel diffraction, dispersion, reflection, ordinary and double refraction, polarization, absorption, and scattering.

PHYS 368. WAVE MECHANICS I. *Four hours credit.*

Prerequisites, PHYS 265, 268, and MATH 230. This course is an introduction to quantum mechanics and the quantum theory. Some of the topics to be covered include Planck's radiation theory, the Bohr postulates, the correspondence principle, de Broglie waves, the Schrodinger wave equation, and the uncertainty principle.

PHYS 369. NUCLEAR PHYSICS II. *Three hours credit.*

Prerequisite, PHYS 269. A graduate course in theoretical nuclear physics. Topics include elementary quantum theory, particle and photon interactions, theory of alpha, beta, and gamma decay, the shell and liquid drop models of the nuclear atom.

PHYS 378. WAVE MECHANICS II. *Three hours credit.*

Prerequisite, PHYS 368. A continuation of Wave Mechanics I. Topics to be covered include the three dimensional wave equation, eigenvalues and eigenfunctions, operators and expectation values, time dependent and time independent perturbation theory.

POLITICAL SCIENCE

PSCI 200. RESEARCH AND INQUIRY IN POLITICAL SCIENCE. *Three hours credit.*

Prerequisite, PSCI 40 or PSCI 41 and 42. A study in the use of the scientific method in political science. Special attention will be focused on research methods and materials and the use of library facilities and bibliographies.

PSCI 210. GOVERNMENT AND POLITICS OF ASIA. *Four hours credit.*

Prerequisite, PSCI 40 or PSCI 41 and 42. A comparative study of major political systems of Asia, including China, Japan, India and Indonesia.

PSCI 211. GOVERNMENT AND POLITICS OF LATIN AMERICA. *Four hours credit.*

Prerequisite, PSCI 40 or PSCI 41 and 42. A comparative study of the political systems of Latin America.

PSCI 212. THE POLITICS OF THE DEVELOPING AREAS. *Four hours credit.*

Prerequisite, PSCI 40 or PSCI 41 and 42. A study of the politics of developing areas, with particular emphasis on Africa, Asia and the Middle East; concepts of development, modernization and nation-building.

PSCI 213. POLITICAL SYSTEMS OF SUB-SAHARAN AFRICA. *Four hours credit.*

Analysis of major types of political systems in Sub-Saharan Africa with case studies of selected countries exemplifying each type. Special problems of multi-racial and multicultural societies.

PSCI 214. GOVERNMENT AND POLITICS OF THE SOVIET UNION. *Four hours credit.*

An intensive inquiry into the institutions and processes of the government of the Soviet Union.

PSCI 250. NEW VIEWPOINTS IN POLITICAL SCIENCE AND THE OTHER SOCIAL SCIENCES. *Three hours credit.*

A survey of recent findings and new interpretations in the various social science fields. Recent literature in the fields will be studied and discussed. Specialists will be invited to contribute to discussions. Teaching experience is a course prerequisite. Credit is not applicable to graduate programs in History or the Social Sciences.

PSCI 252. MINORITY POLITICS. *Three hours credit.*

A study of the political techniques and strategies by which ethnic, racial, religious, and economic minority groups have achieved socio-economic goals through the political system. Electoral and non-electoral politics will be evaluated.

PSCI 260. AMERICAN POLITICAL BELIEF-SYSTEMS. *Three hours credit.*

Prerequisites, five quarter hours in United States national government and a course in political philosophy or permission of instructor. An analysis of the United States contribution to thought on such subjects as authority and obligation in civil society. Special attention will be paid to the themes of majoritarianism, constitutionalism and civil disobedience.

PSCI 275. THE UNITED NATIONS. *Three hours credit.*

The background and organization of the United Nations. Includes a detailed study of the six organic bodies of the United Nations and its subsidiary agencies.

PSCI 276. FOUNDATIONS OF INTERNATIONAL POLITICS. *Four hours credit.*

Prerequisite, PSCI 76. An intensive investigation into the theories and processes of international politics.

PSCI 277. SOVIET FOREIGN POLICY. *Three hours credit.*

An analysis of recent and contemporary problems of the relations of the Soviet Union with Western, neutralist, and non-Soviet communist nations.

PSCI 279. POLITICAL PARTIES. *Three hours credit.*

Prerequisites, PSCI 40 or PSCI 41, 42, and 171. The organization and techniques of political parties in the United States, the voting behavior of the electorate and the problems relating to the machinery of representative democracy.

PSCI 280. REGIONAL AND SUPRANATIONAL POLITICAL ORGANIZATIONS. *Four hours credit.*

Prerequisite, PSCI 76. An analysis of some regional and supranational political organizations, such as the North Atlantic Treaty Organization and the European Economic Community, and an evaluation of the role and significance of these organizations in international politics.

PSCI 290. NDEA CIVICS INSTITUTE. *Eight hours credit.*

An institute for junior high school teachers of civics with two years of teaching experience. The institution will run 8 weeks and will include lectures and seminars in the development of political conceptualization. Special sessions will be held in methodology and materials for teaching political concepts.

PSCI 310. SEMINAR IN COMPARATIVE POLITICS. *Three hours credit.*

Prerequisites, PSCI 73 and PSCI 210, 211 or 212. Methodological problems of comparative politics; cross-national comparisons on formal political institutions, political groups, decision-making processes, and the machineries of popular control; interpretation of contemporary political forces, processes, and systems in terms of key analytical concepts; research and reports on selected topics.

PSCI 377. CONSTITUTIONAL LAW. *Five hours credit.*

Prerequisite, PSCI 40 or PSCI 41 and 42. The major sections and clauses of the Constitution as developed and interpreted by the courts and by leading writers in the field of constitutional law.

PSCI 379. SEMINAR IN INTERNATIONAL POLITICS. *Three hours credit.*

Research and reports on selected topics.

PSYCHOLOGY, COUNSELING AND GUIDANCE

PSY 200. GREAT IDEAS SEMINAR. *Three to nine hours credit.*

Prerequisite, majors and minors only, permission of instructor. A seminar forum for presentation in depth of current ideas of national scope which affect the discipline of psychology. Whenever possible national authorities will be asked to speak to the classes in the areas.

PSY 220. GENERAL PSYCHOLOGY AND THE PRINCIPLES OF BEHAVIOR. *Three hours credit.*

Prerequisite, previous work in psychology or previous course. A course in psychology designed to help students develop a basic understanding of human behavior. Principles of psychology are developed and applied in the areas of perception and cognition, maturation, motivation, learning, emotions, and personal and social adjustment.

PSY 222. SEMINAR: PSYCHOLOGICAL ISSUES. *Three hours credit.*

This is one of the culminating experiences in the minor. Students will study, report, and discuss psychological issues and problems which they identify in their class observation and study experiences. They will also review and discuss research findings and conduct small research projects of their own.

PSY 224. PSYCHOLOGY: FIELD EXPERIENCE. *Five to fifteen hours credit.*

Prerequisite, Advanced standing and permission of instructor, majors only. Either full time experience for one quarter or part-time experience for extended quarters working with professionals in any one or more of the field offices of the many helping professions where field experience programs have been contracted.

PSY 230. CHILD AND ADOLESCENT PSYCHOLOGY. *Three hours credit.*

A course designed to assist prospective teachers to understand and guide the physical, mental, social, and emotional development of children and youth. Total psychological development from infancy to maturity is emphasized.

PSY 240. PSYCHOLOGY OF PERCEPTION AND LEARNING. *Five hours credit.*

Considers basic theoretical and research evidence concerning learning and perception. Attitudes and understandings are developed concerning the application of psychological principles to the educative process. The relationship between human learning and perceptual-cognitive processes is explored.

PSY 275. EXPERIMENTATION IN PSYCHOLOGY. *Three hours credit.*

This is a course designed to introduce the student to experimental and other psychological research. It is concerned with the basic principles and concepts involved in conducting effective experimentation and research, and provides practical experience in reviewing, conducting, and reporting psychological research.

PSY 280. PSYCHOLOGY OF THE HEALTHY PERSONALITY. *Three hours credit.*

Modern humanistic and existentially oriented psychological research and commentary regarding positive mental health and healthy personality development will be studied. Concepts such as self-actualization, self-realization, self-fulfillment, the fully-functioning self, personal adequacy, becoming, and the human potential for freedom and growth explored by approaching the basic question of *What Can Man Become?*

PSY 283. PSYCHOLOGY OF PREJUDICE. *Three hours credit.*

A course designed to assist students so that they understand in depth the basic causes of prejudice and prejudicial behavior is learned. Experiences are provided for greater understanding of people and the processes for diminishing the degree of prejudice by the individual.

PSY 285. MENTAL HYGIENE AND EMOTIONAL ADJUSTMENT. *Three hours credit.*

Psychological principles, theories, and practices are examined and applied to individual, school, family, and community mental health problems.

PSY 288. ABNORMAL PSYCHOLOGY. *Three hours credit.*

Prerequisites, PSY 280, 285. The course is designed to give an understanding of abnormal behavior, its causes, symptoms, characteristics, classifications and prevention.

PSY 293. SOCIODRAMA. *Two hours credit.*

How to use sociodrama. The topics studied are producing a sociodrama, purposes of the sociodrama, types and use of the sociodrama.

PSY 294. SOCIOMETRY. *Two hours credit.*

The measurement of interpersonal relations in small groups; measurement of social status, social adjustment, leadership and morals. Sociometric organization of elementary and secondary school classrooms.

PCG 301. INTRODUCTORY SUPERVISED PRACTICE IN COUNSELING. *Three or six hours credit.*

Prerequisite, PCG 315. The course provides supervised experiences in counseling and interview analysis. Counselors consist of class members, college students, and other adults. Typescripts, tapes, teletapes, feedback from counselors and supervisors, and weekly seminars are used for process analysis. Alternate for PCG 411.

PCG 303. SUPERVISED PRACTICE IN COUNSELING WITH CHILDREN. *Three hours credit.*

Prerequisites, PCG 301. The course provides supervised experiences in counseling with school age children concentrating mostly on those in the elementary schools. Tapes, teletapes, self analysis, and feedback from the supervisor are used to analyze difficulties and improve proficiency in counseling. Class seminars are used for self improvement and process analysis. Alternate for PCG 413.

PCG 304. SUPERVISED PRACTICE IN COUNSELING WITH YOUTH. *Three hours credit.*

Prerequisites, PCG 301. The course provides supervised experiences in counseling with school age children and youth concentrating primarily on those at the junior and senior high school levels. Tapes, teletapes, self analysis, and feedback from the supervisor are used to analyze difficulties and improve proficiency in counseling. Class seminars are used for self improvement and process analysis. Alternate for PCG 414.

PCG 305. SUPERVISED PRACTICE IN COUNSELING WITH ADULTS. *Three hours credit.*

Prerequisites, PCG 301. The course provides additional supervised experiences in counseling with adults. Tapes, teletapes, self analysis, and feedback from the supervisor are used to analyze difficulties and improve proficiency in counseling. Class seminars are used for self improvement and process analysis. Alternate for PCG 415.

PCG 306. PLAY THERAPY. *Three hours credit.*

Prerequisite PCG, 301. Qualified graduate students majoring in Psychology, Counseling and Guidance examine the theoretical basis for play therapy and engage in practice under the supervision of one or more members of the staff. Alternate for PCG 416.

PCG 307. GUIDANCE IN THE ELEMENTARY SCHOOL. *Three hours credit.*

A study of the principles of guidance and their application at the elementary level. Emphasis is upon the functioning of the guidance worker in meeting children's needs.

PCG 308. GUIDANCE INSTITUTE. *Maximum of fifteen hours credit.*

A course designed to meet the needs of teachers and counselors wishing to upgrade their proficiencies in guidance activities.

PCG 309. GUIDANCE WORKSHOP. *Maximum of six hours credit.*

This course is designed to provide concentration of time and study in a special problem in guidance. The needs and interests of class members will help determine the course content and class activities.

PCG 310. SUPERVISED PRACTICE IN GUIDANCE SERVICES. *Three hours credit.*

Qualified graduate students majoring in Psychology, Counseling and Guidance engage in guidance activities under the supervision of one or more members of the staff. A typewritten report analyzing the experience must be submitted to the supervisors for approval and then filed in the Graduate School Office. Alternate for PCG 410.

PCG 311. ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES. *Three hours credit.*

The organization and administration of guidance services in the public school system with emphasis being placed on types of organizations, use of records, in-service training of workers, evaluation roles of various staff members, preparation of budgets, and use of community resources.

PCG 313. OCCUPATIONAL INFORMATION AND ANALYSIS IN VOCATIONAL GUIDANCE. (Secondary-Adult.) *Three hours credit.*

Analysis of vocational theory, society, changing value structure, and career development; critical examination of classifications of the world of work; investigation of labor forces and employment trends; exploration of basic principles related to educational-vocational planning; experiences in using, reviewing and evaluation of occupational information materials and sources.

PCG 314. TECHNIQUES IN GROUP GUIDANCE. *Three hours credit*

Prerequisite, PSY 101 or PCG 317. A study of information needed and methods used by home room or guidance personnel who help students in groups, with educational planning, vocational choice and interpersonal relations.

PCG 315. COUNSELING THEORIES. *Three hours credit.*

A study of the place of counseling in the guidance program and a critical analysis of the theoretical approaches used in conducting counseling interviews. Opportunity is provided to practice in the application of the various approaches.

PCG 316. CLINICAL METHODS IN PSYCHOLOGY. *Three hours credit.*

Prerequisites, PSY 285 and 288; PCG 380, 381 or 382. A course designed to integrate background knowledge of human development and characteristics, both normal and abnormal, with clinical techniques for appraisal of such development and characteristics. Directed particularly to advanced graduate students preparing to be school psychologists or school counselors.

PCG 317. FOUNDATIONS OF GUIDANCE. *Three hours credit.*

Introductory course for professional guidance workers. A study of individual and society needs for guidance and the development of a guidance point of view. Includes purposes and scope of guidance service, concepts, principles, personnel, and basic elements of such services.

PCG 318. OCCUPATIONAL INFORMATION FOR GUIDANCE IN ELEMENTARY SCHOOLS. *Three hours credit.*

Prerequisite, PSY 101 or PCG 307. A study of the nature, scope and rationale for occupational information in the guidance and counseling of elementary school children. The course covers theories and philosophies of occupational choices, methods and techniques in collecting and analyzing occupational information for guidance of young children, K-6.

PCG 320. FOUNDATIONS OF EXISTENTIAL PSYCHOLOGY. *Three hours credit.*

A study of the fundamental assumptions of existential thought as they translate into psychological theory. The focus will be on implications regarding the nature of man, his motivation, values and purpose relevant to American culture and conditions. Intended for graduate students majoring in PCG.

PCG 324. THEORIES OF MOTIVATION. *Three hours credit.*

A consideration of the topics of physiological drives, learned needs, reinforcement, sensory cues, behavior cycles, and social motives with special emphasis on the implication for the study of human behavior.

PCG 325. HUMAN NEUROPSYCHOLOGY. *Four hours credit.*

This course integrates current knowledge of neurophysiology with psychological correlates. Emphasis is placed on learning, motivation, perception, and personality variables as revealed in supervised psychodiagnostic experiences. Selected procedures and case studies are used to assess the role of neurological, especially brain, function or dysfunction and the consequent behavioral manifestations.

PCG 326. SEMINAR IN PERCEPTUAL PSYCHOLOGY. *Three hours credit.*

Prerequisites, graduate status; permission of instructor. A seminar designed to allow students to study, report, and discuss basic perceptual psychological theory and research. Areas of investigation will include the relationship of human perception to such topics as: (1) the self concept, (2) motivation, (3) goals and values, (4) growth and development, (5) emotions and feelings, and (6) the teaching-learning process or other related "helping" professions. Students may construct perceptual demonstrations or design perceptual research.

PCG 329. INTERNSHIP. *Maximum 16 hours credit per quarter.*

A practical field experience for qualified graduate students in areas of their specialty. The internship provides credit hours above those normally required for the degree.

PCG 330. PSYCHOLOGY OF EARLY CHILDHOOD. *Three hours credit.*

Prerequisite, a course in general psychology. A study of psychological theories and their applications to the understanding of characteristics, behaviors and development of young children. Intended primarily for students majoring in early childhood education and others planning to work with children from the nursery school through second grade.

PCG 331. CHILD PSYCHOLOGY. *Three hours credit.*

A study of the growth, adjustment and capacities of children from conception through the elementary school years. Emphasis is placed on the theories of development and on application in guiding the development of normal children.

PCG 332. PSYCHOLOGY OF ADOLESCENCE. *Three hours credit.*

This course deals with the change from the period of childhood into adulthood and the resultant physical, mental, social, and emotional growth with its implications for guiding the adolescent toward a wholesome realization of his potentialities.

PCG 333. PSYCHOLOGY OF COLLEGE STUDENTS AND OTHER ADULTS. *Three hours credit.*

A course to enable students to study the psychological phenomena of the life span from post-adolescence through the final stages of adulthood. Major theories concerned with processes maturing will be examined and problems characteristic of this age span will be considered. Emphasis will be placed on understanding related research and assessing areas indicative of need for further research.

PCG 334. PSYCHOLOGY OF INDIVIDUAL DIFFERENCES. *Three hours credit.*

The nature and extent of differences among individuals and differences between such groups as men and women, age, class, race and nationality; factors related to these differences; and the application of the facts of human variability to educational, vocational, social and personnel work.

PCG 340. THEORIES OF LEARNING. *Five hours credit.*

The several theories of learning are examined critically for the purpose of developing a working control of the learning process by the student.

PCG 347. LEARNING DISABILITIES: DIAGNOSIS AND REMEDIATION. *Three hours credit.*

Prerequisite, PSY 240, teaching experience. The course considers techniques used by school psychologists in identifying and evaluating extreme learning problems. It is also concerned with planning and coordinating remedial experiences.

PCG 370. PRINCIPLES AND PRACTICES IN TESTING AND MEASUREMENT. *Three hours credit.*

A course designed to develop understanding of the functional relationship between measurement and evaluation. Attention is given to teacher-made and standardized instruments and to essential statistical concepts. Laboratory experience is provided in construction, administration and interpretation of tests.

PCG 371. APTITUDE AND ACHIEVEMENT ANALYSIS. *Five hours credit.*

Prerequisite, PSY 170 or PCG 370. Standardized psychological instruments are critically analyzed in terms of the Technical Recommendations for Psychological Tests and Techniques. Students take a series of tests and incorporate the interpreted results into a self-case study. Laboratory experiences are provided in the administration and interpretation of group tests.

