

The State Teachers College of Colorado

BULLETIN CONCERNING
THE GRADUATE COLLEGE
ANNOUNCEMENTS FOR
THE SUMMER TERM, 1915
AND
THE SCHOOL YEAR, 1915-1916



Simplified spelling is used in all publications of the
State Teachers College.

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THE GRADUATE COLLEGE

OF THE

State Teachers College of Colorado

ANNOUNCEMENT FOR

THE SUMMER TERM, 1915

(June 21 to July 30)

AND

THE SCHOOL YEAR, 1915-1916



PUBLISHED BY THE BOARD OF TRUSTEES

GREELEY, COLORADO

FACULTY*

ZACHARIAH XENOPHON SNYDER, President, and Professor of Education.

A.B., Waynesburg College, 1876; Ph.D., *ibid.*, 1883; Elementary schools several years; principal and superintendent of schools, seven years; Professor of Mathematics, Waynesburg College, two years; President State Normal School, Indiana, Pennsylvania, three years; present position, 1891.

JAMES HARVEY HAYS, Vice-President, Dean of the College, and of Non-resident and Summer Term Work, and Professor of Latin and Mythology.

A.B., Monmouth College, 1877; A.M., *ibid.*, 1880; high school principal and teacher, four years; superintendent of city schools, six years; present position, 1891.

THOMAS C. McCracken, Dean of the Graduate College, and Professor of Education.

A.B., Monmouth College, 1904; A.M., Harvard University, 1911; Teaching Fellow in Monmouth College, 1902-04; graduate student, Harvard University, 1909-13; Harvard South End House Fellow in Social Education, 1910-12; Director of Research for Women's Municipal League in Radcliffe and Wellesley Colleges and in Boston and Harvard Universities, 1911-13; elementary schools, four years; secondary schools, eight years; Assistant Professor of Education, University of Utah, 1913-14; editor of "Opportunities for Vocational Training in Boston," Women's Municipal League, 1913; present position, 1914.

HELEN GILPIN-BROWN, Dean of Women.

A.B., State Teachers College of Colorado, 1914; Fellowship, State Teachers College, 1913-14; teaching experience: private school, four years; State Teachers College, two summer terms; present position, 1914.

*This list includes all the members of the College Faculty. Some are not offering any graduate courses. All are ready, however, to direct graduate work along lines of their specialization.

ARTHUR EUGENE BEARDSLEY, Professor of Biology.

B.S., Cornell University, 1878; M.S., University of Colorado, 1898; Fellow of the American Association for the Advancement of Science; contributor to United States Fish Commission Bulletins; present position, 1892.

ELIZABETH HAYS KENDEL, Training Teacher and Professor of Intermediate Education.

A.B., State Teachers College of Colorado, 1913; present position, 1896.

SAMUEL MILO HADDEN, Dean of Practical Arts.

Student Cooper Memorial College, 1890-93; Pd.B., Colorado State Normal, 1897; A.B., University of Denver, 1906; A.M., University of Denver, 1908; student, summer sessions, Columbia University, Chicago University, and Chicago Institute; present position, 1901.

DAVID DOUGLAS HUGH, Dean of the Training Department.

A.B., Harvard, 1892; A. M., Cornell, 1893; Fellow in the Department of Sycology and Education, *ibid.*; Fellow in the Department of Sycology and Education, Clark University, 1895; principal of secondary schools, two years; Professor of Sycology, Colorado State Normal School, 1898-99; Professor of Education, State Agricultural College of Utah, 1899-1900; Professor of Sycology, Colorado State Normal School, 1900-04; present position, 1904.

FRANCIS LORENZO ABBOTT, Professor of Fysical Siences.

B.S., De Pauw University, 1889; A.M., *ibid.*, 1890; graduate student, Johns Hopkins University, 1895-6; Assistant in Fysics, De Pauw University, 1877-90; present position, 1900.

BELLA BRUCE SIBLEY, Professor of Primary Education.