PCG 372. APTITUDE AND ACHIEVEMENT ANALYSIS, K-6. *Five hours credit.*

Prerequisite, PSY 170 or PCG 370 and permission of instructor. Standardized psychological instruments developed specifically for young children, grades K-6, are critically analyzed in terms of the APA Technical Recommendations for Psychological Tests and Diagnostic Techniques. Experiences in administration and interpretation of various standardized instruments used at the elementary school level is provided.

PCG 373. INDIVIDUAL TESTS OF INTELLIGENCE. *Four hours credit.*

Prerequisite, PCG 370. The history, theoretical backgrounds and descriptions of the Stanford-Binet Intelligence Scale, the Wechsler Pre-School and Primary Scale, the Wechsler Intelligence Scale for Children and the Wechsler Adult Intelligence Scale. Not open to unclassified students.

PCG 374. SUPERVISED PRACTICE IN THE USE OF INDIVIDUAL TESTS OF INTELLIGENCE I (Pre-School through Adult Age Levels). *Six hours credit.*

Prerequisites, PCG 373 and permission of instructor. This course provides supervised practice in administering, scoring, reporting and interpreting the results of the 1960 Stanford-Binet Intelligence Scale, the Wechsler Pre-School and Primary Scale, the Wechsler Intelligence Scale for Children and the Wechsler Adult Intelligence Scale. Intended for students preparing for professional positions in which their responsibilities include testing subjects of all age levels. Recommended for students majoring in School Psychometry. Not open to students who have taken PCG 375 or PCG 376 or unclassified students.

PCG 375. SUPERVISED PRACTICE IN THE USE OF INDIVIDUAL TESTS OF INTELLIGENCE II (Emphasis on Pre-School through Junior High School Age Levels). *Five hours credit.*

Prerequisites, PCG 373 and permission of instructor. This course provides supervised practice in administering, scoring, reporting and interpreting the results of the 1960 Stanford-Binet Intelligence Scale, the Wechsler Pre-School and Primary Scale, and the Wechsler Intelligence Scale for Children. Recommended for students majoring in School Psychology, Remedial Reading, Teaching of Reading and Special Education. Not open to students who have taken PCG 374 or PCG 376 or unclassified students.

PCG 376. SUPERVISED PRACTICE IN THE USE OF INDIVIDUAL TESTS OF INTELLIGENCE III (Emphasis on Adolescent and Adult Age Levels). *Five hours credit.*

Prerequisites, PCG 373 and permission of instructor. This course provides supervised practice in administering, scoring, reporting, and interpreting the results of the 1960 Stanford-Binet Intelligence Scale, the Wechsler Intelligence Scale for Children, and the Wechsler Adult Intelligence Scale. Recommended for students majoring in Vocational Rehabilitation Counseling and College Student Personnel Work. Not open to students who have taken PCG 374 or PCG 375 or unclassified students.

PCG 377. USE OF PSYCHODIAGNOSTIC TESTING INSTRUMENTS WITH CHILDREN. *Four hours credit.*

Prerequisites, PSY 288; PCG 371, or 372, 374, 375 or 376; PCG 388. Theoretical backgrounds of, and the supervised practice in, the use of psychodiagnostic instruments such as the Bender Visual Motor Gestalt Test for Children, the Illinois Test of Psycholinguistic Abilities, the Marianne Frostig Developmental Test of Visual Perception, the Minnesota Percepto-Diagnostic Test. Special emphasis is placed on understanding the inter-relationships of results of these instruments along with the results of intelligence and achievement tests and non-standardized sources of data in diagnosing psychological problems of children.

PCG 380. THEORIES OF PERSONALITY. *Three hours credit.*

The course explores the psychological factors underlying personality development and adjustment and concentrates on the theories by which personality structure is explained.

PCG 381. SURVEY OF PROJECTIVE TECHNIQUES. *Three hours credit.*

Prerequisite, PCG 370. Develops the theories and rationale behind the most commonly used projective techniques including attention to the pertinent research. The course is designed for students in related professions who are likely to be working with psychologists and psychological reports.

PCG 382. INTRODUCTION TO RORSCHACH ADMINISTRATION AND SCORING. *Three hours credit.*

Prerequisites, PSY 288; PCG 340, 374, 375 or 376, and 380. A course for graduate students in training to become school psychologists. Stresses the conceptual basis for comparing the projective with more traditional psychometric procedures and develops beginning skills in actual administration and scoring of the Rorschach Test.

PCG 383. PROJECTIVE TECHNIQUE. *Three hours credit.*

Prerequisite, PCG 382. Continues the topics begun in PCG 382 with special attention to problems of interpretation. Additional projective techniques such as the TAT, sentence completion tests, etc. are considered. Enrollment is limited to students in training to become school psychologists.

PCG 384. GROUP DYNAMICS IN HUMAN RELATIONS. *Three hours credit.*

Prerequisite, PCG 315. A course designed to give an understanding of the principles of group dynamics as applied to group situations including the classroom.

PCG 387. SEMINAR IN SCHOOL PSYCHOLOGY. *Three hours credit.*

A seminar intended to develop an appreciation for the professional issues and problems of concern to the school psychologist. The course considers such topics as qualifications for test administration, confidentiality, relations with other professions, problems of referral, and report writing.

PCG 389. ADVANCED PSYCHOPATHOLOGY. *Three hours credit.*

Prerequisite, PSY 288 and permission of instructor. This course is designed for school psychology graduate students and is a continuation in greater depth of the topics in disorganized personality treated in PSY 288. Attention will be devoted to the projective test behavior related to the conditions discussed.

PCG 390. INTERNSHIP IN SCHOOL PSYCHOLOGY. *Maximum of sixteen hours credit.*

Prerequisites, PCG 375 or 376, 382, 383. A practical field work experience in the practice of school psychology under supervision conducted in selected public school systems.

PCG 399. ORIENTATION TO PSYCHOLOGY AND THE SELF. *Three hours credit.*

Required during first quarter of PCG master's program. Provides orientation to graduate study and presents basic philosophical positions in psychology. It provides for interactions between new students and the PCG faculty which will facilitate their evaluations as to the feasibility of the student's pursuing his graduate work at this institution.

PCG 410. SUPERVISED PRACTICE IN GUIDANCE SERVICES. *Three hours credit.*

Prerequisite, PCG 301 or 411. Qualified students majoring in Psychology, Counseling and Guidance engage in guidance activities under the supervision of one or more members of the staff. A typewritten report analyzing the experience must be submitted to the supervisor for approval and then filed in the Graduate School Office.

PCG 411. INTRODUCTORY SUPERVISED PRACTICE IN COUNSELING. *Three or six hours credit.*

Prerequisite PCG 315. The course provides supervised experiences in counseling and interview analysis. Counselees consist of class members, college students, and other adults. Typescripts, tapes, teletapes, feedback from counselees and supervisors, and weekly seminars are used for process analysis.

PCG 412. ANALYSIS OF THE INDIVIDUAL. *Three hours credit.*

Prerequisites, Permission of Instructor or Advisor. A course designed to develop understandings and skills in collecting and interpreting data concerning the individual, and the use of such data in case studies and follow-up procedures.

PCG 413. SUPERVISED PRACTICE IN COUNSELING WITH CHILDREN. *Three hours credit.*

Prerequisite, PCG 301 or 411. The course provides supervised experiences in counseling with school age children concentrating mostly on those in the elementary schools. Tapes, teletapes, self analysis, and feedback from the supervisor are used to analyze difficulties and improve proficiency in counseling. Class seminars are used for self improvement and process analysis.

PCG 414. SUPERVISED PRACTICE IN COUNSELING WITH YOUTH.
Three hours credit.

Prerequisite, PCG 301 or 411. The course provides supervised experiences in counseling with school age children and youth concentrating primarily on those at the junior and senior high school levels. Tapes, teletapes, self analysis, and feedback from the supervisor are used to analyze difficulties and improve proficiency in counseling. Class seminars are used for self improvement and process analysis.

PCG 415. SUPERVISED PRACTICE IN COUNSELING WITH ADULTS.
Three hours credit.

Prerequisite, PCG 301 or 411. The course provides additional supervised experiences in counseling with adults. Tapes, teletapes, self analysis, and feedback from the supervisor are used to analyze difficulties and improve proficiency in counseling. Class seminars are used for self improvement and process analysis.

PCG 416. PLAY THERAPY. *Three hours credit.*

Prerequisite, PCG 301 or 411. Qualified graduate students majoring in Psychology, Counseling and Guidance examine the theoretical basis for play therapy and engage in practice under the supervision of one or more members of the staff.

PCG 420. DEVELOPMENT AND PHILOSOPHY OF IDEAS IN PSYCHOLOGY. *Five hours credit.*

Prerequisite, permission of instructor. This course is intended to orient the advanced study in psychology to his discipline through a study of the origin, evolution and philosophical implications of issues and ideas in psychology.

PCG 421. TRENDS IN PSYCHOLOGY, COUNSELING AND GUIDANCE. *Three hours credit.*

A course designed to focus on current trends and research in the areas of human growth and development, learning, mental hygiene, guidance and counseling. Special emphases are placed on methods of identifying significant trends and recognition of broad implications of trends.

PCG 422. SEMINAR: ISSUES IN PSYCHOLOGY, COUNSELING AND GUIDANCE. *Three hours credit.*

A seminar designed to develop competency in discussion and evaluation of psychological, professional and ethical issues, pertinent research, and implications for action. The nature and functions of professional publications and organizations are examined.

PCG 429. INTERNSHIP. *Maximum 16 hours credit per quarter.*

Provides practical field experience for qualified doctoral candidates in areas of their speciality. The internship provides credit hours above those normally required for the doctor's degree.

PCG 441. PSYCHOLOGICAL FOUNDATIONS OF EDUCATION. *Three hours credit.*

For non-majors only. The psychological foundations of education are concerned with basic concepts pertinent to understanding human behavior. Cognition, perception, maturation, motivation, learning, emotions, personal and social adjustment areas are emphasized.

PCG 443. INTERNSHIP IN SUPERVISION OF COUNSELING. *Maximum of twelve hours credit.*

Prerequisites, PCG 301 and 303, 304 or 305; 310. The course is designed for doctoral candidates preparing for college teaching. It provides experiences in working with a regular staff member engaged in supervising counseling practicum. A log of experiences and an analysis of self growth are reported as a culmination of the course.

PCG 444. INTERNSHIP IN SUPERVISION OF GUIDANCE SERVICES. *Maximum of twelve hours credit.*

Prerequisites, PCG 301 and 303, 304 or 305; 310. The course is designed for specialist and doctoral candidates preparing for elementary, secondary school, college and university teaching and administration in the area of guidance services. It provides experiences in working with regular staff members engaged in guidance activities at all lines of education. A log of experiences and an analysis of self growth are reported as a culmination of the course.

PCG 445. INTERNSHIP IN SUPERVISION OF PSYCHOLOGICAL TESTING. *Four to twelve hours credit.*

Prerequisite, advanced students in testing may enroll in this course. Opportunity is provided for the student with successful and extensive background in psychological testing to participate under supervision in the instruction of the practice courses in testing. Experiences may include demonstration testing, supervision of practicing students, giving group or individual instruction in administering, scoring, reporting and interpreting test results.

PCG 470. MEASUREMENT: PREDICTION AND ASSESSMENT. *Three hours credit.*

Prerequisites, RSM 204, PCG 371 or 372. An advanced course in measurement integrating the principles of measurement, research and testing. Deals with the construction and use of predictor instruments. Emphasis is placed on the criterion problem and special methods of prediction and analysis.

PCG 471. MEASUREMENT: SCALING AND RELATED TECHNIQUES. *Three hours credit.*

Prerequisites, RSM 204, PCG 371 or 372. An advanced course on the theory and methods of scaling with emphasis on attitude scales. Several of the newer techniques, such as the Q-Sort and Semantic Differential, are also covered.

PCG 499. ORIENTATION TO THE GRADUATE PROGRAM AND SELF. *Three hours credit.*

Required during first quarter of the Ed.S. or Ed.D. degree program. Provides a variety of interactions between new students and PCG faculty leading to self-exploration, orientation, to graduate program and to philosophical persuasions of the department, and evaluation of appropriateness of the student's vocational choice at this institution.

READING (Elementary Education)

READ 200. READING WORKSHOP. *One-three hours credit.*

The sub-title will indicate whether the workshop is for elementary or secondary teachers. Topics related to remedial reading (diagnosis, causation, and remediation), word perception, study skills, reading in the content fields, and trends and issues will be treated in various workshops. No sub-title may be repeated for credit.

READ 216. READING IN THE SECONDARY SCHOOL. *Three hours credit.*

Suggested for English majors, undergraduates preparing to be secondary content area teachers, and graduate students with no background in reading instruction. Course content: Reading theory, concept of reading level, reading as skills development, detection of individual differences in reading ability, scope and sequence of skills development, reinforcement of reading skills.

READ 217. READING IN THE CONENT FIELD. *Three hours credit.*

A course designed to assist teachers in the content areas to teach subject matter in such a way as to utilize and further develop fundamental reading. Special consideration will ge given to effective reading skills, vocabulary development in specific subject areas, and study skills.

READ 222. READING IN THE PRIMARY GRADES. (ATE) *Three hours credit.*

The nature of reading, the pertinent research in the field, the curriculum in reading from the preparatory period through the primary grades, the selection of effective materials of teaching methods and techniques of teaching, and the use of various types of tests will be studied.

READ 223. READING IN THE INTERMEDIATE GRADES. (ATE) *Three hours credit.*

The purpose of this course is to emphasize the specific reading skills taught in the intermediate grades. These skills are identified and discussed in terms of instructional materials, methods, and evaluation procedures. The management of the reading program in the intermediate grades also receives attention in this course.

READ 226. PRACTICUM IN DIAGNOSTIC ORAL READING. *One hour credit.*

Prerequisite, enrollment in or completion of one of the following: READ 222, 223, 317, 324. A practicum designed to develop a sensitivity to the use of oral reading for diagnostic purposes. A student will spend 20 hours listening to taped readings on electronic notebooks of an entire class or on remedial students.

READ 299. NDEA READING INSTITUTE. *Twelve hours credit.*

A general reading institute co-sponsored by the U. S. Office of Education for teachers of reading with minimum backgrounds in reading. Course content includes consideration of word perception, comprehension, reading in the content field, reading study skills and the various basal, phonic, kinesthetic, linguistic and individual approaches to reading.

READ 308. LINGUISTIC FOUNDATIONS OF READING INSTRUCTION. *Three hours credit.*

A detailed consideration of the phonic structure of the English language, vocabulary development, sentence, and intonation patterns. Emphasis is on developing teacher competence in understanding linguistic foundations of reading instruction.

READ 310. READING IN THE ELEMENTARY SCHOOL. *Three hours credit.*

A detailed consideration of problems concerned with selection of what to teach, the grade placement of content, methods and materials of teaching, and means of evaluating achievement in reading.

READ 315. LITERATURE IN THE ELEMENTARY SCHOOL. *Two hours credit.*

Consideration will be given to locating and evaluating children's books and to the method of organizing, teaching, and evaluating a literature program.

READ 316. DEVELOPMENTAL READING IN THE SECONDARY SCHOOL. *Three hours credit.*

A detailed consideration of problems concerned with selecting what to teach, the grade placement of content, methods and materials of teaching, and means of evaluating achievement in reading in the junior and senior high schools.

READ 317. REMEDIAL READING IN THE SECONDARY SCHOOL. *Four hours credit.*

A course designed to give the classroom teacher, administrator or reading specialist insight concerning problems of the remedial reader in the secondary school. Causation, diagnosis, and remediation are considered in lecture sections. Two hours weekly is spent in the Oral Reading Diagnostic Laboratory.

READ 318. DEVELOPMENTAL AND REMEDIAL READING AT THE COLLEGE LEVEL. *Two hours credit.*

Prerequisite, READ 310 or 316 or equivalent. A detailed consideration of problems concerned with selecting what to teach, the placement of content methods and materials of teaching, and means of diagnosis and evaluation of reading achievement of college students.

READ 319. TEACHING THE CULTURALLY DISADVANTAGED TO READ. *Three hours credit.*

Prerequisite, READ 310 or 316 or equivalent. A consideration of dialectic differences in Negro and Spanish-American speech and their implications for teaching reading. Methods of teaching, evaluation and diagnosis will be emphasized.

READ 320. ANALYSIS OF READING METHODS. *Three hours credit.*

Prerequisite, READ 110 or 310. Evaluative criteria are examined and applied to the various approaches to reading including the basal readers, language experience, individualized, programmed, linguistic, phonic, spelling, audio-visual, and kinesthetic approaches. Emphasis is given to beginning reading instruction.

READ 324. REMEDIAL READING IN THE ELEMENTARY SCHOOL. *Four hours credit.*

Prerequisite, READ 310 or equivalent. This course is designed to give the

classroom teacher, administrator, or reading specialist insight concerning the problems of the educationally retarded reader in the elementary school. Course content includes diagnosis, causation, and remediation. Two hours weekly are spent in the Oral Reading Diagnostic Laboratory.

READ 325. REMEDIAL READING CASE STUDY. *Three hours credit.*
Prerequisite, READ 317 or 324. This course consists of tutoring an individual remedial reader for four hours per week. The fifth hour per week is spent in a seminar reviewing case studies and diagnostic and remedial techniques. Observations of tutoring are followed by individual and group conferences with the students.

READ 326. REMEDIAL READING INTERNSHIP. *Three hours credit.*
Prerequisite, READ 317 or 324. This course consists of serving as intern with a remedial reading teacher working with a small group of remedial reading students four hours weekly. Close supervision is given to diagnostic and remedial procedures by the remedial teacher and college staff. Observations of teaching are followed by individual and group conferences.

READ 327. READING CENTER INTERNSHIP: READING CLINIC, COLLEGE READING, ADULT LITERACY. *Maximum nine hours credit.*
Prerequisite, READ 317 or 324. Separate practicums in reading clinic, college reading, or teaching illiterate adults may be taken for three credits each. Course work consists of tutoring college students, illiterate adults or severely retarded readers, or supervising clinicians or conducting diagnostic service.

READ 329. NDEA REMEDIAL READING INSTITUTE. *Nine hours credit.*
The institute consists of remedial reading theory, developmental reading and a remedial reading practicum on-the-job.

READ 410. SEMINAR IN READING. *Three hours credit.*
Prerequisites, READ 320 and RSM 305. This seminar considers the trends and issues in teaching reading through an analysis of historical and current research in reading. Topics covered will vary from year to year according to the interests of the students.

RESEARCH AND STATISTICAL METHODOLOGY 70-71

RSM 304. DESCRIPTIVE STATISTICS. *Four hours credit.*
Study of problems in organizing, summarizing, and interpreting statistical information in solution of educational and psychological problems. Topics: Central tendency, variation, transformed scores, normal distribution model, bivariate correlation and regression, chi-square models, and introduction to sampling theory. Laboratory experiences will be provided.

RSM 305. STATISTICAL INFERENCE. *Five hours credit.*
Prerequisite, RSM 204. The theory and nature of statistical inference. Topics: Sampling error and central limit theorem; theoretical frequency distributions; binomial, normal, t, F, chi-square; hypothesis testing; estimation.

RSM 313. PLANNING AND METHODOLOGY OF RESEARCH. *Three hours credit.*
Prerequisite, RSM 305. Technical problems in planning and conducting studies. Topics: Locating and defining problems; measurement and scaling; sampling designs; problems specific to historical, survey, and experimental studies; data organization for computer processing. A research plan for an actual or hypothetical study will be developed by each student.

RSM 403. ANALYSIS OF VARIANCE AND COVARIANCE. *Three hours credit.*
Prerequisite, RSM 204, 305. Designs relative to group comparisons will be studied. Topics: Simple analysis of variance and covariance; factorial design; fixed, random, and mixed models; trend analysis; Latin square.

RSM 413. MULTIPLE REGRESSION. *Three hours credit.*

Prerequisite, RSM 403. The theory of regression analysis applied to problems involving many variables. Regression models are developed for analysis of variance and covariance, Neyman-Johnson technique, multiple discriminant function, curvilinear data, and discontinuous functions.

RSM 420. SEMINAR IN DISSERTATION EVALUATION. *No credit.*
(\$25.00 fee required.)

Designed for doctoral candidates who are in the process of planning their research. Individuals will present their tentative research proposals and receive criticism from the class and the staff.

RSM 423. NONPARAMETRIC STATISTICS. *Three hours credit.*

Prerequisite, RSM 204, 305. Selected nonparametric tests of research hypotheses are discussed in the light of: (1) the data to which the test is applicable, (2) the rationale underlying the test, (3) examples of application of the test in behavioral research, (4) comparison of the test with its parametric equivalent.

RSM 433. FACTOR ANALYSIS. *Three hours credit.*

Prerequisite, RSM 204, 305. Spearman's g-factor, centroid analysis, principal axis analysis, varimax solution. The theory of oblique and orthogonal solutions and the community problem will be considered.

RSM 444. RESEARCH PRACTICUM. *Twelve hours credit.*

Required of all candidates for the Ph.D. in Educational Research, Statistics, and Measurement. Four hours must be taken every quarter. Will not be offered during the summer. Special topics of advanced statistics, information processing, and measurement will be used.

RSM 454. RESEARCH PRACTICUM. *Twelve hours credit.*

Prerequisite, RSM 444. Required of all candidates for the Ph.D. in Educational Research, Statistics, and Measurement. Four hours must be taken every quarter. Will not be offered during the summer. Special topics of advanced statistics, information processing, and measurement will be used.

SCIENCE

SCI 200. HISTORY OF BIOLOGY. *Three hours credit.*

The study of the development of the biological sciences from Byzantium and Egyptian period to modern day. The study of the evaluation of biological thought and scientific methodology serve as a basis for gathering insights into men's modern cultural heritage.

SCI 201. HISTORY OF THE PHYSICAL SCIENCES. *Three hours credit.*

The study of the development of the basic concepts and principles of the physical sciences from the Greeks to the modern period stressing its contribution to our cultural heritage and the evaluation of science as an activity of men.

SCI 203. ELEMENTARY BIOLOGICAL SCIENCE. *Three hours credit.*
(Two hours lecture, three hours laboratory.)

A content course that emphasizes basic understanding of animal and plant life. Films, laboratory experiences, field work, visual aids, museum study and reading materials are used to develop the concepts. This course not applicable to a graduate science major.

SCI 204. COMMON MINERALS AND ROCKS. *Three hours credit.*

Prerequisite, consent of instructor. A laboratory course in the recognition of common minerals and rocks. On an arranged field trip each student will collect a set of specimens. Some outside readings required. Not applicable to a science degree or as a substitute for a required science course. Not open to students who have had GEOL 101 or 106.

SCI 205. PHYSICAL SCIENCE CONCEPTS. *Four hours credit.*

The fundamental concepts of physical science are presented to provide a background for elementary teachers. This course is not applicable to a graduate science major.

SCI 207. AEROSPACE WORKSHOP. *Three hours credit.*

The purpose of this course is to provide the elementary and secondary teacher with a general background in aviation and an understanding of the air and space age. Subject matter will include the elementary concepts of aircraft, rocket and satellite development, weather, navigation, theory of flight, and aviation in education.

SCI 208. ELEMENTARY SCIENCE WORKSHOP. *Three hours credit.*

A subject matter course for the improvement of science background through experimentation and demonstration. Opportunity is provided for the solution of individual problems through the guidance of the instructors. Visual aids, laboratory materials, discussions, professional literature, and field trips are other resources.

SCI 209. AVIATION AND SPACE FLIGHT. *Four hours credit.*

A non-technical elementary course in the subject matter of aviation and space flight. Units may include maps and charts, theory of flight, navigation and problems of space flight. Some attention given to teaching materials. This course not applicable to a graduate degree in science. Field trips required.

SCI 210. EARTH SCIENCE FOR ELEMENTARY TEACHERS. *Three hours credit.*

This course will be a combination of content and methods in the area of earth science. The earth science units from contemporary and traditional materials will be examined. Subject matter films, lectures, and demonstrations in the areas of geology, astronomy, meteorology, and oceanography will be included. This course is specifically designed to give the elementary teacher confidence and background to teach in the realm of earth science.

SCI 290. PHYSICAL PROPERTIES OF MATTER. *Three hours credit.*
(*NSF In-Service Institute.*)

This course will deal with some of the basic physical properties of matter and their measurement. Properties studied include density, thermal expansion, elasticity, freezing point, melting point, and boiling point. The experimental approach to the study of these properties will be emphasized.

SCI 291. THE CHEMICAL NATURE OF MATTER. *Three hours credit.*
(*NSF In-Service Institute.*)

This course will review modern concepts of the structure of gases, liquids, and solids and the relationship between structure and properties. Study of phase changes and solutions will include the concept of equilibrium.

SCI 292. THE ATOMIC NUCLEUS. *Three hours credit.* (*NSF In-Service Institute.*)

This course will deal with the atomic model of matter. Study includes radioactivity, both natural and artificially induced. The sizes and masses of atoms and molecules, and the methods of determination of molecular formulas will be considered.

SCI 330. GRADUATE READINGS COURSE IN SCIENCE. *Four hours credit.*

The required reading in several areas of science will consist of books written for the adult lay reader. Designated books will be required and a recommended supplementary reading list will be supplied. Each book will be the basis for class discussion and comment. This course not applicable to a graduate degree in science.

SCI 376. HISTORY OF SCIENCE. *Three hours credit.*

The fundamental purpose of the course is to show the evolution of scientific

thought and how it has contributed to contemporary methods of research. Emphasis will be devoted to the origin of the underlying principles, theories, laws of science, and the techniques used by various scientists in formulating their conclusions.

SCI 379. PHILOSOPHY OF SCIENCE. *Three hours credit.*

Prerequisite, EDHP 295, or 395, or 461. A study of the interrelations between philosophy and science with an attempt through exposition, discussion, and reconciliation to provide a clearer understanding of vital issues. Topics include the nature and sources of knowledge, meaning, and validity; criteria of objectivity, reality; examination of concepts underlying scientific method and development of scientific theories.

SCI 390. PHILOSOPHICAL FOUNDATIONS OF SCIENCE. *Four hours credit.*

A study of the structure of science. Relationship between facts, laws, and theories and how they are verified. The relation of science to society. And the relation of science to values and morality.

SCIENCE EDUCATION

SCED 270. TEACHING SCIENCE IN THE ELEMENTARY SCHOOL. (ATE). *Three hours credit. (Two hours lecture, three hours laboratory.)*

The purpose of this course is to develop a knowledge of objectives, methods, and materials which the teacher will need for providing learning activities, and for teaching a functional elementary science program. Laboratory activities are included.

SCED 278. INSTRUCTIONAL MATERIALS IN THE TEACHING OF SCIENCE. *Four hours credit. (Two hours lecture, six hours laboratory.)*

A course designed for the study and development of teaching materials for the science teacher. Particular emphasis will be placed on the materials associated with the new curriculum projects in science. Opportunities will be provided for the design and construction of suitable demonstration and laboratory aids. Commercial science teaching aids will be demonstrated, studied, and evaluated.

SCED 371. SCIENCE CURRICULUM IN THE ELEMENTARY SCHOOL. *Three hours credit.*

Elementary science programs organized by science educators are evaluated in terms of basic criteria. From the above analysis and a review of research, curricula are planned to satisfy certain requirements. This includes a statement of the student's philosophy, objectives, types of learning activities and generalizations which coordinate elementary science with secondary.

SCED 372. SCIENCE CURRICULUM IN THE SECONDARY SCHOOL. *Three hours credit.*

Secondary science programs organized by science educators are evaluated in terms of basic criteria. From the above analysis and review of research, K-12 curricula with emphasis on the secondary program are planned to satisfy certain requirements. This includes a statement of the student's philosophy, objectives, types of learning activities and generalizations which coordinate secondary science with elementary.

SCED 373. RESEARCH IN SCIENCE EDUCATION. *Three hours credit.*

This course is designed to develop an acquaintance with research in science education. The types of problems, quality and areas explored are a major function of this course. Some time is devoted to acquainting the student with library resources available, and a review of English Style Form used in preparation of research reports. Science teachers at all levels may explore research to help determine a problem for their own work and/or to become familiar with research that has been done. Open only to science education majors and minors.

SCED 374. INSTRUCTIONAL PROBLEMS IN TEACHING SCIENCE.
Three hours credit.

The study of instructional problems in teaching science in the elementary and secondary schools. The instructional problems may include problems relating to the pupils' ability in mathematics, reading and problem solving ability, to problems in laboratory, evaluation, demonstration, vocabulary, and provision for the better students.

SCED 375. DEVELOPMENT OF SCIENTIFIC INQUIRY ABILITIES OF CHILDREN THROUGH SCIENCE. *Four hours credit.*

The course emphasizes a need for the knowledge of the research in the field of scientific inquiry, the psychological elements involved in problem solving, the procedures incident to the organization of classroom techniques which will develop critical thinking and the scientific abilities of the student. Procedures for evaluation are considered fundamental.

SCED 376. CONSTRUCTION OF ACHIEVEMENT TESTS IN SCIENCE.
Three hours credit.

A study of achievement test construction and use by the science teacher. Topics include the philosophy, purposes and values of classroom tests. Kinds of achievement tests are studied with attention given to administration, marking, scoring and proper physical form. Use of frequency distributions, measures of control tendency and deviation is studied. Students construct test items and a complete test.

SCED 377. MODERN DEVELOPMENT OF SCHOOL SCIENCE. *Three hours credit.*

The course shall show modern science curriculum developments and the psychological and philosophical bases for their development. Emphasis shall be on cognitive learning, creativity, and techniques of developing inquiry. Non-science majors only.

SCED 378. SCIENCE EDUCATION SEMINAR. *One hour credit. (Maximum six hours credit.)*

This course gives the graduate student an opportunity to discuss current research in science education, to report on some topic of interest treated in recent literature, to discuss his own research problem, and to profit by the reports of others in the group.

SCED 379. SCIENCE CURRICULUM IN THE JUNIOR HIGH SCHOOL.
Three hours credit.

A course designed to acquaint students with the science curriculum in the junior high school. Existing curricula and "new" curricula will be discussed and evaluated.

SCED 380. PROBLEMS IN TEACHING PHYSICS. *Four hours credit.*

A study of current trends in the teaching of high school physics and the various problems which confront the teacher.

SCED 381 PROBLEMS IN TEACHING BIOLOGY. *Four hours credit.*

The course deals with the organization of biological units, teaching procedures, and evaluation of learning. Preparation of teaching materials and organization of lessons are included. Evaluation of present practices will be accomplished in terms of criteria that foster general education in a secondary school program.

SCED 382. PROBLEMS IN TEACHING CHEMISTRY. *Four hours credit.*

This course is designed to deal with special problems in the teaching of chemistry. This includes elementary concepts, laboratory and stockroom problems, and demonstrations.

SCED 383. PROBLEMS IN TEACHING ELEMENTARY SCHOOL SCIENCE.
Four hours credit.

This course is designed to deal with special problems in the teaching of elementary school science of importance to in-service experienced teachers and supervisors of science. This includes a brief summary of trends, philosophy, rationale and procedures in new elementary science curricula. Special attention will be given to the conduct and evaluation of laboratory work and newer innovations in teaching elementary science.

SCED 384. PROBLEMS IN TEACHING JUNIOR HIGH SCHOOL SCIENCE.

Four hours credit.

This course deals with the special problems confronting the teacher of junior high school science. Problems of laboratory work, materials, familiarization with philosophy and objectives of new curriculum developments at junior high level, motivation, discipline, and evaluation problems of the junior high age group will be considered.

SCED 385. ADMINISTRATION AND SUPERVISION OF SCIENCE K-12.

Four hours credit.

This course is designed to prepare the graduate student to function as a science coordinator of K-12 science programs.

SCED 477. EVALUATION AND TESTING IN SCIENCE. *Three hours credit.*

Prerequisite, RSM 204, SCED 376 or equivalent. This course involves the construction of some test items and the analysis of achievement tests used by classroom science teachers. The application of some statistical techniques to classroom testing and problems of planning and developing test programs in science will be studied.

SOCIAL STUDIES EDUCATION

SSED 231. INSTRUCTIONAL MATERIALS FOR THE SOCIAL STUDIES IN THE JUNIOR HIGH SCHOOL. (ATE) *Two hours credit.*

Study of instructional materials for junior high school social studies. Attention will be given to collateral, supplementary, and source materials, historical literature, audio-visual aids, graphic materials, community resources, current news media, music, creative activities, and techniques of evaluation.

SSED 245. SECONDARY SCHOOL SOCIAL STUDIES CURRICULUM WORKSHOP. (ATE) *Two hours credit.*

A workshop designed for secondary school teachers of the social studies who desire a knowledge of social studies curriculum research, theory and practice.

SSED 305. IMPROVEMENT OF INSTRUCTION IN SOCIAL STUDIES IN THE SECONDARY SCHOOL. (ATE or certification at the undergraduate level) *Three hours credit.*

Consideration of recent trends in the organization and teaching of social studies courses in the secondary school. Teachers will be given opportunity to evaluate new courses of study, new materials and new equipment.

SSED 402. CONCEPTS IN THE SOCIAL SCIENCES. (ATE or certification at the undergraduate level) *Five hours credit.*

Students will be exposed to the basic concept incorporated in theory relative to each social science discipline. Students will also be expected to develop annotated bibliographies relevant to each concept and to participate in regularly scheduled classroom discussions.

SSED 403. SEMINAR IN PROBLEMS OF TEACHING. (ATE or certification at the undergraduate level) *Five hours credit.*

Doctoral candidates will utilize understandings in the areas of (1) social analysis, (2) objectives, (3) curricular content, (4) the learning process, and (5) evaluation, in resolving problems anticipated in the light of doctoral and post-doctoral plans.

SOCIOLOGY

All of the following Sociology courses have as a prerequisite SOC 50 or equivalent.

SOC 200. SOCIAL PHILOSOPHY. *Three hours credit.*

The meaning of the experiences of mankind; a study of progress toward more adequate conceptions of relationships among men and peoples.

SOC 202. CRIMINOLOGICAL THEORIES. *Three hours credit.*

Prerequisite, SOC 102 or equivalent. Analysis and evaluation of the major historical and contemporary theories of criminal behavior.

SOC 203. SOCIOLOGY OF RELIGION. *Three hours credit.*

A comparative study of the world's major religions, their origins and historical development, their doctrines, literature, customs, and relations to society.

SOC 205. SOVIET SOCIETY TODAY. *Four hours credit.*

A sociological analysis of the Soviet Union's social institutions, social problems, and value systems, specifically considering the Communist ideology in theory and practice as revealed in examining the structure, function, and problems of the family, social stratification, nationalities, education, science, the arts, and social welfare programs.

SOC 207. COLLECTIVE BEHAVIOR. *Three hours credit.*

Relevant and appropriate sociological theory is directed to the subdiscipline of collective behavior. Mobs, riots, crowds, crazes, mass behavior, revolutions and reforms are unified through certain theoretical developments that permit the systematic examination of the social strains underlying collective effort and behavior.

SOC 211. HISTORY OF SOCIAL THOUGHT. *Five hours credit.*

A systematic and historical development of social thought from primitive folk thinking to contemporary theories of society and social relations.

SOC 212. CONTEMPORARY SOCIOLOGICAL THEORIES. *Three hours credit.*

This survey of contemporary sociological theories with particular emphasis on the theories of Parsons, Merton, Homans, Mills and Levy will relate contemporary theories to the thoughts of classical European and American sociologists.

SOC 222. THE SOCIOLOGY OF CHILD DEVELOPMENT. *Three hours credit.*

A sociological approach to the field of child development. The primary emphasis is upon the social situation and how the child grows and develops within its context from birth to maturity.

SOC 231. FORMAL ORGANIZATIONS. *Three hours credit.*

A sociological approach to the study of formal organizations. Course includes the theories of formal organizations, nature and types of organizations, the social structure of work groups, and the processes of communication within organizations.

SOC 232. SOCIAL CONFLICT. *Four hours credit.*

Analysis of the nature of social conflict, its origins, functions, dysfunctions, and how conflict is resolved or accommodations made to it.

SOC 242. SOCIAL DEVIANCE. *Four hours credit.*

A study of social deviancy, particularly in terms of the types, sources, functions, dysfunctions and social control mechanisms that operate relative to these departures from conformity.

SOC 252. SOCIOLOGY OF CRIMINAL LAW. *Four hours credit.*

Prerequisite, SOC 102 or equivalent. An inquiry into the origins of criminal law, its administration, and the effect of legal sanctions.

SOC 260. ETHICS, MORALITY, AND RACISM. *Three hours credit.*

A course devoted to the study of ethics, morality, and racism. It is intended that the material be approached on the basis of dialogue and confrontation in an attempt to deal with the burgeoning racist attitudes on the part of all people.