A.B., State Teachers College of Colorado, 1913; student Trun Normal School, Trun, Nova Scotia; Dick's Normal School, spring term, 1896; Colonel Parker's Institute, Chicago, summer 1900; Columbia University, summer 1901 and 1912; Denver University Saturday College, 1898-99-1900; Denver University, summer 1902; four years primary school; two years East Halifax Normal School; present position, 1900.

GURDON RANSOM MILLER, Dean of the Senior College and Professor of Sociology and Economics.

Ph.B., Syracuse University, 1893; A.M., Denver University, 1908; present position, 1905.

FRANCES TOBEY, Dean of the Junior College, and Professor of Reading and Literary Interpretation.

B.S., Western Normal College, Iowa, 1889; Graduate Emerson College of Oratory, 1899; Post Graduate, *ibid.*, 1900; Instructor in Emerson College of Oratory, 1898-1902; Hed of Department of English and Reading, Denver Normal School, 1902-03; Lyceum Lecturer and Reader in Southern States, 1904-06; present position, 1906.

ETHAN ALLAN CROSS, Professor of Literature and English.

A.B., University of Illinois, 1905; Ph.M., University of Chicago, 1906; Scholarship in English, University of Chicago, 1905; principal high school, four years; superintendent city schools, four years; Assistant in Rhetoric, University of Illinois, 1904-5; author of "The Short Story," A. C. McClurg & Company, 1914; contributor to "The American Educational Review," "Education," "The Story Teller's Magazine," and "The American Journal of Sociology"; present position, 1906.

ALBERT F. CARTER, Librarian of State Teachers College.

M.S., Indiana State Normal School, Pa., 1896; A.B., State Teachers College of Colorado; teaching experience: elementary schools, two years; Instructor of Natural Sciences, Indiana State Normal School, Pa., 1896-99; Librarian, *ibid.*, 1899-1901; present position, 1901.

JOHN THOMAS LISTER, Professor of Modern and Foren Languages.

A.B., Butler College, 1897; Graduate Student, University of Chicago, 1899-1900; Ph.B., University of Chicago, 1913; University of Geneva, Switzerland, summer 1901; teaching experience: Professor of Modern Languages, Eureka College, 1898-90; Professor of Modern Languages and Athletics, 1900-03; State Teachers College of Colorado; secondary schools, five years; Director of Fysical Education, 1908-14, State Teachers College of Colorado; present position, 1912.

WILLIAM BARNARD MOONEY, Scool Visitor and Professor of Scool Administration.

A.B., State Teachers College of Colorado, 1910; Fellowship in Colorado State Normal Scool, 1902-04; teacher in elementary scool, one year; principal, two years; superintendent of training scool, Spearfish, South Dakota, 1904-07; present position, 1907.

JACOB DANIEL HEILMAN, Professor of Sycology and Child Study.

M. E., Keystone State Normal Scool, Kutztown, Pa., 1900; A.B., Muhlenberg College, Allentown, Pa., 1903; Ph.D., University of Pennsylvania, 1908; University Scholar in Pedagogy, *ibid.*, 1905; Harrison Fellow in Pedagogy, *ibid.*, 1906; Assistant in Sycological Clinic and Lecturer on Child Study, *ibid.*, 1907; Instructor in Sycology, summer school, *ibid.*, 1907; elementary scools, five years; author of "A Clinical Study of Retarded Children," The Sycological Clinic Press, 1910; contributor to "The Sycological Clinic"; present position, 1908.

ALICE I. YARDLEY, Assistant Librarian.

Pd.B., State Teachers College of Colorado, 1906; present position, 1907.

LULU A. HEILMAN, Professor of Commercial Education.

A.B., State Teachers College of Colorado, 1911; Diploma in Shorthand and Typeriting, Gem City Busines College, Quincy, Ill., 1898; Special Proficiency Certificate as Teacher of Shorthand and Typeriting, Bowling Green Busines University, Bowling Green, Ky.; present position, 1911.

FRANK W. SHULTIS, Professor of Commercial Arts.

M.Ds., State Teachers College, Cedar Falls, Iowa, 1898; B.A., *ibid.*, 1908; M.A., State Teachers College of Colorado, 1914; teaching experience, 20 years in the public scools; present position, 1911.

KATHRYN LONG, Training Teacher, and Professor of Primary Education.

B.A., College of Emporia, Emporia, Kansas, 1901; Kindergarten Diploma, Kansas State Normal, 1904; B.S., Columbia University, 1906; Kindergarten and Primary Critic, New

Mexico Normal University, 1906-07; Primary Critic, Lewiston State Normal School, Idaho, 1909; Superintendent of Schools, Glen Ellyn, Illinois, 1910; Summer Institute Lecturer, Mound City, Kansas; present position, 1911.

EMMA C. DUMKE, High School Reading and Modern Languages. A.B., State Teachers College of Colorado, 1915; student, State Normal School, Oshkosh, Wisconsin; Diploma Cumnock School of Oratory, Northwestern University; two summer sessions, University of Wisconsin; student Northwestern University; scholarship, State Teachers College of Colorado, 1912; present position, 1913.

JOHN T. McCUNNIFF, Professor of Printing and Mechanical Drawing.

Apprentis printer, 1903-07; journeyman printer, 1907-11; graduate Monotype machinist, Lanston Monotype School, Philadelphia, 1912; A.B., State Teachers College of Colorado, 1915; Fellowship, Industrial Arts, State Teachers College, 1910-12; present position, 1912.

MAX H. G. SHENCK, Professor of Bookbinding.

Apprentis bookbinding, Stettin, Germany, 1888-92; Graduate School Bookbinding, Berlin, Germany, 1892-93; Post Graduate School Bookbinding, Zürich, Switzerland, 1895-96; Professional Bookbinding, Munich, Stuttgart, Zürich, Buda-Pesth, Naples, and Denver; present position, 1913.

GEORGE W. FINLEY, Professor of Mathematics.

B.S., Kansas State Agricultural College, 1896; student University of Chicago, summer terms, 1903-05-08; present position, 1912.

NELLIE MARGARET STATLER, Training Teacher, Third Grade.

Pd.B., State Teachers College of Colorado, 1908; A.B., University of Colorado, 1911; Fellowship, State Teachers College, 1911-12; present position, 1912.

GRACE CUSHMAN, Assistant Librarian.

Pd.B., Colorado State Normal School, 1903; present position, 1903-05, 1913.

GEORGE A. BARKER, Professor of Geology and Geografy.

B.S., University of Chicago, 1903; M.S., *ibid.*, 1905; Graduate Scholar in Geografy, University of Chicago, 1904-05; secondary scools, five years; Assistant Professor of Fysiografy, Illinois State Normal University, 1908-12; Professor of Geology, Colorado College, 1913-14; contributor to Journal of Geografy; present position, 1914.

JOHN R. BELL, Principal of High Scool, and Professor of Secondary Education.

Pd.B., Colorado State Normal Scool, 1896; Ph.B., University of Colorado, 1901; M.A., *ibid.*, 1902; Litt.D., University of Denver, 1914; Assistant in History and Economics, one year; principal and teacher of elementary scools, sixteen years; two summers at Denver Normal and Preparatory Scool; present position, 1914.

RAE E. BLANCHARD, Assistant Professor of English.

A.B., Colorado State Teachers College, 1914; Graduate of Boston Normal Scool, 1910; University Extension Work in Literature and Advanst Composition, Harvard; State Teachers College of Colorado, summer of 1914; two years elementary work; two years secondary work; present position, 1914.

AMY RACHEL FOOTE, A.B., Assistant Training Teacher, and Assistant in Grammar Grade Education.

CHARLES M. FOULK, Assistant in Manual Training.