SOC 271. SOCIAL RESEARCH. *Four hours credit.*

The course focuses upon the scientific method as it applies to sociology and the social sciences. Methods and techniques of research, as well as study designs relevant to sociology, are examined.

SOC 281. SOCIOLOGY OF MEDICINE. *Three hours credit.*

A systematic attempt to relate sociological concepts to the fields of physical health and illness. An overview of socio-cultural aspects of the institution we know as "Medicine." The community and medical care, which will include medical education, the hospital as a social institution, concepts of medical practice.

SOC 288. SOCIOLOGY OF KNOWLEDGE. *Three hours credit.*

Prerequisite, SOC 211. The sociology of knowledge analyzes and evaluates the relationship between knowledge and existence, between thoughts and social structures, between mental productions and cultural and historical contexts.

SOC 291. SOCIAL PSYCHOLOGY. *Three hours credit.*

A study of social communication in human groups, the identification of mutually dependent elements in the human group and the study of the human group as an organic whole. The case study approach is used. Emphasis is given to leadership.

SOC 293. THE COMMUNITY. *Three hours credit.*

Common features of all communities and differences among communities due to size, ecology, occupation, distinctive history and cultural heritage are examined. The community is seen as a network of interacting social systems comprised of meaningful social groupings, family, religion, economy, local government, health, welfare services, and recreation.

SOC 294. WORLD POPULATION PROBLEMS. *Four hours credit.*

Various theories of population are examined. Methods of discovery are investigated and critical variables including fertility, mortality, and migration are analyzed. The general problem of population is related to major sociological variables to indicate the web of interdependency.

SOC 295. THE AMERICAN WOMAN. *Three hours credit.*

This course is designed to focus on the changing status of the American woman and its effects on our society. Will study the woman as a daughter, wife, mother, career girl and explore the varieties of roles and effects upon the matrix of our society.

SOC 302. SEMINAR IN AMERICAN SOCIETY TODAY. *Three hours credit.*

An advanced study of the main cultural and social structures of American society, the social relations, beliefs and values which characterize the people of the United States.

SOC 304. SEMINAR—MARRIAGE. *Three hours credit.*

A graduate seminar devoted to the exploration of marriage in depth, with a primary focus on American marriage. A secondary emphasis will be that of contrasting the American system with that of other societies.

SOC 305. SEMINAR IN THE FAMILY. *Three hours credit.*

A thorough evaluation of research trends and theory in the study of the American family.

SOC 306. SEMINAR IN HUMAN SEX AND REPRODUCTION. *Three hours credit.*

The last course in the sequence of Marriage and the Family. The course will essentially have three foci: (1) The physiology of sex, (2) The ethical use of sex, and (3) Reproduction.

SOC 310. SEMINAR IN COMPARATIVE SOCIAL INSTITUTIONS. *Five hours credit.*

The course will discuss social transition from the stateless society of the pre-historic period to the contemporary nation-states. It will illustrate the change from small isolated units of social interchange to the interdependent, and interrelated world-centered units of today. The course will conclude with an analysis of the recent trends toward universalism and the one-world concept.

SOC 311. SEMINAR IN SOCIOLOGICAL THEORY. *Three hours credit.*

The development of sociological theory from Comte to the present is analyzed with special emphasis on various European and American "schools." The

principal aim is to acquaint the student, systematically, with the concepts of sociological theory in order to orient him to various frames of reference for viewing human interaction.

SOC 312. CRIME RESEARCH: SEMINAR. *Three hours credit.*

Prerequisite, SOC 102 or equivalent. Selected problems in areas of criminal behavior, criminological theories, crime control or treatment of criminals. Student reports and critiques.

SOC 323. SEMINAR IN THE SOCIOLOGY OF MENTAL HEALTH AND ILLNESS. *Three hours credit.*

A study of the history of mental health and illness in America. Following study of the history, the student will focus on what we mean by mental health and illness, current conceptions related to social psychiatry and the role of the social scientist. Problems related to the school system and disturbed children will be discussed at some length.

SOC 331. SEMINAR IN SOCIAL COMMUNICATION. *Three hours credit.*

An explorative, yet penetrating, overview of theories, substantive problems and methods in interpersonal and public communication. Emphasis is placed on processes of communication common to animal behavior, human interpersonal relations, mass communication, and machine behavior.

SOC 371. SEMINAR IN ADVANCED SOCIAL RESEARCH. *Four hours credit.*

The course will include an examination of the scientific method, as it applies to sociology, advanced research designs and techniques used in sociological research, developing and testing of hypotheses, and basic statistical tools used in research.

SPANISH

SPAN 200. PROBLEMS IN ORAL SPANISH. *Three hours credit.*

Prerequisite, two years of college Spanish beyond first year, or permission of instructor. A course designed to provide advanced oral training; to help students with persistent individual problems in spoken Spanish to overcome those difficulties.

SPAN 210. SPANISH CIVILIZATION. *Three hours credit.*

Prerequisite, two years of college Spanish. A course designed to acquaint the student with general trends of Spanish Civilization and Culture, including the historical, economic, political and artistic development of the country from pre-historic times to present.

SPAN 220. CERVANTES. *Four hours credit.*

Prerequisite, two years of college Spanish. The life and works of Miguel de Cervantes Saavedra, how he portrays the Spain of his day, and how his works mark the various stages in his career. The class will be conducted in Spanish.

SPAN 290. SPANISH FOR GRADUATE STUDENTS. *No credit.*

Prerequisite, none. A course to enable doctoral candidates in other fields to pass the Ph.D. language reading examination in Spanish.

SPECIAL EDUCATION

SPED 201. WORKSHOP IN SPECIAL EDUCATION. *One to six hours credit.*

A workshop designed for teachers and administrators. This course is designed to facilitate specific disability areas and will be so designated with each workshop offered. The content will include current issues, problems, programs, and topics of national and local interest.

SPED 202. COUNSELING PARENTS OF EXCEPTIONAL CHILDREN. *Three hours credit.*

This course is designed to present the techniques of working with parents of exceptional children. How to interpret a handicapped child to parents and how the parents and family can accept the children in the home is also developed.

SPED 210. INTRODUCTION TO MENTAL RETARDATION. *Four hours credit.*

Prerequisite, SPED 10 or 300. A study of the social, emotional, physical, and mental characteristics of the mentally retarded child. Methods of classifying, diagnosing and treating retarded children will be discussed from medical, psychological, sociological, and educational points of view.

SPED 211. EDUCATION OF SEVERELY MENTALLY RETARDED CHILDREN. *Three hours credit.*

Organization of special class and school programs for severely mentally retarded children. Diagnosis and classification. Development of teaching materials and techniques. Community organizations and parent education.

SPED 212. CURRICULUM DEVELOPMENT AND METHODOLOGY FOR MENTALLY RETARDED: ELEMENTARY LEVEL. *Four hours credit.*

Prerequisites, SPED 10 or 300, 210. This course will have as its main purpose the development of integrated experience-units for primary, intermediate, and pre-vocational mentally retarded children. Experience-centered units will be built around the following three areas: occupational, economic, and social. The course will consist of reading, lectures, observation, experimentation and meetings.

SPED 213. CURRICULUM DEVELOPMENT AND METHODOLOGY FOR THE MENTALLY RETARDED: SECONDARY LEVEL. *Four hours credit.*

Prerequisites, SPED 10 or 300, 210. Emphasis is placed on the content, methods and materials appropriate for teaching junior and senior high school classes for mentally retarded youngsters.

SPED 220. INTRODUCTION TO THE EDUCATION OF SOCIALLY AND EMOTIONALLY DISTURBED CHILDREN. *Three hours credit.*

An introduction to concepts, practices, and trends in education for emotionally disturbed and socially maladjusted children, an orientation to the dynamics, personality characteristics and needs of emotionally handicapped and socially maladjusted children is provided.

SPED 230. CARE AND PATHOLOGY OF THE PHYSICALLY HANDICAPPED. *Three hours credit.*

Prerequisite, SPED 10 or 300. A course designed for teachers of physically handicapped children. Problems will be discussed in the following areas: vision, hearing, speech, orthopedics, epileptics and miscellaneous. Observation hours are required.

SPED 231. PROBLEMS OF TEACHING THE PHYSICALLY HANDICAPPED. *Three hours credit.*

Methods of teaching physically handicapped children; evaluation of techniques and teaching procedures with the various types of physically handicapped children; study of available material, curriculum planning, and aids used in the education of the physically handicapped child.

SPED 240. SURVEY OF EDUCATION OF THE VISUALLY HANDICAPPED. *Three hours credit.*

Educational, social and emotional implications of visual disability. Overview of history, and current practices in educational and rehabilitation planning. Organization and implications of various education services—pre-school through college. A review of private and public agencies, their philosophies, and programs.

SPED 242. PRINCIPLES OF EDUCATION OF THE PARTIALLY SEEING.
Three hours credit.

Identification, classification, and methods of program organization; principles of preparation, selection, effective use of instructional materials for children with limited vision. Adaptation of the school environment considered. Observation, discussion, and administration of the Snellen Vision Screening test presented.

SPED 243. BEGINNING BRAILLE. *Three hours credit.*

History of development of braille and other systems of reading used by the blind. Mastery of literary braille code development and use of special materials; slate and stylus techniques presented; introduction to Nemeth Code of Mathematics.

SPED 244. ELEMENTARY METHODS FOR THE BLIND. *Three hours credit.*

Special instructional techniques in teaching reading through braille; use of audio and dimensional aids; current practices in arithmetic, language, arts, music, physical education, efficient living skills; orientation and mobility foundations. Materials preparation, adaptation of commercial devices emphasized.

SPED 245. SECONDARY METHODS FOR THE BLIND. *Three hours credit.*

Curriculum, adaptations and special methods; problems of adjustment and expansion of the operational environment. Use of guidance, counseling and vocational rehabilitation agency services in life planning for the senior high school blind student. Pre-adult and adult special services. Review of special legislation and typical services available to the young blind adult.

SPED 250. PATHOLOGY AND INTRODUCTION TO EDUCATION OF THE DEAF AND HARD OF HEARING. *Three hours credit.*

History and philosophy of education of the deaf. Structure of the ear and causes. Problems in organization, support, and maintenance of programs for deaf and hard-of-hearing children. Presentation of types of instruction given in various schools, the oral method, the combined method, the Rochester method, and the acoustic method.

SPED 251. SPEECH DEVELOPMENT FOR THE DEAF AND HARD OF HEARING. *Maximum of six hours credit.*

Presentation of various methods commonly used in speech development of intelligible speech. Integration of speech with other language arts. Importance of pre-school programs and parent education.

SPED 252. LANGUAGE DEVELOPMENT FOR THE DEAF AND HARD OF HEARING. *Maximum of six hours credit.*

Development of language comprehension through speech-reading and reading. Systems of teaching language to the deaf. Principles of grammar essential to the use of any system of language instruction. Development of functional language usage in both oral and written forms. The meaning and importance of an integrated language arts program.

SPED 253. METHODS OF TEACHING CONTENT SUBJECTS TO THE DEAF AND HARD OF HEARING. *Three hours credit.*

Prerequisite SPED 250. The use of the communication skills as applied in all content subject areas will be explored. Special techniques, developmental as well as corrective, will be demonstrated. Wherever possible, special multi-media approaches will be used.

SPED 254. METHODS OF TEACHING READING TO THE DEAF AND HARD OF HEARING. *Three hours credit.*

Prerequisite SPED 250. Relationships between expressive and receptive communication skills will be basic premises. Development of techniques for teaching reading readiness skills, reading skills, and remedial reading skills for hearing impaired children will be used. All reading skills will be directed toward making the hearing impaired child an independent reader.

SPED 256. EDUCATION OF HARD-OF-HEARING CHILD. *Three hours credit.*

Sociologic, psychologic and economic implications of hearing loss. Survey of public school program of hearing conservation. Methods and practice of hearing therapy including lip-reading, auditory training, and speech improvement. Presentation of typical lesson plans at various levels and collection of source materials. Mechanics and use of hearing aids and other amplifying devices.

SPED 257. SPEECH READING. *Three hours credit.*

Speech reading theory and practice. Some educational problems of the speech reading teacher. Methods used for the instruction of children and adults. Correlation with auditory training, reading, and speech correction. Different approaches used with hard-of-hearing children and the deaf.

SPED 258. AUDITORY TRAINING AND HEARING AIDS. *Two hours credit.*

Emphasis is placed on methods of developing auditory discrimination in hearing impaired children through various techniques aimed to support the speech development program; in addition, a study of individual and group amplification instruments for utilizing all residual hearing will be undertaken.

SPED 259. UNDERGRADUATE SEMINAR IN EDUCATION OF THE DEAF AND HARD OF HEARING. *Three hours credit.*

The course is designed to recapitulate problems encountered in the student field experience. Discussions will be centered around the language and speech problems of the hearing impaired child, and upon the student teacher and the classroom dynamics.

SPED 260. PUBLIC SCHOOL SPEECH PATHOLOGY. *Three hours credit.*

Prerequisite: SPED 164 or consent of instructor. The study of organizational procedures, use of clinical materials, and administrative policies relevant to speech correction programs in public school settings.

SPED 263. NEUROLOGICAL BASIS FOR SPEECH AND HEARING. *Three hours credit.*

Anatomy and physiology of the nervous systems controlling the speech and hearing mechanisms, together with theories of control.

SPED 264. CLINICAL PRACTICES IN SPEECH PATHOLOGY. *Maximum of six hours credit with two credit hours earned per quarter.*

Prerequisite: SPED 164 or consent of instructor. Observation and performance of supervised diagnosis and therapy.

SPED 267. DIAGNOSIS IN SPEECH PATHOLOGY. *Three hours credit.*

Prerequisite: SPED 164. Study of techniques of clinical diagnosis and evaluation of persons with speech and language disorders.

SPED 268. SPEECH AND LANGUAGE DEVELOPMENT FOR MENTALLY RETARDED. *Three hours credit.*

Prerequisite: SPED 64. Study of relationship of speech and language to mental retardation. Diagnosis and therapeutic measures used in the development of speech and language for the mentally retarded.

SPED 270. BASIC AUDIOLOGY. *Three hours credit.*

Measurement of hearing with pure tone techniques and interpretation of test results in terms of physical, social, and educational handicap.

SPED 271. SPEECH AUDIOMETRY. *Three hours credit.*

Prerequisite: SPED 270. Materials and techniques employed in standard speech audiometry and hearing aid evaluations.

SPED 272. ADVANCED AUDIOMETRY. *Three hours credit.*

Prerequisite: SPED 270. Theory and practice of advanced pure tone and speech testing. A consideration of the instrumentation necessary for such testing, the interpretation of audiometric findings with special emphasis on the effects of hearing loss on communication.

SPED 273. THE AUDITORY MECHANISM. *Three hours credit.*

Detailed study of the human ear, the processes of audition, and the abnormalities and diseases of the hearing mechanism.

SPED 274. CLINICAL PRACTICES IN AUDIOLOGY. *Maximum of six hours credit; with two credit hours earned per quarter.*

Prerequisite: SPED 272 or consent of instructor. Observation and performance of supervised diagnosis and treatment.

SPED 275. AUDITORY DISORDERS IN CHILDREN. *Three hours credit.*

Identification audiometry and differential diagnosis of children with suspected auditory disorders.

SPED 280. EDUCATION OF CHILDREN WITH SPECIAL ABILITIES. *Three hours credit.*

Basic organization of programs for the education of the gifted child; classification and testing; curriculum adjustments and principles of teaching the gifted; exploring creative activities; guidance and evaluation of student programs.

SPED 290. INTRODUCTION TO VOCATIONAL REHABILITATION COUNSELING. *Three hours credit.*

An orientation to the rehabilitation process including a survey of history, principles, philosophy and legal aspects of rehabilitation and related fields. Rehabilitation as a concept of integrated service is stressed and an understanding of the objectives and the organizational basis of rehabilitation programs is provided.

SPED 298. COMMUNITY RESOURCES FOR REHABILITATION, GUIDANCE AND COUNSELING. *Three hours credit.*

Designed to acquaint the student with an understanding of the need for community resources. Provides the student with techniques for evaluating the effectiveness of available resources, and the knowledge and skills required to develop community resources needed for the implementation of rehabilitation, guidance and counseling services.

SPED 300. EDUCATION AND PSYCHOLOGY OF EXCEPTIONAL CHILDREN. *Three hours credit.*

A survey of the characteristics and educational needs of impaired and gifted children. Designed as an overview of the field for graduate students in special education, general education, psychology and other related fields.

SPED 301. ADMINISTRATION AND SUPERVISION OF SPECIAL EDUCATION. *Three hours credit.*

Problems of organization, administration and supervision of special education programs; finance and attendance, physical facilities, budgeting, needed equipment, community agencies and curriculum development.

SPED 302. APPRAISAL OF EXCEPTIONAL CHILDREN. *Four hours credit.*

Prerequisites, SPED 104 or 304. A critical examination of objective tests used to appraise the intellectual abilities of exceptional children.

SPED 303. PRACTICUM IN APPRAISING EXCEPTIONAL CHILDREN. *Three hours credit.*

Prerequisite, SPED 302. Provides supervised practice in administering specialized tests to children who are visually handicapped, acoustically handicapped, cerebral palsied, speech impaired, or mentally retarded.

SPED 304. PRINCIPLES AND PRACTICES OF MEASUREMENT OF THE HANDICAPPED. *Three hours credit.*

This course is designed to develop an understanding of and the ability to interpret the results of psychological and educational tests. Emphasis on diagnosis and problems encountered in testing children and adults who are visually, acoustically, orthopedically, mentally handicapped or speech impaired.

SPED 311. VOCATIONAL REHABILITATION OF MENTALLY RETARDED YOUTH. *Three hours credit.*

Prerequisite, SPED 10 or 300. Emphasis will be on discussing techniques in the following areas: (1) evaluating vocational fitness, (2) job placement, (3) working with related disciplines, (4) understanding of the implications of vocational experiences on curriculum, (5) on-the-job supervision, and (6) follow-up services.

SPED 312. ADVANCED CURRICULUM DEVELOPMENT. *Four hours credit.*

Prerequisite, SPED 212. This course will develop the application of the principles of preparation, development, and effective use of integrated units. Evaluation and reporting in terms of achievement of the curriculum objectives will also be emphasized.

SPED 314. PRACTICUM WITH THE MENTALLY RETARDED. *Maximum of fifteen hours credit.*

Prerequisites, SPED 10 or 300, 210, 212. Individual observation and supervised practice in the education of the mentally handicapped.