Pd.B., State Teachers College of Colorado, 1914; student State Normal Scool, Edinboro, Pa., 1888-90; apprentis carpenter, 1885-90; journeyman carpenter, 1891-97; bilding superintendent, and student International Correspondence Scool, 1897-1907; contractor and bilder, 1908-13; present position, 1914.

GEORGE E. FREELAND, Principal of the Elementary Scool.

A.B., Kansas State Normal, 1909; A.M., Clark University, 1913; Fellowship in Education, Clark University; teaching experience: secondary scools, three years; Instructor in Sycology in Kansas State Normal Scool, two summers; Hed of the Department of Education, State Normal Scool, Edinboro, Pa.; Summer Lecturer, State Normal Scool, Gunnison, Colorado; present position, 1914.

AGNES HOLMES, Assistant in Industrial Arts.

Pd.M., State Teachers College of Colorado, 1914; Fellowship in Art Department, *ibid.*, 1914; two years in Colorado College Art School; one year in New York School of Fine and Applied Arts; present position, 1914.

JENNY LIND GREEN, Training Teacher, and Assistant Professor of Grammar Grade Education.

Graduate of Illinois State Normal University, 1910; Summer Term, Chicago University, 1911; special student in Education, Teachers College, Columbia, 1913-14; elementary schools, three years; secondary schools, one year; training school supervisor, seventh and eighth grades, Eastern Kentucky State Normal, 1910-13; present position, 1914.

WALTER F. ISAACS, Professor of Drawing and Art.

B.S., James Millikin University, Decatur, Ill., 1909; studied in the Art Students' League of New York, 1910; Art Institute of Chicago, 1913-14; one year's experience in newspaper illustration; supervisor of drawing in the public schools, two years; present position, 1914.

MILDRED DEERING JULIAN, Training Teacher, and Professor of Kindergarten Education.

B.S., Columbia University, 1914; Runyan Scholarship, Columbia, 1913-14; Teacher in George Peabody College, summer 1914; present position, 1914.

JOHN CLARK KENDEL, Professor of Music.

A.B., State Teachers College of Colorado, 1913; voice with John C. Wilcox, Denver; violin with D. D. Abramowitz, former concert master, Cincinnati Symphony Orchestra; harmony, counterpoint, composition, analysis and orchestration with Henry Houseley; present position, 1914.

MARGARET JOY KEYES, Professor of Rhythmical Interpretation.

A.B., State Teachers College of Colorado, 1913; Graduate of Columbia College of Expression, Chicago, 1908; Post Graduate, *ibid.*, 1909; Chalif Normal School of Dancing, summer, 1914; Head of Department of Expression and Physical Training, Prescott School of Music, Minot, N. D., 1910-11; Head of De-

partment of Expression and Fysical Training, Grafton Hall, Fon du Lac, Wis., 1912; special student in Interpretativ Dancing, Chicago; present position, 1914.

MERLE KISSICK, Assistant Professor of Home Economics.

A.B., B.S., University of Wyoming, 1911; Ph.B., University of Chicago, 1914; teaching experience: Instructor in Home Economics, University of Wyoming, two summer sessions; Instructor of History, *ibid.*, one summer session and one year; present position, 1914.

CELIA M. LAWLER, Training Teacher, and Professor of Primary Education.

Pd.M., State Teachers College of Colorado, 1910; Fellowship in Primary Education, State Teachers College of Colorado, 1909-10; Chicago University, summers 1912 and 1914; taught in rural city and training scools; present position, 1914.

NELLIE BELDEN LAYTON, Teacher of Pianoforte.

Student at Conservatory of Chicago; also student with Miss Hyde, Denver; Miss Anna Pollock, Chicago; Mrs. Blanche Dingley-Mathews, Denver.

ROYCE REED LONG, Professor of Fysical Education.