SPED 321. METHODS OF TEACHING CLASSES OF SOCIALLY AND EMOTIONALLY MALADJUSTED CHILDREN. *Three hours credit.*

The role of the special teacher in the development of an hygienic educational atmosphere and an adequate corrective program for socially maladjusted and emotionally disturbed children is stressed.

SPED 322. SOCIOLOGICAL AND CULTURAL ASPECTS OF SOCIALLY AND EMOTIONALLY DISTURBED CHILDREN. *Three hours credit.*

A study of the sociological and cultural problems related to social and emotional maladjustment. Major emphasis will be placed on research findings related to such areas as etiology, community and institutional care and treatment, pertinent current issues, and review of special legislation and typical community services.

SPED 323. SEMINAR IN EDUCATION OF EMOTIONALLY DISTURBED. *Three hours credit.*

Prerequisites, SPED 10 or 300, 220, 321, 322. Composite of shared experiences in course work and practicum in education of emotionally disturbed. Emphasis on critical appraisal of programming, methodology, and instructional techniques with emotionally disturbed; development of communication skills in consultation with professions of psychiatry, psychology, social work and others as a team approach.

SPED 324. PRACTICUM WITH THE SOCIALLY AND EMOTIONALLY DISTURBED. *Maximum of fifteen hours credit.*

Prerequisites, SPED 10 or 300, 220, 321. Individual observation and supervised practice in the education of the socially and emotionally disturbed.

SPED 331. ADVANCED PROBLEMS IN TEACHING THE CEREBRAL PALSID. *Three hours credit.*

Consideration of problems of child guidance, working with parents of cerebral palsied children and specific techniques helpful in education and training of cerebral palsied children. Emphasis upon teamwork approach to solving medical, educational, and therapeutic problems.

SPED 334. PRACTICUM WITH PHYSICALLY HANDICAPPED. *Maximum of fifteen hours credit.*

Prerequisites, SPED 10 or 300, 230. Individual observation and supervised practice in the education of the physically handicapped.

SPED 340. STRUCTURE AND FUNCTION OF THE EYE. *Three hours credit.*

An ophthalmologist presents the anatomy and physiology of the eye and the medical eye examination. An educator presents functional implications of various

pathologies in the educational setting. Educational interpretation of the medical eye report.

SPED 343. ADVANCED BRAILLE. *Three hours credit.*

Intensive study of Nemeth Code, including material for algebra, calculus, trigonometry, and other advanced mathematics notation. Principles of transcription; editing and adaptation of print material for the braille reader. Sources of embossed material considered; a review of the volunteer movement. Overview of the music code; review of chemical notation.

SPED 344. PRACTICUM WITH VISUALLY HANDICAPPED. *Maximum of fifteen hours credit.*

Supervised teaching experience with both blind and partially seeing children; placement evaluations; preparation of materials. Observation of varied programs, including resource room and residential school plans, rehabilitation agencies.

SPED 345. PRINCIPLES OF ORIENTATION AND MOBILITY FOR THE BLIND. *Three hours credit.*

Independence in exploration of the environment as a life need. Technique in developing orientation skills; pre-cane mobility instruction. Philosophy and history of cane instruction, guide dogs, and other methods of travel. Current programs review. Observation of special orientors working with children. Students will gain experience in traveling independently with cane.

SPED 346. THE MULTI-IMPAIRED BLIND CHILD. *Three hours credit.*

A course designed to study characteristics, learning problems, curricular adjustments, and program techniques of blind children with additional disabilities, including cerebral palsied blind, mentally retarded blind, and children with brain damage.

SPED 350. ADVANCED PROBLEMS IN TEACHING DEAF CHILDREN AND HARD OF HEARING. *Three hours credit.*

Prerequisites, SPED 251, 252, 253. Preparation of units of work in content subject areas. Expansion of vocabulary and language comprehension and usage. Curriculum planning. An opportunity will be given experienced teachers to work on specific problems.

SPED 351. ADVANCED PROBLEMS IN SPEECH FOR DEAF AND HARD OF HEARING. *Three hours credit.*

Problems in developing more nearly normal speech in deaf children; accent will be placed on rate, rhythm, nuance, and emphasis. Actual practice with hearing impaired children will be included. Technological approaches in diagnosis and correction of speech sounds will also be included.

SPED 352. LINGUISTIC APPROACH TO LANGUAGE FOR THE DEAF AND HARD OF HEARING. *Three hours credit.*

The course is intended to explore some of the more advanced language problems with the hearing impaired, linguistic theories as applied to the hearing impaired, and current approaches towards analysis and remediation of the language of the hearing impaired.

SPED 354. PRACTICUM WITH THE DEAF AND HARD OF HEARING. *Maximum of fifteen hours credit.*

Individual observation and supervised practice in the education of the deaf and hard of hearing. It is recommended that this course be taken over two consecutive quarters.

SPED 359. SEMINAR IN EDUCATION OF THE DEAF AND HARD OF HEARING. *Three hours credit.*

Open discussion of problems encountered by the M.A. candidate in working with hearing impaired children. The course will be structured each session by the needs of the candidate.

SPED 360. CEREBRAL PALSY. *Three hours credit.*

Prerequisite: SPED 263 and 264 or consent of instructor. Causation, diagnosis and treatment of speech disorders resulting from cerebral palsy.

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SPED 361. CLEFT PALATE. *Three hours credit.*

Prerequisite: SPED 264 or consent of instructor. Causation, diagnosis and treatment of individuals with speech disorders arising from oro-facial deformities.

SPED 362. APHASIA. *Three hours credit.*

Prerequisites: SPED 263 and 264 or consent of instructor. Causation, diagnosis and therapy for aphasia adults.

SPED 363. LANGUAGE DISORDERS OF CHILDREN. *Three hours credit.*

Prerequisite: SPED 263 and 264 or consent of instructor. Causation, diagnosis and speech therapy for children with symbolic disorders.

SPED 364. PRACTICUM IN SPEECH PATHOLOGY. *Maximum fifteen hours credit.*

Prerequisite: Fifteen graduate hours in Speech Pathology and Audiology and consent of adviser. Supervised clinical experience in diagnosis and therapy with speech defective and auditorily handicapped individuals.

SPED 365. STUTTERING II. *Three hours credit.*

Prerequisite, SPED 264 or consent of instructor. Study and evaluation of major theories, therapies, and current research on stuttering, with special emphasis on the adult stutterer.

SPED 366. COMMUNITY REHABILITATION RESOURCES IN SPEECH PATHOLOGY AND AUDIOLOGY. *Three hours credit.*

Prerequisite, 12 graduate hours in speech pathology or consent of instructor. Demonstrations, lectures, site visits concerning sensory, motor structural, vocational, economic and psychological problems affecting individuals with speech and hearing difficulties. Instruction provided by medical and non-medical specialists.

SPED 367. SEMINAR IN SPEECH AND HEARING SCIENCE. *Three hours credit.*

Advanced study of selected topics in speech and hearing science.

SPED 368. SEMINAR IN SPEECH PATHOLOGY. *Three to six hours credit.*

Prerequisite, 12 quarter hours of graduate work in speech pathology or consent of instructor. Emphasis on current problems in speech pathology. May be repeated for credit.

SPED 369. VOICE DISORDERS II. *Three hours credit.*

Prerequisite, SPED 264 or consent of instructor. Causation, diagnosis and treatment of voice disorders with emphasis on those disorders occurring primarily in adults.

SPED 370. SEMINAR IN CLINICAL EXPERIENCES. *Three hours credit.*

Prerequisite: SPED 364 or consent of instructor. A consideration of problems that have arisen as a result of the student's clinical experiences, particularly in the public school setting.

SPED 371. ARTICULATION DISORDERS II. *Three hours credit.*

Prerequisite: SPED 264 or consent of instructor. Theoretical postulates and research support for the traditional phonetic placement and sound stimulus approaches to remediation. Theoretical and practical implications of new and less traditional approaches also considered.

SPED 372. SPEECH CORRECTION AND IMPROVEMENT IN THE CLASSROOM. *Three hours credit.*

Basic information for classroom teachers pertinent to their planning and carrying out programs of speech improvement in their classrooms. Not open to speech pathology majors.

SPED 373. SPEECH AUDIOMETRY II. *Three hours credit.*

Prerequisite, SPED 272 or permission of instructor. An in depth study of the construction, use, and interpretation of both standard and sensilized speech audiometric tests. Special emphasis on tests which may reveal central auditory lesions.

SPED 374. PRACTICUM IN AUDIOLOGY. *Maximum fifteen hours credit.*

Prerequisite, 15 graduate hours in Audiology and Speech Pathology or consent of adviser. Supervised clinical experience in diagnosis and therapy with auditorily handicapped individuals.

SPED 375. DIFFERENTIAL DIAGNOSIS OF AUDITORY PROBLEMS.

Three hours credit.

Prerequisite: SPED 272 or permission of instructor. Emphasis on test batteries which may differentiate between cochlear and retrocochlear lesions and those which may differentiate between functional and organic auditory problems.

SPED 376. ELECTROPHYSIOLOGICAL AUDIOMETRY. *Three hours credit.*

Prerequisite, SPED 272 or permission of instructor. Electrophysiological techniques for measurement of hearing sensitivity. Emphasis on EER, ENR, EDR, and electro-acoustic and acoustic measurements of middle ear impedance.

SPED 377. PSYCHOACOUSTICS. *Four hours credit.*

Prerequisite, permission of instructor. Application of standard psychophysical techniques and the theory of signal detection to audiological research.

SPED 378. BIOACOUSTICS. *Four hours credit.*

Prerequisite, permission of instructor. The ear as a transducer and analyzer. Consideration of electrophysiological and mechanical properties of the ear.

SPED 379. SEMINAR IN AUDIOLOGY. *Three to six hours credit.*

Prerequisite, permission of instructor. Study of selected topics in audiology. May be repeated for credit.

SPED 390. COUNSELING THE HANDICAPPED. *Three hours credit.*

A study of counseling and counseling theories as applied to the handicapped population. An analysis of these theories and how these theories are utilized in the counseling interview is discussed and practiced. Often the rehabilitation counselor's task is one of coordinating the efforts of the team members and bringing together the resources of community agencies which may contribute to the total rehabilitation of an individual.

SPED 391. PRINCIPLES AND TECHNIQUES OF REHABILITATION COUNSELING (Meets six hours per week). *Three hours credit.*

Prerequisite, SPED 390. Qualified students majoring in Rehabilitation Counseling engage in counseling interviews and activities in a rehabilitation setting, with rehabilitation clients, under the supervision of one or more members of the College Staff and Agency Staff members. A report analyzing this field experience will be prepared by the student and submitted to the instructor for approval and filing.

SPED 392. VOCATIONAL PLACEMENT AND ADJUSTMENT OF THE DISABLED IN REHABILITATION. *Three hours credit.*

Consideration of such basic areas of knowledge as theories of vocational choice, labor market analysis, job analysis, and the psychology and sociology of work as they relate to the vocational placement problems presented by disabled persons. Analysis of job placement and training facilities and ability to relate these through vocational guidance to client capacities and employer expectations.

SPED 393. SEMINAR IN REHABILITATION: REHABILITATION PLAN FORMULATION. *Three hours credit.*

This course introduces the student to the basic principles and techniques peculiar to the rehabilitation process and the purpose of rehabilitation plan. The student will learn the essential content of the client study process and the techniques in plan formulation and implementation.

SPED 394. SUPERVISED CLINICAL PRACTICE IN REHABILITATION COUNSELING. *Maximum of sixteen hours credit.*

This internship will include supervised practice in counseling, case studies, contacts with community social agencies and employers, as well as practicum in specific rehabilitation processes. The supervised clinical practice consists of a minimum of 400 clock hours of field work, lasting one full term of approximately 11 weeks.

SPED 395. PSYCHOLOGICAL ASPECTS OF DISABILITY. *Three hours credit.*

To develop a sensitive awareness of the handicapping nature of specific disabilities and the relationship between the disability and the psychological, social and vocational aspects of successful adjustment. Specific disability areas discussed will vary from year to year according to the needs and interests of each particular group of students.

SPED 396. SPECIAL PROBLEMS IN DIAGNOSIS AND EVALUATION OF THE HANDICAPPED. *Three hours credit.*

Prerequisites SPED 104 or 304. This course is designed to acquaint student with a variety of techniques of client appraisal, limitations imposed by standardized tests when making inferences about handicapped persons. Student will investigate methods of client appraisal unique to handicapped adults and develop skills in vocational diagnosis.

SPED 397. MEDICAL ASPECTS OF REHABILITATION. *Three hours credit.*

Medical implications for rehabilitation counselors including anatomy, physiology and pathology of human systems, physical reconstruction, restoration and adaptation. Special emphasis is placed on the social and occupational aspects of injuring, somatic and psychogenic disability and the acquiring of facility in basic medical terminology.

SPED 398. SEMINAR: INTRODUCTION TO EMPLOYMENT COUNSELING. *Three hours credit.*

An overview of the field of employment counseling beginning with the historical, legislative, and philosophical foundations of employment counseling and the contributions of related disciplines. Visitations to and observations of employment counseling programs are arranged.

SPED 399. PRINCIPLES OF EMPLOYMENT COUNSELING. *Three hours credit.*

An introduction to the role and function of the employment counselor—as a member of the counseling profession and as a counselor in a setting where economic and political answers are commonly proposed as solutions to psycho-social problems. The role of the counselor in helping the individual when major forces of society are against him is also considered.

SPED 401. RESEARCH SEMINAR IN SPECIAL EDUCATION AND REHABILITATION. *Three hours credit.*

An analysis of studies and research pertaining to the education of exceptional children. Procedures for conducting and reporting research. A survey of critical problems and trends in Special Education.

SPED 402. PROBLEMS SEMINAR IN SPECIAL EDUCATION. *Three hours credit.*

A course designed for leaders and resource personnel in Special Education. Emphasis will be placed on how to develop good leadership, the identification of major problem areas, the possible solutions of these problems, and evaluation of these solutions.

SPED 403. TRENDS IN SPECIAL EDUCATION. *Three hours credit.*

A course designed for the study of historical development of educational programs for exceptional children. A critical analysis of issues and trends in special education.

SPED 404. INTERNSHIP IN SPECIAL EDUCATION. *Maximum of fifteen hours credit.*

The internship is a supervised program of orientation, observation, and participation in one or more community agencies devoted to exceptional children. Specific experiences are planned to include administration, program development, and inter-agency relationships. The internship requires a minimum of 330 clock hours of field experience during one full quarter.

SPED 410. SOCIOLOGICAL AND EDUCATIONAL ASPECTS OF MENTAL RETARDATION. *Four hours credit.*

A study of the sociological and educational problems related to mental retardation. Major emphasis will be placed on research findings having to do with community and institutional care treatment, and education of the mentally retarded.

SPED 411. PSYCHOLOGICAL ASPECTS OF MENTAL RETARDATION. *Four hours credit.*

A study of the psychological aspects of mental retardation. Intellectual functioning, psychological theories and learning interrelationships are reviewed with their management and research implications emphasized.

SPED 412. MEDICAL ASPECTS OF MENTAL RETARDATION. *Four hours credit.*

Problems of central nervous system pathology, etiology and timing, and physiological consequences which relate to management and research are the focus for study.

SPED 430. SEMINAR IN CRIPPLED AND OTHER HEALTH IMPAIRED. *Three hours credit.*

This course is designed to augment other seminar courses available to doctoral students working in special education. The aim of the course is to make familiar specific aspects of importance to the future administrator, college teacher or researcher which may have an affect upon his future endeavors.

SPED 441. SEMINAR IN VISUALLY HANDICAPPED. *Three hours credit.*

A course designed to allow intensive inquiry into rapid changes in braille systems, techniques for reproduction, development, and distribution of educational materials, and application of low vision aids in the utilization of residual vision.

SPED 461. SEMINAR: LANGUAGE PROBLEMS. *Three hours credit.*

Prerequisites SPED 363. An investigation of the patterns of normal speech and language development with special focus on research findings. Emphasis is placed on severe communication disruption as a result of deafness, brain damage, mental retardation or emotional disturbance.

SPED 462. SEMINAR: COMMUNICATION BARRIERS. *Three hours credit.*

Prerequisites, SPED 368. An investigation of the factors of interpersonal significance in communication breakdown. The study considers the individual within the framework of a social situation communicating by all those processes by which individuals influence each other. The interpersonal aspects serve as a focus.

SPED 463. INTERNSHIP IN SPEECH DIAGNOSIS. *Three hours credit.*

Prerequisite, SPED 267. The student shall participate, under supervision, in the diagnostic program of the Speech and Hearing Clinic. This participation shall include all phases of diagnosis, evaluation of results, and disposition of the case. Opportunities to participate in diagnosis will be provided in additional facilities where appropriate.

SPED 464. INTERNSHIP IN COMMUNICATION BARRIERS. *Three hours credit.*

Prerequisite, SPED 462. An investigation of communication barriers in cases and groups undergoing therapy in the Speech and Hearing Clinic. Focus will be placed on those interpersonal and intrapersonal factors which limit successful communication, interfere with therapeutic processes, and inhibit normal integration.

SPED 490. SEMINAR IN REHABILITATION: PROFESSIONAL PROBLEMS. *Three hours credit.*

(Doctoral Students only) To provide the student with a thorough understanding of his responsibilities and duties as regards non-case work rehabilitation activities and to stimulate an awareness of the need for continuous professional growth and development. Research in rehabilitation, ethical problems and professional issues of current concern will be discussed.

SPED 491. SEMINAR: ADMINISTRATION AND SUPERVISION OF VOCATIONAL REHABILITATION PROGRAMS. *Three hours credit.*

This course is designed to acquaint the student with the basic principles and practices related to administration and supervision of vocational rehabilitation programs, both college training and state-federal agencies. Included will be such special areas as program development, grant preparation, and related areas.

SPED 494. ADVANCED PRACTICUM. *Maximum of eight hours credit.*

(Doctoral Students Only). This supervised clinical practice will constitute an integral portion of the total education and training program for doctoral students in rehabilitation counseling. This practicum will be structured in accordance with the specific philosophy, functions and clientele of the agency and the interest, background and capabilities of the individual student.

SPEECH COMMUNICATION-JOURNALISM

SP 208. INTRODUCTION TO TELEVISION PRODUCTION. *Four hours credit. (Two hours lecture, four hours laboratory.)*

This course includes a brief history of oral mass media, a survey in the laymen's terms of the technical phenomena involved, a comparison of television to other mass media, and a study of television programs and production techniques.