A.B., Leland Stanford Junior University, 1908; special student in Medical Department, 1909-12; Fysical Director in Y. M. C. A., Dixon, Ill., 1897-99; Fysical Director in Y. M. C. A., Aurora, Ill., 1899-1901; Assistant in Fysical Education, Stanford University, 1901-04; Director of Fysical Education, Vanderbilt University, 1904-06; Instructor and Assistant Professor of Hygiene and Director of Gymnasium, Leland Stanford, 1906-14; Instructor in University of California, summer school, 1913-14; present position, 1914.

IDA MARSHALL, Professor of Home Economics.

B.S., Ohio State University, 1902; student University of Chicago, summers 1912-14; Instructor in Domestic Siense, Sherman Institute, Riverside, Calif., 1904-07; Instructor in Domestic Art, public scools, Prescott, Ariz., 1907-10; supervisor of Domestic Siense and Art in public scools of Oshkosh, Wis., 1910-12; Assistant Professor of Domestic Siense, Kansas State Manual Training Normal Scool, Pittsburg, Kansas, 1912-14; present position, 1914.

FRIEDA B. ROHR, Training Teacher of the Sixth Grade.

Pd.M., State Teachers College of Colorado; Fellowship in State Teachers College, 1911-12; present position, 1914.

EDWIN B. SMITH, Professor of History and Political Science.

B.S., Columbia University, 1908; Diploma State Normal School, New York, 1904; two summer sessions, University of California; Fellow in Teachers College of Columbia University, 1907-08; elementary schools, two years; private schools, two years; Professor of History and Economics, California State Polytechnic School, 1910-14; present position, 1914.

CHARLES HALL WITHINGTON, Professor of Agriculture.

B.S., Kansas Agricultural College, 1906; M.S., Kansas Agricultural College, 1908; A.M., Kansas University, 1912; present position, 1914.

Non-Resident Members of the Faculty, Summer Term, 1915

G. STANLEY HALL, Ph.D., LL.D., President of Clark University.

EDWARD A. STEINER, Ph.D., Grinnell College, Iowa.

HENRY SUZZALLO, Ph.D., Columbia University.

DAVID STARR JORDAN, Ph.D., LL.D., Chancellor of Leland Stanford, Jr., University.

RICHARD BURTON, Ph.D., Professor of English, University of Minnesota.

SAMUEL C. SCHMUCKER, Ph.D., State Normal School, Westchester, Pennsylvania.

A. C. MONAHAN, Ph.D., Director of Rural School Department, Bureau of Education, Washington, D. C.

LEVERETT ALLEN ADAMS, A.B., A.M., Columbia University.

MARY C. C. BRADFORD, D.Litt., State Superintendent of Public Instruction of the State of Colorado.

JOHN F. KEATING, A.M., LL.D., Superintendent of City Schools, Pueblo, Colorado.

HARRY M. BARRETT, A.M., LL.D., Principal of the East Side High School, Denver, Colorado.

- ROSCOE C. HILL, A.B., Principal of the High School, Colorado Springs, Colorado.
- J. HENRY ALLEN, A.M., D.Litt., Superintendent of City Schools, Grand Junction, Colorado.
- JOHN A. SEXSON, A.B., Superintendent of Logan County Industrial High School, Sterling, Colorado.
- D. E. WIEDMANN, A.B., Superintendent of City Schools, Montrose, Colorado.
- J. H. SHRIBER, County Superintendent of Schools, Boulder County, Colorado.
- E. C. CASH, A.B., Pinon, Colorado.
- S. S. PHILLIPS, County Superintendent of Otero County, La Junta, Colorado.
- J. R. MORGAN, A.B., City Superintendent of Schools, Trinidad, Colorado.

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- VERNON MCKELVEY, Secretary to the President.
- A. J. PARK, Secretary of the Board of Trustees.
- MARGARET S. DOOLITTLE, Stenographer.
- R. I. PHIPPENY, Stenographer.
- A. W. YAICH, Record Clerk.

The Board of Trustees.