SP 212. DESCRIPTIVE LINGUISTICS. *Three hours credit.*

A critical examination of language theory, communications theory, and linguistic theories with particular emphasis on the basic linguistic elements of phonology, morphology, grammar and syntax.

SP 217. ADVANCED ORAL INTERPRETATION. *Four hours credit.*

Prerequisite, SP 117. The development of greater artistic skill in reading various forms of literature.

SP 218. THEORIES OF GROUP PROCESS. *Three hours credit.*

Prerequisite, SP 189. A systematic overview of current theory and knowledge of discussion as derived and synthesized from significant experimental investigation.

SP 219. SEMINAR IN THE DIRECTION OF FORENSICS. (ATE) *Two hours credit.*

A study of the principles, methods, and problems of directing a forensics program, particularly at the secondary school level.

SP 248. WORKSHOP IN SPEECH EDUCATION. (ATE) *Three hours credit.*

An opportunity to study cooperatively the problems involved in teaching speech. The area or areas to be covered in any one workshop will be determined by the interests and needs of the group or by previous announcement. These areas will include such matters as curriculum, class instructional projects, co-curricular speech activities, remedial techniques, development and use of instructional materials.

SP 252. BUSINESS AND PROFESSIONAL SPEAKING. *Four hours credit.*

Designed particularly to give school administrators instruction and practice in organizing and presenting speeches which they are called upon to make in connection with their professional positions.

SP 260. GENERAL SEMANTICS. *Four hours credit.*

An analysis of the factors in communication that lead to misunderstandings and conflict, with suggestions for improving communication.

SP 275. INTRODUCTION TO PHONETICS. *Three hours credit.*

The science of speech sounds with special application to the use of phonetics in speech instruction in elementary and secondary schools.

SP 280. AMERICAN PUBLIC ADDRESS (to 1890). *Three hours credit.*

An historical and critical study of representative American speakers and speeches of the period.

SP 281. AMERICAN PUBLIC ADDRESS (1890 to Present). *Three hours credit.*

An historical and critical study of representative American speakers and speeches of the period.

SP 285. THE RHETORIC OF SOCIAL PROTEST. *Three hours credit.*

An analytical and critical study of the rhetoric of social protest in America with special emphasis on racial agitation.

SP 290. PERSUASION. *Three hours credit.*

A study of advocacy with special emphasis on the techniques used in communication and the implications for the listener and reader.

SP 294. CRITICAL THINKING. *Three hours credit.*

A study of inductive and deductive reasoning with special emphasis on the fallacies in reasoning.

SP 341. TEACHING COLLEGE BASIC SPEECH. *Two hours credit.*

A course designed specifically for the graduate assistant assigned to teach Communications 3 classes. The entire basic speech program will be considered in terms of objectives, students, policies, attitudes, teaching techniques, course outlining, evaluation, and other related problems.

SP 350. CLASSICAL RHETORIC. *Three hours credit.*

An analytical review of major contributions of Greek and Roman rhetoricians from Corax to and including St. Augustine.

SP 351. MODERN RHETORIC. *Three hours credit.*

An analytical study of the development in modern persuasion theory.

SP 352. SEMINAR IN RHETORICAL CRITICISM. *Three hours credit.*

A course designed to give the graduate student an opportunity to apply the principles of rhetorical criticism to specific subjects. Attention will be given to classical as well as to modern methods of criticism.

SP 353. SPEECH EDUCATION SEMINAR. (ATE) *Four hours credit.*

A seminar study of speech education: history, practices and trends.

SP 355. COMMUNICATION THEORY. *Three hours credit.*

A study of the principles underlying general communication theory, information theory, and attitude theory, and an attempt to discover their relationship to rhetorical theory and criticism.

SP 360. SEMINAR IN GENERAL SEMANTICS. *Four hours credit.*

An analysis of language habits which lead to conflict, confusion, and prejudice, and the development of methods leading to greater accuracy and sanity in the use of language.

SP 370. THE PSYCHOLOGY OF SPEECH. *Four hours credit.*

A study of the nature and origin of speech; the relationship of speech to emotion, learning, meaning and thought; the development of speech in the child; speech and personality.

SP 375. PHONETICS. *Three hours credit.*

The study of the science of speech sounds on the graduate level with particular attention to experimental phonetics and its application to speech and reading.

SP 380. WORLD PUBLIC ADDRESS. *Four hours credit.*

An historical study of public addresses delivered by speakers of countries other than the United States.

STUDENT FIELD EXPERIENCES

SFE 220. SPECIAL EDUCATION STUDENT TEACHING: ELEMENTARY.

Nine to Eighteen hours credit. ATE.

Designed to allow students the opportunity to bridge the gap between theory and practice in the teaching of handicapped children on the elementary level. Opportunity is provided for the student to use special methods, materials and techniques and to progressively assume the responsibilities related to teaching. S-U final mark.

SFE 230. SPECIAL EDUCATION STUDENT TEACHING: SECONDARY.

Nine to Eighteen hours credit. ATE.

Designed to allow students the opportunity to bridge the gap between theory and practice in the teaching of handicapped children on the secondary level. Opportunity is provided for the students to use special methods, materials and techniques and to progressively assume the responsibilities related to teaching. S-U final mark.

SFE 240. PRESCHOOL STUDENT TEACHING. *Eighteen hours credit. ATE.*

Provides for the practical application, under supervision, of the principles of learning and the techniques of instruction in the classroom. S-U final mark. Specially designed for preschool level experiences in one full-day quarter.

SFE 250. ELEMENTARY STUDENT TEACHING. *Eighteen hours credit. ATE.*

Provides for the practical application, under supervision, of the principles of learning and the techniques of instruction in the elementary classroom. Experiences extend through one full-day quarter. S-U final mark.

SFE 251. HALF-DAY INTERNSHIP: ELEMENTARY. *Eighteen hours credit. (6 hours each for three consecutive quarters). ATE*

Half-day, all-year elementary internship. Salary, temporary certification, full-staff status. Available in Weld County only. Opportunity for continued employment on second salary step. In lieu of regular student teaching requirement. Prerequisites: EM 206 and SFE 180 (or equivalents). Apply before March 1. S-U final mark.

SFE 252. FULL-DAY INTERNSHIP: ELEMENTARY. *Eighteen hours credit. (6 hours each for three consecutive quarters). ATE.*

Prerequisites: EM 206 and SFE 180 (or equivalents). A full-day, full year teaching internship in an elementary classroom. Salaried, temporarily certified, full-staff status with opportunity for continued employment on second salary step. In lieu of regular student teaching requirement. Apply by March 1. Assignment possibilities: statewide. S-U final mark.

SFE 253. ADVANCED STUDENT TEACHING: ELEMENTARY. *Three to Eighteen hours credit. ATE.*

Opportunity for a student who has had student teaching, intern or provisional field experience to meet certification needs or to receive additional field experience upon SFE staff recommendation. Could be a partial term classroom experience during any of the four college quarters. Focuses on up-dating and refining classroom methods in the elementary classroom. S-U final mark.

SFE 260. SECONDARY STUDENT TEACHING. *Eighteen hours credit. ATE.*

Provides for the practical application, under supervision, of the principles of learning and the techniques of instruction in the secondary school classroom. Must be limited to the ATE and departmentally approved teaching subject area(s). Experiences extend through one full-day quarter. S-U final mark.

SFE 261. HALF-DAY INTERNSHIP: SECONDARY. *Eighteen hours credit.*
(6 hours each for three consecutive quarters). ATE.

Half-day, all-year secondary classroom teaching internship in approved teaching subject area(s) only. Salary, temporary certification, full-staff status. Available in Weld County only. Opportunity for continued employment on second salary step. In lieu of regular student teaching requirement. Pre-requisites: EM 206 and SFE 180 (or equivalents). Apply by March 1. S-U final mark.

SFE 262. FULL-DAY INTERNSHIP: SECONDARY. *Eighteen hours credit.*
(6 hours each for three consecutive quarters). ATE.

Prerequisites: EM 206 and SFE 180 (or equivalents). A full-day, full-year teaching internship in the secondary classroom in the approved subject area(s) only. Salaried, temporarily certified and full-staff status. Opportunity for continued employment on second salary step. In lieu of regular student teaching requirement. Apply by March 1. Assignment possibilities: statewide. S-U final mark.

SFE 263. ADVANCED STUDENT TEACHING: SECONDARY. *Three to Eighteen hours credit.* ATE

Designed to meet certification or recommended additional field experience needs of secondary students *after* regular student teaching, interning or actual provisional teaching experiences. Could be a partial term classroom experience during any of the four college quarters. S-U final mark.

SFE 301. STUDENT FIELD EXPERIENCES PRACTICUM. *One to four hours credit.*

Supervised, professional activities in Student Field Experiences culminating in a comprehensive written report. Open only by invitation to resident doctoral students.

SFE 322. INDEPENDENT STUDY IN STUDENT FIELD EXPERIENCES. *One to four hours credit.*

Independent study to continue in-depth research or application of topics presented in SFE graduate courses 350, 351, 352, 353, or to pilot projects in conjunction with Professional Field Experience doctorate.

SFE 350. SUPERVISION OF THE STUDENT FIELD EXPERIENCE. *Three hours credit.*

Seminar to aid in the development of individual supervisory guidelines. Focus is on classroom supervisory techniques for use with student teachers and interns. Of special interest to cooperating teachers and school administrators.

SFE 351. INNOVATIONS IN THE STUDENT FIELD EXPERIENCE. *Three hours credit.*

This seminar focuses on the survey, research and discussion of innovative field programs and of innovative supervisory techniques for the classroom guidance of student teachers, interns, and aides.

SFE 352. ROLE OF THE COLLEGE FIELD CONSULTANT. *Three hours credit.*

Focus is on the function of the college consultant on the campus and in the field. Attention is paid to his roles as: advisor, placement official, consultant, supervisor, area coordinator, school-college liaison officer, evaluator, public relations agent and program developer. Aim is to develop a personal, functional role structure through seminar procedures.

SFE 353. LEADERSHIP IN STUDENT FIELD EXPERIENCES. *Three hours credit.*

Seminar approach to the study of the role of program and administrative leader in the collegiate field experience department. Includes focus on public relations, campus departmental coordination, field organization, administrative details, program evaluation and development and in-service growth of staff.

THEATRE ARTS

THEA 206. TECHNIQUES OF PLAY DIRECTION. *Three hours credit. (Laboratory arranged.)*

Prerequisite: THEA 126, or permission of instructor. A production course in directing the one-act play for public performance. Particular attention will be given to planning and scheduling a theatrical production and handling the problems of the student actor.

THEA 210, 211, 212. SUMMER THEATRE WORKSHOP I, II, III. *Five hours credit each.*

Prerequisite: acceptance by the Theatre Arts staff. Workshop in techniques of acting and technical work as observed and practiced in the daily rehearsal periods of The Little Theatre of the Rockies. Students must spend six to eight hours per day in rehearsals, either as actors or technical assistants. Work in the Summer Theatre Workshop (THEA 210, 211, 212) may be used by Theatre Arts majors in lieu of THEA 113 or THEA 163 in the major sequences.

THEA 213. ADVANCED STAGING TECHNIQUES. *Four hours credit.*

Prerequisite: THEA 113 and THEA 165. The study and practice of the latest trends and developments in scenic design, staging methods, and techniques. Special attention is directed toward stage movement, care and maintenance of equipment, and materials. Emphasis is upon the stage mechanics and materials of the modern theatre.

THEA 214. STAGE LIGHTING. *Two hours credit. (One hour lecture, two hours laboratory.)*

An introduction to lighting theory and lighting design applicable to all staging practices.

THEA 215. THEATRE PRODUCTION. *Two hours credit. (Four hours laboratory.)*

A laboratory class in the production and presentation of theatre before live audiences. The emphasis in the course is on an unification of practical problems for all aspects of theatre production through four performances. Double period, two days a week.

THEA 216. SENIOR SEMINAR IN DRAMATIC PRODUCTION. *Two hours credit.*

Emphasis will be upon problems of major concern to the prospective teacher-director. Reports and discussion will focus on areas related to the teaching of theatre.

THEA 220. STAGE COSTUMING. *Four hours credit.*

Prerequisite: THEA 120, or permission of instructor. A study of costume design for the theatre. Emphasis is given to a survey of historical styles of costume used in the theatre from the primitive times to the present and to the principles of contemporary costume design procedures.

THEA 226. PRACTICUM IN PLAY DIRECTION. *Two hours credit. (One hour lecture, laboratory arranged.)*

Prerequisite: THEA 206, or equivalent. A practicum in advanced play directing which will give the student an opportunity to cast, rehearse, and direct one or more laboratory productions under the supervision of the theatre staff. Class hours must be arranged to correspond to a section of THEA 63.

THEA 230. HISTORY OF THE THEATRE I. *Three hours credit.*

A seminar study of European theatre and its developments from the beginnings until the end of the Middle Ages, including the primitive origins of theatre and the development of Oriental theatres.

THEA 231. HISTORY OF THE THEATRE II. *Three hours credit.*

A seminar study of European theatre and its development from the Italian Renaissance until the close of the 18th century.

THEA 232. HISTORY OF THE THEATRE III. *Three hours credit.*

A seminar study of American and European theatre and its development from the beginning of the 19th century to the present.

THEA 233. CHILDREN'S THEATRE PRODUCTION. *Three hours credit.*
(Laboratory arranged.)

Prerequisite: THEA 112, or permission of instructor. A basic production course in the methods and procedures of producing good theatre for children. Study of the literature in the field, technical problems, and the educational values of theatre for children will be emphasized.

THEA 261. SERIOUS STYLES OF ACTING. *Two hours credit.* (Four hours laboratory.)

Prerequisite: THEA 163, or equivalent. An advanced laboratory course in acting, concentrating on Greek tragedy, Elizabethan and Jacobean tragedy and history, the serious drama of the Spanish Renaissance, French neo-classic tragedy, 19th century Romantic drama, Ibsen, and Strindberg.

THEA 262. COMIC STYLES OF ACTING. *Two hours credit.* (Four hours laboratory.)

Prerequisite: THEA 163, or equivalent. An advanced laboratory course in acting, concentrating on Greek and Roman comedy, farce comedy in the medieval and renaissance periods, Commedia dell'Arte, Elizabethan and Jacobean comedy, French neo-classic comedy, English comedy of the Restoration and 18th century, and 19th century farce and comedy.

THEA 263. PROBLEMS IN ACTING CONVENTIONS. *Two hours credit.*
(Four hours laboratory.)

Prerequisite: THEA 163, or equivalent. An advanced laboratory course in acting, concentrating on stage dialects and the conventions needed to act such modern dramatic forms as naturalism, expressionism, impressionism, symbolism, "theatre of the absurd," "theatre of cruelty," happenings, and other modern experimental forms.

THEA 265. ADVANCED SCENE DESIGN. *Three hours credit.*

Prerequisite: THEA 113, THEA 165, or permission of instructor. A study of the techniques and problems of scenic design. The esthetic, as well as the practical, problems of the designer are presented. Settings, properties, costuming, lighting are practiced within the theatre laboratory.

THEA 270. READERS THEATRE. *Three hours credit.*

Prerequisite: SP 117, or permission of instructor. A course designed to acquaint the student with the principles and production techniques of Readers Theatre.

THEA 296. INDIVIDUAL PRACTICUM IN ADVANCED PLAY DIRECTION. *Four hours credit.*

An individual practicum in directing a full-length play. Two copies of a well-written paper, defending the purpose and success of the production, and one neat promptbook will be filed with the department, one copy of the paper with the practicum adviser. This course is open only to senior majors in play direction and qualified graduate students.

THEA 315. THEATRE PRODUCTION IN THE HIGH SCHOOL. (ATE or certification at the undergraduate level.). *Three hours credit.*

A basic production course for the English and/or speech teacher who is involved in the direction of high school plays.

THEA 316. SEMINAR IN THEATRE PRODUCTION. *Four hours credit.*

Prerequisites, THEA 206. An analysis of the practical problems in theatre production, acting techniques, and the technical phases of setting and lighting the stage.

THEA 330. SEMINAR IN THEATRE HISTORY: *Three hours credit.*

Prerequisites, THEA 230 ,231, 232. A study of theatres, actors, and acting from primitive times to the present. Emphasis is placed upon special research projects dealing with the theatre as a social and cultural institution.

THEA 333. ADVANCED CHILDREN'S THEATRE PRODUCTION. *Four hours credit.*

Prerequisite: THEA 112, 233, or permission of instructor. An advanced course in the practical problems of production in a theatre for children. Emphasis is placed on the educational possibilities of this type of theatre and practical experience is gained through work with community groups and with junior high school students.

ZOOLOGY**ZOO 210. ENTOMOLOGY.** *Five hours credit. (Three hours lecture, four hours laboratory.)*

Prerequisites, BIO 1, 3. The study of the principal orders of insects. Specimens are collected locally and prepared by the student for classification and study. The role of insects as vectors in transmission of diseases and some control measures are considered in the latter parts of the course.

ZOO 213. GENERAL PARASITOLOGY. *Five hours credit. (Three hours lecture, four hours laboratory.)*

Prerequisites, BIO 1, 3. A study of the symbiotic relationships of parasitism as exemplified by typical parasites of man, domesticated and wild animals. Life cycles, pathology, systematics, and host-parasite relationships are stressed.

ZOO 214. FAUNISTICS. *Five hours credit. (Three hours lecture, four hours laboratory.)*

Prerequisites, BIO 1, 3. An advanced taxonomy and ecological survey of the local fauna of Colorado with special emphasis on amphibians, reptiles, and mammals. This will include field trips, collection, and classification of the local fauna, and a study of the habits, habitats, and life histories of the local species under the ecological conditions that govern their distribution. Collecting permits are needed.

ZOO 219. ANIMAL ECOLOGY. *Five hours credit. (Two hours lecture, six hours laboratory.)*

Prerequisites, BIO 1, 2, 3. The principles governing animal relationship with their environment. Distribution, food supply, migratory movements, and territorial requirements will be emphasized. Field work required.

ZOO 221. MAMMALIAN PHYSIOLOGY I. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisites, BIO 1, 3, ZOO 112 or 226. CHEM 142 or 147 recommended. A detailed and comprehensive coverage of the major organ systems of the mammal. Major emphasis is placed on the integrative functions of the nervous and endocrine systems in the maintenance of homeostasis. This course is the first of a two-quarter sequence and includes a study of the body fluids, cardiovascular, respiratory and gastrointestinal systems.

ZOO 222. MAMMALIAN PHYSIOLOGY II. *Five hours credit. (Three hours lecture, six hours laboratory.)*

Prerequisite, ZOO 221. This course is a continuation of ZOO 221. The course includes consideration of digestion and absorption, intermediary metabolism, the excretory, muscular and nervous systems and the special senses. Major emphasis is placed on the integrative functions of the nervous and endocrine systems in the maintenance of homeostasis.

ZOO 225. COMPARATIVE MORPHOGENESIS OF THE VERTEBRATES I. *Four hours credit. (Three hours lecture, three hours laboratory.)*

Prerequisites, BIO 1, 2, 3. A study of the comparative developmental processes and fundamental principles of vertebrate embryology as they relate to the development and ultimate structure of the vertebrate organ systems. Developmental anatomy and adult morphology of the sharks through mammals are considered for laboratory study.

ZOO 226. COMPARATIVE MORPHOGENESIS OF THE VERTEBRATES II.

Four hours credit. (Three hours lecture, three hours laboratory.)

Prerequisites, BIO 1, 2, 3, ZOO 225. A study of the comparative developmental processes and fundamental principles of vertebrate embryology as they relate to the development and ultimate structure of the vertebrate organ systems. Developmental anatomy and adult morphology of the sharks through mammals are considered for laboratory study.

ZOO 311. ADVANCED INVERTEBRATE ZOOLOGY. *Five hours credit.*

(Three hours lecture, four hours laboratory.)

Prerequisites, BIO, 1, 3. A comparative study of the classification, anatomy, physiology and natural history of the invertebrates, exclusive of insects and most parasitic forms.

ZOO 318. VERTEBRATE HISTOLOGY. *Five hours credit. (Three hours*

lecture, six hours laboratory.)

Prerequisites, BIO 1, 3. An intensive study of normal tissues and organs of vertebrates, with emphasis on mammals.

ZOO 330. COMPARATIVE MAMMALIAN ANATOMY. *Five hours credit.*

(Four hours lecture, three hours laboratory.)

Prerequisites, BIO 1, 3, ZOO 225, 226. A detailed study of mammalian anatomy, stressing the function and adaptive significance of the organ systems. Each student will deliver one seminar on a specialized topic. The class will make two field trips to the Denver Museum of Natural History. Offered alternate summers.

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1969-1970

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Chairman, Department of Brass and Percussion*

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Associate Professor of Music

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On Leave Fall Quarter, 1969*

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JOHN E. BOTHELL, A.B., M.A., Colorado State College; Ed.D., George Peabody College for Teachers.

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Will retire September 30, 1970*

JACK ARTHUR BOWEN, A.B., Brigham Young University; B.S., Eastern Oregon College; M.A., Ph.D., University of Utah.

Assistant Professor of Special Education

JAMES K. BOWEN, B.S., M.S. in Ed., Kansas State Teachers College; Ed.D., University of Wyoming.

Assistant Professor of Psychology, Counseling and Guidance

D. HAROLD BOWMAN, B.S., McPherson College; M.Ed., Ed.D., Wayne State University.

Professor of Education; Chairman, Department of Educational Media
On Leave Summer Quarter, 1970

THOMAS E. BOYLE, A.B., University of Richmond; M.A., Ph.D., University of Illinois.

Associate Professor of English; Chairman, Department of English

BRUCE W. BRODERIUS, B.S., St. Cloud State College; M.A., George Washington University; Ed.D., Colorado State College.

Associate Professor of Education

WARREN R. BUSS, B.S., M.S., Brigham Young University; Ph.D., Iowa State University.

Assistant Professor of Botany

LONIS C. BUTLER, B.A., M.A., Colorado State College; Ed.D., New York University.

Professor of Physical Education
On Leave Summer Quarter, 1970

BENJAMIN F. BYERLY, B.S., Kansas State University; M.A., Ph.D., University of Illinois.

Associate Professor of History

SHIRLEY M. CARRIAR, B.Ed., Superior State College; M.A., University of Wisconsin; Ed.D., Colorado State College.

Professor of English

TIMOTHY D. CAVANAGH, B.A., M.A., Sacramento State College; Ph.D., Ohio State University.

Associate Professor of Mathematics

DONALD W. CHALOUPKA, B.S., University of Nebraska; M.A., Ed.D., Colorado State College.

Professor of Education

HARALD P. CHRISTENSEN, B.A., M.A., Ph.D., State University of Iowa.

Professor of Political Science

AMOS L. CLAYBAUGH, B.E., Wisconsin State College; M.S., University of Wisconsin; Ed.D., Colorado State College.

Professor of Elementary Education

SUSAN JEANNETTE CLEVINGER, A.B., Ball State Teachers College; A.M., San Francisco State College; Ed.D., Stanford University.

Professor of Psychology, Counseling and Guidance
On Leave Summer Quarter, 1970

HARRY EDMON COLLINS, A.B., M.A., Ed.S., Colorado State College.

Associate Professor of College Student Personnel Work

BRYAN E. M. COOKE, B.A., Aligarh Moslim University; M.S., Ph.D., University of Illinois.

Assistant Professor of Health Education; Acting Chairman, Department of Health and Safety

ROBERT E. COPLEY, B.M., Denver University; M.M., Ph.D., Michigan State University.

Assistant Professor of Music

FRANKLIN D. CORDELL, B.A., M.A., Ph.D., Michigan State University.

Assistant Professor of Education; Acting Chairman, Department of History and Philosophy of Education

ALFRED E. CORNEBISE, A.B., Wayland College; M.A., Texas Technological College; Ph.D., University of North Carolina.

Assistant Professor of History

RICHARD J. CRAWFORD, B.S., M.A., Southern Illinois University; Ph.D., University of Oklahoma.

Assistant Professor of Speech

GEORGE L. CROCKETT, B.S., Utah State University; M.S., Oregon State University; Ed.D., Utah State University.

Associate Professor of Science Education
On Leave Summer Quarter, 1970

NEAL M. CROSS, B.A., M.A., Colorado State College; Ed.D., Stanford University.

Professor of English
On Leave Summer Quarter, 1970

VINCENT A. CYPHERS, B.S., Pacific University; M.A., Ed.D., Colorado State College.

Professor of Physical Education

JOHN A. DAMGAARD, JR., B.A., Colorado College; M.B.A., University of Michigan; Ed.D., University of Utah.

Associate Professor of Business; Chairman, Department of Management and General Business

THELMA L. DAMGAARD, B.S., University of Minnesota; B.M., M.A., University of Wisconsin; Ed.D., Stanford University.

Associate Professor of Education

RAYMOND L. DEBOER, B.A., Augustana College; M.A., Ed.D., University of Denver.

Professor of Speech

DONALD GILMORE DECKER, B.S., Michigan State Normal; M.A., Colorado State College; Ph.D., Columbia University.

Professor of Science Education

DALE DYKINS, B.M., M.M., College of Music, Cincinnati.

*Professor of Music; Chairman
Department of Theory and
Composition*

GARTH M. ELDREDGE, B.A., M.A., Ph.D., University of Utah.

*Assistant Professor of Special
Education*

DONALD D. ELLIOTT, B.S. in Chem., B.S., in Bus., M.S., Ph.D., University of Colorado.

*Assistant Professor of Mathematics;
Chairman, Department of Mathe-
matics*

WILLIAM RENTZ ERWIN, B.S., M.S., North Texas State College; Ed.D., University of Houston.

Professor of Industrial Arts

KENNETH G. EVANS, B.A., M.A., Colorado State College; M.F.A., Ph.D., State University of Iowa.

Assistant Professor of Physics

MARGARET ELIZABETH EVERETT, B.S., University of Wisconsin; M.A., Ph.D., State University of Iowa.

*Professor of Physical Education;
Chairman, Department of Physical
Education for Women*

GEORGE E. FAY, B.A., University of Missouri; M.A., University of Michigan; Ph.D., Interamerican University.

Assistant Professor of Anthropology

EDGAR E. FIELDER, B.A., Northwestern State College; M.A., Phillips University; Ed.D., Colorado State College.

Assistant Professor of Education

CLARK LEROY FIELDS, B.A., Pasadena College; M.S., Ph.D., State University of Iowa.

Associate Professor of Chemistry

KENNETH W. FINDLEY, B.S., Manchester College; M.A., Ph.D., Ohio State University.

*Professor of Education
Will retire August 31, 1970*

FOREST N. FISCH, B.A., M.A., Colorado State College.

*Professor of Mathematics
On Leave Summer Quarter, 1970*

JOHN H. FLUKE, B.F.A., Carnegie Institute of Technology; M.Ed., Central Washington College of Education; Ed.D., Colorado State College.

*Associate Professor of Music; Chair-
man, Department of Music Education*

AUGUSTA MEREDITH FOX, B.S., M.Ed., Texas A&M University; Ed.D., North Texas State University.

*Associate Professor of Educational
Research*

CYNTHIA R. FREASE, B.A., University of Kansas; M.A., University of Minnesota; Ed.D., Colorado State College.

*Assistant Professor of English
On Leave Winter and Spring quar-
ters, 1970*

FORREST WILLARD FREASE, A.B., B.S., Kansas State Teachers College, Emporia; M.A., University of Kansas; Ph.D., University of Pennsylvania.

*Professor of English
On Leave Fall, Winter and Spring
Quarters, 1969-70*

SAM F. FREEMAN, B.A., Ph.D., University of Oklahoma.

Associate Professor of English

RICHARD KENT FRY, B.S., M.S., Ph.D., Kansas State University.

Associate Professor of Physics

JOHN D. FUELBERTH, A.B., Wayne State College; M.A., Ph.D., University of Nebraska.

Assistant Professor of Mathematics

JOHN BARTON FULBRIGHT, B.A., Adams State College; M.A., Ed.D., Colorado State College.

*Professor of Psychology,
Counseling and Guidance*

DON GARLICK, B.F.A., University of Oklahoma; M.M., D.M.A., University of Rochester.

*Professor of Music; Chairman,
Department of History and Literature*

BILL R. GEARHART, B.A., Friends University; M.Ed., Wichita State University; Ed.D., Colorado State College.

Associate Professor of Special Education

JOHN S. GIRAULT, B.A., University of Denver; M.A., Colorado State College; Ph.D., University of Denver.

Assistant Professor of Drama

NICHOLAS A. GLASER, B.A., B.Ed., Pacific Lutheran University; M.Ed., Ed.D., University of Oregon.

Associate Professor of Elementary Education

HARLEY F. GLIDDEN, B.S., Buena Vista College, Iowa; M.A., Iowa University; Ph.D., Nebraska University.

Professor of Science

RUPERT M. GOODBROD, B.F.A., University of Nebraska; M.S., Columbia University; M.A., Julliard School of Music.

Professor of Music; Chairman, Department of Piano and Organ

WALTER O. GREEN, B.A., M.A., Colorado State College.

Associate Professor of Art
Will retire August 31, 1970

ROBERT G. HAMMOND, B.Ed., Illinois State University; M.A., Colorado State College; Ed.D., University of Missouri.

Associate Professor of Industrial Arts; Chairman, Department of Industrial Arts

MARJORIE L. HARKNESS, B.S., University of Minnesota; M.A., Ed.D., Colorado State College.

Professor of Elementary Education

JOHN W. HARRISON, B.S., California Institute of Technology; M.A., University of Denver; Ph.D., University of Colorado.

Professor of English

WILLIAM F. HARTMAN, B.A., Nebraska State College, Chadron; M.A., Ed.D., Colorado State College.

Professor of Journalism

J. GILBERT HAUSE, B.A., M.A., Colorado State College; Ed.D., University of Colorado.

Professor of College Student Personnel Work

BEATRICE B. HEIMERL, B.A., St. Cloud State College; M.A., University of Minnesota; Ed.D., Colorado State College.

Assistant Professor of Research and Statistical Methodology; Chairman, Department of Research and Statistical Methodology

RAMON P. HEIMERL, B.S., B.Ed., St. Cloud State College; M.A., Ph.D., University of Minnesota.

Professor of Business

ROBERT L. HEINY, B.S., Colorado College; M.S., Ph.D., Colorado States University.

Assistant Professor of Mathematics

WILLIAM C. HEISS, B.S., University of Illinois; M.A., Columbia University.

Associate Professor of Health and Physical Education

MILDRED C. HILLESTAD, B.Ed., Wisconsin State College; M.Bus.Ed., University of Colorado; Ph.D., University of Minnesota.

Professor of Business

On Leave Fall Quarter, 1969

TYRUS HILLWAY, B.A., Willamette University; M.A., University of California; Ph.D., Yale University.

Professor of Higher Education

JOSEPH EDWARD HIMMEL, B.A., North Central College; M.M., Northwestern University.

Associate Professor of Music

KENNETH E. HOGAN, B.A., Ottawa University; M.A., Ed.D., Colorado State College.

Professor of Education; Chairman, Department of Higher Education

DONALD L. HOLLEY, B.Ed., Illinois State Normal; M.A., University of Illinois; Ed.D., Colorado State College.

Professor of Speech; Chairman, Department of Speech Communications and Journalism

DARRELL HOLMES, B.A., M.A., Ph.D., Ohio State University.

Professor of Education

SAMUEL R. HOUSTON, B.A., University of California at Los Angeles; M.A., California State College; M.S., University of Oregon; Ph.D., Colorado State College.

Assistant Professor of Research and Statistical Methodology

BERNICE E. HUNN, B.S., Kansas State Teachers College; M.A., Ed.D., Colorado State College.

Associate Professor of Elementary Education

RITA H. HUTCHERSON, B.A., Culver-Stockton College; M.A., Ph.D., State University of Iowa.

Professor of Music

QUAIN K. JAHRMAN, B.S., Dickinson State College; M.A., Colorado State College; Ed.D., University of Arkansas.

Professor of Educational Research

M. LYNN JAMES, B.S., M.S., Brigham Young University; Ph.D., University of Utah.

Assistant Professor of Chemistry
On Leave Summer Quarter, 1970

ROBERT S. JAMES, B.M.E., M.Mus., Northwestern University; Ed.D., Colorado State College.

Associate Professor of Music
On Leave Summer Quarter, 1970

ALEX JARDINE, B.A., M.A., Indiana State Teachers College; Ed.D., Teachers College, Columbia University.

Professor of Education
Will retire August 31, 1970

DAVID JELDEN, B.A., Nebraska State Teachers College; M.A., Colorado State College; Ed.D., University of Missouri.

Associate Professor of Industrial Arts

DANA F. JOHNSON, B.F.A., Ed.D., University of Kansas.

Assistant Professor of Fine Arts

F. MORRIS JOHNSON, B.A., M.A., Colorado State College; Ed.D., University of Denver.

Professor of Industrial Arts
On Leave Spring Quarter, 1970

DOROTHY CAMERON JONES, B.A., M.A., Wayne State University; Ph.D., Colorado University.

Assistant Professor of English

KEVIN C. KEARNS, B.S., Washington University; M.A., Ph.D., St. Louis University.

Assistant Professor of Geography;
Chairman, Department of Geography

LOUISE J. KELLER, B.S., Pittsburg State College; M.S., Kansas State Teachers College; Ed.D., Montana State University.

Associate Professor of Business and Education

EDWARD J. KELLY, B.A., Defiance College; M.A., Ph.D., State University of Iowa.

Professor of Elementary Education
On Leave Fall Quarter, 1969

CALVIN E. KENNEDY, B.S., Southeastern Oklahoma State College; M.S., Oklahoma State University; Ph.D., University of Nebraska.

Associate Professor of Business;
Chairman, Department of Accounting
On Leave Summer Quarter, 1970

LEROY R. KERNS, B.A., M.A., Colorado State College; Ed.D., University of Colorado.

Professor of Education

RALPH R. KING, B.A., M.A., Colorado State College; Ed.D., University of Denver.

Professor of Music

BERNARD C. KINNICK, B.A., St. John's University; M.A., University of North Dakota; Ed.D., Auburn University.

Assistant Professor of Psychology,
Counseling; Chairman, Department
of College Student Personnel Work

RAY B. KNAPP, A.B., Los Angeles State College; Ph.D., University of Southern California.

Assistant Professor of Political Science

WILLIAM GEORGE KOCH, B.S., University of Notre Dame; M.A., Montana State University; Ph.D., University of Illinois.

Professor of Chemistry

OLIVER PAUL KOLSTOE, A.B., State Teachers College, North Dakota; M.S., University of North Dakota; Ph.D., State University of Iowa.

Professor of Special Education
On Leave Summer Quarter, 1970

EUGENE DE VERE KOPLITZ, B.S., Wisconsin State College; M.S., Ph.D., University of Wisconsin.

Professor of Psychology,
Counseling and Guidance

KAREN R. KRUPAR, B.S., Northern State College; M.A., Ph.D., University of Denver.

Assistant Professor of Speech

FRANK P. LAKIN, B.A., M.A., Colorado State College; Ed.D., Oregon State University.

Professor of Psychology

ROBERT W. LARSON, B.A., M.A., University of Denver; Ph.D., University of New Mexico.

Professor of History
On Leave Summer Quarter, 1970

PAUL L. LEHRER, B.S., University of Cincinnati; M.A., Ohio State University; Ph.D., University of Nebraska.

Associate Professor of Geography

ALICE J. LEWIS, B.S., West Texas State College; M.A., Ph.D., University of Iowa.

Professor of Elementary Education
On Leave Fall Quarter, 1969

VIRGIL Y. LINDAHL, A.B., Wayne State Teachers College, Wayne; M.A., Colorado State College; P.E. Dir., Indiana University.

Professor of Physical Education;
Chairman, Department of Inter-collegiate Athletics

BETTY L. LOWRY, B.A., M.A., Colorado State College; Ph.D., University of Iowa.

Professor of Elementary Education

J. MAX LUBBERS, B.A., M.A., Colorado State College.

Associate Professor of Industrial Arts

ARNO H. LUKER, LL.B., B.S., University of South Dakota; M.A., Michigan State College, Ed.D., Colorado State College.

Professor of Psychology,
Counseling and Guidance;
Chairman, Department of Psychology, Counseling and Guidance?

On Leave Summer Quarter, 1970

DONALD M. LUKETICH, B.S.E., Arkansas State College; M.S., University of Illinois; Ed.D., Colorado State College.

Associate Professor of Education

DALE J. LUNDEEN, B.S., Western Michigan University; M.A., Indiana University; Ph.D., University of Minnesota.

Professor of Special Education

CAROL L. LUTEY, B.S., M.A., University of Minnesota; Ph.D., Michigan State University.

Professor of Psychology,
Counseling and Guidance
On Leave Fall Quarter, 1969

DANIEL C. MCALEES, B.A., Albright College; M.A., Ed.D., Ph.D., Michigan State University.

Associate Professor of Special Education

HAROLD L. MCKAIN, B.S., Central Missouri State College; M.E., University of Oklahoma; Ph.D., State University of Iowa.

Assistant Professor of Physical Education

DONALD F. MCPHERSON, B.S., Indiana University of Pennsylvania; M.A., University of Hawaii; Ph.D., Purdue University.

Associate Professor of Special Education

THERESA M. MALUMPHY, B.S., State College, Massachusetts; M.S., University of Wisconsin; Ph.D., Ohio State University.

Assistant Professor of Health and Physical Education

JOHN I. MARIANI, B.A., University of Nevada; B.F.A., Chicago Art Institute; M.A., Colorado State College.

Professor of Art; Chairman, Department of Fine Arts

MARCUS K. MEILAHN, B.S., Lakeland College; Ph.D., Arizona State University.

Assistant Professor of Chemistry

HOWARD M. MICKENS, B.S., Bowling Green State University; M.M., Northwestern University.

Associate Professor of Music; Chairman, Department of Strings

BARBARA H. MICKEY, B.A., M.A., Ph.D., Indiana University.

Associate Professor of Anthropology
On Leave Summer Quarter, 1970

JAMES E. MILLER, B.M., Michigan State College; M.A., Colorado State College; M.F.A., Ph.D., State University of Iowa.

Professor of Instrumental Music

ESTELL E. MOHR, B.S., Teachers College, Columbia; M.A., Colorado State College; Ed.D., Stanford University.

Professor of Public School Music
On Leave Fall Quarter, 1969
Will retire September 30, 1970

LOLA J. MONTGOMERY, B.A., University of Kansas; M.A., Colorado State College; Ed.D., Teachers College, Columbia.

Associate Professor of Psychology, Counseling and Guidance

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ROBERT A. MONTGOMERY, B.A., Pepperdine College; M.S., University of Southern California; Ed.D., Colorado State College.

Professor of Physical Education
On Leave Summer Quarter, 1970

GAYLORD D. MORRISON, B.A., Northwest Missouri State College; M.A., University of Nebraska; Ed.D., University of Missouri.

Professor of Education

ALVIN O. MOSBO, B.A., Luther College; M.A., State University of Iowa; Ed.D., Colorado State College.

Professor of Elementary Education;
Chairman, Department of
Elementary Education

DORIS E. MYERS, B.S.E., Arkansas State College; M.A., Ohio University; Ph.D., University of Nebraska.

Assistant Professor of English

GRACE D. NAPIER, B.A., Douglass College; M.A., New York University; Ed.D., Temple University.

Assistant Professor of Special
Education

LOUISE A. NEAL, B.A., Friends University, Kansas; M.A., University of Colorado; Ed.D., Colorado State College.

Professor of Elementary Education

DALE ALLEN NEBEL, B.A., M.A., Iowa State University; Ed.D., Colorado State College.

Associate Professor of Elementary
Education

THEODORE M. NELSON, B.S., M.A., Ph.D., University of Minnesota.

Associate Professor of Psychology

JOE NICHOLS, B.S., M.S., Pittsburg State College; Ed.D., University of Colorado.

Assistant Professor of Education;
Chairman, Department of Curriculum and Instruction

DWIGHT E. NOFZIGER, B.S., Bowling Green State University; M.A., Columbia University; Ed.D., Colorado State College.

Associate Professor of Music
On Leave Spring Quarter, 1970

DAVID O. OLSON, B.S., Northern Illinois Teachers College; M.A., Colorado State College; Ed.D., Texas A&M University.

Professor of Industrial Arts

KENNETH V. OLSON, B.A., Augsburg College; M.A., Ph.D., University of Minnesota.

Associate Professor of Science
Education
On Leave Summer Quarter, 1970

NORMAN T. OPPELT, B.S., Colorado State University; M.A., Colorado State College; Ph.D., Michigan State University.

Professor of Psychology

KAYE D. OWENS, B.A., Idaho State University; M.A., Ed.D., Colorado State College.

Associate Professor of
Special Education

ARTHUR R. PARTRIDGE, B.A., M.S., University of Kansas; Ed.D., Stanford University.

Professor of Education; Chairman,
Department of Educational
Administration
On Leave Summer Quarter, 1970

RICHARD A. PERCHLIK, B.S. in Bus.; B.S., in Ed., M.A., Ohio State University; Ph.D., University of Colorado.

Professor of Social Science; Chair-
man, Department of Political Science

D. ALLEN PHILLIPS, B.S., M.A., University of Idaho; Ed.D., University of Oregon.

Assistant Professor of Physical
Education

RONALD K. PLAKKE, B.A., Colorado State College; Ph.D., University of Montana.

Assistant Professor of Zoology

WILLIAM D. POPEJOY, B.S., M.A., Illinois State Normal University; Ed.D., Colorado State College.

Professor of Mathematics
On Leave Summer Quarter, 1970

STEPHEN T. POWERS, B.S., U.S. Naval Academy; M.A., Rice University; Ph.D., University of Notre Dame.

Assistant Professor of History

DAVID L. PRINGLE, B.S., Wayne State University; M.S., Ph.D., Iowa State University.

Assistant Professor of Chemistry

FRANCIS R. QUAMMEN, B.A., M.A., Colorado State College.

Associate Professor of Sociology

ELIZABETH J. RAVE, B.S., Illinois State University; M.A., University of Colorado; Ph.D., University of Southern California.

*Assistant Professor of Psychology,
Counseling and Guidance*

HENRY R. REINERT, B.S., Fort Hays State College; M.A., Ed.D., Colorado State College.

*Assistant Professor of Special
Education*

ARTHUR R. REYNOLDS, B.A., Nebraska State Teachers College; M.A., Ph.D., University of Minnesota.

Professor of History

ROYAL A. RICH, B.S., University of Nebraska; M.S., Ph.D., Utah State University.

*Associate Professor of Zoology
On Leave Summer Quarter, 1970*

ROBERT C. RICHARDSON, B.A., M.A., University of Michigan; Ph.D., University of Colorado.

Assistant Professor of Education

EMMETT A. RITTER, B.S., M.Ed., Ed.D., University of Oregon.

Assistant Professor of Education

DAVID H. ROAT, B.A., Albion College; M.A., Ph.D., Michigan State College.

Assistant Professor of Education

ANTHONY M. ROSSI, B.S., New York University; M.A., Colorado State College.

*Associate Professor of Physical
Education*

On Leave Summer Quarter, 1970

BARRY ROTHBAUS, B.A., Hunter College; M.S., Ph.D., University of Wisconsin.

*Assistant Professor of History;
Chairman, Department of History*

GEORGE H. SAGE, B.A., M.A., Colorado State College; Ed.D., University of California, Los Angeles.

*Associate Professor of Physical
Education; Chairman, Department
of Physical Education for Men*

ANNE W. SCHENKMAN, A.B., M.S., Ed.D., Indiana University.

*Assistant Professor of Psychology,
Counseling and Guidance*

WALTER A. SCHENKMAN, B.A., Harvard University; M.M., Yale Music School; Diplôme d'Études, Paris Conservatory; D.Mus., Indiana University.

Professor of Music

JOHN SCHMID, B.S., M.S., Ph.D., University of Wisconsin.

Professor of Education

DONALD L. SCHMIDT, B.A., Bethel College; M.S., Ph.D., Iowa State University.

Associate Professor of Mathematics

GERALD D. SCHMIDT, B.A., Colorado State College; M.S., Ph.D., Colorado State University.

*Associate Professor of Zoology
On Leave Winter Quarter, 1970*

CLAUDE M. SCHMITZ, B.A., M.A., Colorado State College.

*Associate Professor of Music;
Chairman, Department of Voice*

JAMES OTTO SCHRECK, B.A., University of St. Thomas; M.S., Ph.D., Texas A & M University.

Assistant Professor of Chemistry

DONALD EDWARD SEAGER, B.E., Geneseo State Teachers College; M.S., Syracuse University; Ed.D., Brigham Young University.

*Assistant Professor of
Educational Media*

JACK SHAW, B.A., University of Saskatchewan; B.E.A., M.Ed., University of Manitoba; Ph.D., University of Minnesota.

*Professor of College Student
Personnel Work*

JOHN MAX SHIRLEY, B.S., M.A., University of New Mexico; Ed.D., Colorado State College.

*Associate Professor of Recreation
Education; Chairman, Department
of Recreation*

JOSEPH L. SHOEMAKER, B.A., M.A., Colorado State College; Ed.D., University of Colorado.

*Professor of Science
On Leave Summer Quarter, 1970*

HOWARD M. SKINNER, B.A., Sterling College, Kansas; B.Mus., M.Mus., McPhail College of Music; D.Mus., Northwestern University.

Associate Professor of Music

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MAYNARD N. STAMPER, B.S., Eastern Kentucky State College; M.A., Colorado State College; Ph.D., Ohio State University.

Professor of Zoology

WENDELL R. STARR, B.A., Ottawa University; M.A., University of Colorado; Ph.D., University of Minnesota.

Professor of English

On Leave Summer Quarter, 1970

DORIS C. STEFFY, B.A., Iowa State Teachers College; M.A., University of Iowa.

Professor of Physical Education

On Leave Winter Quarter, 1970

JAMES A. STOFFLER, B.S., Southern Illinois University; M.A., Marquette University; Ph.D., Southern Illinois University.

Associate Professor of Education

JUNE E. STUCKEY, B.A., B.S., Wilmington College; Ph.D., Ohio State University.

Professor of Psychology

On Leave Fall, Winter, Spring and Summer Quarters, 1969-70

ROBERT B. SUND, B.A., Reed College; M.A., M.S., Oregon State College; Ed.D., Stanford University.

Professor of Science Education; Acting Chairman, Department of Science Education

STEVE TEGLOVIC, Jr., B.S.B.A., M.B.A., University of Denver; Ph.D., Colorado State College.

Associate Professor of Business

Chairman, Department of Administrative Services

BERT O. THOMAS, B.S., M.S., Colorado State University; Ph.D., University of Minnesota.

Professor of Zoology; Chairman, Department of Biological Science

GORDON E. TOMASI, B.A., M.A., Colorado State College; Ph.D., University of Louisville.

Associate Professor of Chemistry

JOSEPH L. TOWNSEND, B.M., M.Ed., Colorado State University; Ed.D., Colorado State College.

Assistant Professor of Special Education

ORVEL L. TRAINER, B.A., M.A., Ph.D., University of Colorado.

Professor of Economics; Chairman, Department of Economics

LESLIE W. TROWBRIDGE, B.S., Central State Teachers College, Wisconsin; M.S., University of Chicago; M.S., University of Wisconsin; Ph.D., University of Michigan.

Associate Professor of Science; Chairman, Department of Science Education

On Leave, Fall, Winter, and Spring Quarters, 1969-70

DEAN E. TURNER, B.A., Centro De Estudios Universitarios; M.Ed., Adams State College; Ph.D., University of Texas.

Assistant Professor of Education

JAMES S. UPTON, B.A., B.M., Hendrix College; M.M., Southern Methodist University; Ph.D., University of Texas.

Assistant Professor of Music

RICHARD H. USHER, B.S., Murray State College; M.Ed., Ed.D., University of Florida.

Associate Professor of Psychology, Counseling and Guidance

NANCY M. VAN ANNE, B.A., Iowa State Teachers College; M.A., State University of Iowa; Ph.D., University of Oregon.

Professor of Physical Education

EVERETT H. VAN MAANEN, B.S., Northern State Teachers College; M.A., Colorado State College; Ed.D., University of Oregon.

Professor of Education

On Leave Fall Quarter, 1969

TONY D. VAUGHAN, B.A., Northeastern State College, Oklahoma; M.Ed., Ed.D., University of Oklahoma.

Professor of Special Education; Chairman, Department of Special Education

WAYMAN E. WALKER, B.M.E., University of Colorado; M.M., University of Southern California.

Associate Professor of Instrumental Music

ROLAND C. WATERMAN, B.S., New York State College for Teachers; M.A., Ed.D., Columbia University.

Professor of Business
On Leave Fall Quarter, 1969

JOHN W. WILLCOXON III, B.A.,
Washington and Lee University; M.A.,
Ph.D., University of Minnesota.
Professor of Drama

ALBERT M. WINCHESTER, B.A., Baylor
University; M.A., Ph.D., University of
Texas.
Professor of Biology

DALE E. WOERNER, B.S., Kansas State
University; M.S., Ph.D., University
of Illinois.
Professor of Chemistry

RICHARD R. WOLFE, B.S., Thiel
College; M.S., Westminster College;
Ph.D., University of Pittsburgh.
*Associate Professor of
Special Education*

WELBY B. WOLFE, B.A., M.A., Colo-
rado State College; Ed.D., Columbia
University.
*Professor of Drama; Chairman,
Department of Theater Arts
On Leave Fall Quarter, 1969*

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HEC 263. PROBLEMS IN HOME ECONOMICS. *Three hours credit.*

A study of current trends and problems in selected areas of home economics education. Emphasis is centered upon curriculum and evaluation.

HEC 264. IMPROVEMENT OF INSTRUCTION IN HOME ECONOMICS. *Four hours credit.*

This course is planned primarily for advanced students who wish to improve their competence in teaching home economics in junior and senior high school and in higher education.

HEC 265. ADULT EDUCATION IN HOMEMAKING. *Three hours credit.*

A study of adult education including philosophy, procedures used in organizing and promoting programs, techniques used in teaching adults, and special concerns associated with adult programs.

HEC 266. INSTRUCTIONAL AIDS IN HOME ECONOMICS. *Four hours credit.*

Students develop and use criteria in evaluating teaching materials and aids. Selecting, organizing, and storing of aids are included. Visual aids and devices used in teaching various phases of homemaking are planned and prepared. Printed materials are evaluated.

HEC 267. PRINCIPLES AND PRACTICES OF EVALUATION IN HOME ECONOMICS EDUCATION. *Three hours credit.*

Prerequisite, EDCI 140-141. Emphasis is upon the development of formal and informal evaluation devices for use in evaluating student growth and development in the home economics classroom. Each evaluation instrument is examined as to purpose and need within the educational setting. Consideration is also given to the interpretation of test scores.

HEC 268. SENIOR SEMINAR IN HOME ECONOMICS EDUCATION. *Two hours credit.*

Prerequisite, SFE 251. Analysis and evaluation of student field experiences in home economics education.

HEC 272. APPLIED HOME FURNISHINGS. *Three hours credit. (One hour lecture, four hours laboratory.)*

A study of various projects which will give students experience in the application of art principles to interior decorations. Individual and/or class projects such as the construction of draperies, bedspreads and slipcovers.

HEC 273. HOUSE PLANNING AND MATERIALS. *Three hours credit. (Three hours lecture.)*

Prerequisite, HEC 171. Basic planning principles, construction details as well as structural aspects of the house are emphasized.

HEC 274. EQUIPMENT SELECTION AND MAINTENANCE. *Four hours credit. (Three hours lecture, two hours laboratory.)*

Through individual reports, projects, field trips, demonstrations, and classroom discussions, a body of knowledge and criteria are developed by which equipment and utensils may be evaluated. Basic scientific principles of heat, mechanics, electricity, and light are studied.

HEC 291. PERSONAL IMPROVEMENT FOR THE TEACHER. *Three hours credit.*

A study of the personal improvement of the teacher. Emphasis will be given to the problems of the individual. Techniques for the development of positive mental health, expressive personality traits and attractive personal appearance will be stressed.

HEC 294. TAILORING. *Four hours credit. (Two hours lecture, four hours laboratory.)*

Prerequisites HEC 92, 193. Opportunity for developing skill is presented in the construction of tailored suits.

HEC 295. CREATIVE PROBLEMS IN DRESS DESIGN. *Four hours credit.*
(*Two hours lecture, four hours laboratory.*)

Prerequisites, HEC 91, 92, 193. Basic problems in draping on dress forms and in the drafting of flat patterns. Opportunity is provided for creative designs for different figure types in a variety of textured fabrics. Some consideration is given also to the design of simple decorative details and appropriate accessories.

HEC 308. DIRECTIONS IN HOME ECONOMICS. *One hour credit.*

Analysis of the home economics profession with emphasis on review and discussion of current programs in relation to philosophy and purposes as a foundation for graduate study.

HEC 342. PRINCIPLES AND TECHNIQUES OF COOKERY. *Four hours credit.* (*Two hours lecture, four hours laboratory.*)

A study of the scientific principles which are basic to protein, fat and carbohydrate cookery. The principles involved in hydration, crystallization, leavening, emulsions and other cookery problems will be included. The relationships between techniques of food preparation and principles involved will be stressed.

HEC 348. FAMILY MEAL MANAGEMENT. *Four hours credit.* (*Two hours lecture, four hours laboratory.*)

An intensified survey of basic concepts related to food study. Aesthetic, economic and scientific aspects of food selection, preparation and service as it applies to the home.

HEC 355. RESEARCH IN FOODS. *Four hours credit.* (*Two hours lecture, four hours laboratory.*)

Prerequisites, HEC 41, 142, CHEM 40. To be taken concurrently with CHEM 240—Food Analysis. Study of the recent findings in food research. Opportunity is given for individual investigation in various problems of food preparation. Valid techniques of experimentation are stressed.

HEC 357. FOOD ECONOMICS. *Three hours credit.*

A study of family and world food problems: the influence of food on world conditions, work of the Food and Agriculture Organization of the United Nations (FAO), problems of food production, marketing, consumer practices and consumer protection in the United States, the cost of meeting nutrition needs of the American family.

HEC 359. SEMINAR IN NUTRITION. *Three hours credit.*

Study focusing on recent research which provides new scientific information in nutrition and new approaches to effective application of nutrition knowledge. Emphasis on review of current literature with discussion and evaluation. Special individual and group reports on topics selected according to needs and interests of the students.

HEC 366. SUPERVISION OF STUDENT TEACHING IN HOME ECONOMICS. *Three hours credit.*

The qualifications, objectives and responsibilities of the supervising teacher are analyzed. Supervision techniques and the evaluation of the development of the student teacher are stressed.

HEC 367. TEACHING PROBLEMS IN HOME ECONOMICS EDUCATION. *Four hours credit.*

Modern trends in homemaking education will be evaluated. Problems of the individual teacher are studied and assistance is given her in working out practical solutions. Common problems are considered by the entire group.

HEC 368. CURRICULUM IN HOMEMAKING. *Three hours credit.*

This course helps teachers improve their ability to plan functional programs in homemaking and to solve other curriculum problems. Implications of social and economic conditions, research findings, trends in education and current issues are determined. Modern methods of program planning are studied. Students have experience in curriculum planning.