- HON. GEORGE D. STATLER, Greeley Term expires 1921
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- MRS. MARY C. C. BRADFORD, Denver Term expires 1917
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INTRODUCTION

There never was a time when so much interest was taken in the preparation upon the part of educational people for their work. This interest is manifested from the kindergarten thru the grades, thru the high school and thru the higher institutions of learning. There is the thought, the abiding feeling, the professional spirit, and the determination to keep in touch with the best that is modern, progressive, and safe. The teachers of Colorado, the Rocky Mountain region, and in the country at large are alert to this movement in the educational field.

There is need of practical opportunity for schoolmasters to do real, practical, extensive and intensive graduate work in a live situation that is functioning in accordance with modern reconstruction in education. The teachers of Colorado are keenly appreciative of the fact that a positive reconstruction is going on in the management, control, and conduct of the schools of the country, and particularly in the State of Colorado.

To this end The State Teachers College of Colorado has initiated, organized, and is expanding and improving the lines of graduate work to meet the demands made upon it by members of the teaching profession of Colorado and other States of the Union. Owing to the pressure of the demand a temporary organization of graduate work was effected at the beginning of the Summer Term of 1913 under the direction of a special committee. Interest in graduate work in connection with the State Teachers College has grown so rapidly that a permanent organization of graduate work has been effected and is now under the direction of Dean Thomas C. McCracken.

It is the intention of the management of the State Teachers College of Colorado to give those who are seeking to do graduate work the widest, richest, and ripest opportunity for growth and expansion along the lines in which they elect to take their work.

In order to do this a faculty of wide experience and training is drawn upon in the development and realization of this work in the various departments, together with non-resident teachers and men of national renown and standing in education. These

non-resident teachers and lecturers will be gathered here at the State Teachers College of Colorado during the summer term to help develop these courses in graduate work in the domain of education.

Hence the institution presents for the attention and consideration of the educational men and women of the state and of the Rocky Mountain region and of the country this opportunity for the professional improvement for service in the various fields of educational endeavor. It will give an opportunity for general scholarship, an opportunity for professional inspiration and enlargement, and an opportunity for the realization of the ideals and theories of education and their application in teaching in the Training School, in respect to management, organization of the curriculum, and the presentation of requirements in modern education.

Yours truly,

Z. X. SNYDER,
President of the College.

THE GRADUATE COLLEGE

THOMAS C. McCracken, A.M., Dean

The Graduate College offers advanced instruction leading to the degree of Master of Arts in Education. The principal aim of graduate study is the development of the power of independent work and the promotion of the spirit of research. Every department of the college is willing to offer not only the courses regularly scheduled but others of research and advanced nature which the candidate wishes to pursue. Each candidate for a degree is expected to have a wide knowledge of his subject and of related fields of work.

Persons holding the degree of Bachelor of Arts, Letters, Philosophy, or Science from a reputable institution authorized by law to confer these degrees, or holding any other degree or certificate which can be accepted as an equivalent, may be admitted as graduate students in The Colorado State Teachers College upon presenting official credentials.

The prospective student shall fill out the blank "Application for Admission" and hand it to the Dean of the Graduate College for his approval. Such blanks may be secured by addressing The State Teachers College, Greeley, Colorado.

GENERAL PLAN OF WORK FOR THE DEGREE OF MASTER OF ARTS IN EDUCATION.

General Requirements.

1. **Residence.** One year of work in residence at the College in advance of the requirements for the A.B. degree. This is three terms of work beyond a four year college course. It is preferable that the Master's work be done in three consecutive terms. Students may, however, satisfy the residence requirement by attendance for three summer terms under the conditions specified below.

2. **Units of Work.** A year's work shall be interpreted as sixty (60) term-hours. Forty-eight hours credit will be given for graduate courses pursued and twelve (12) hours credit for the Master's

thesis which is required. Twenty (20) hours credit per term during the regular school year is the maximum, inclusive of the research involved in the thesis requirement.

3. Special Interpretation of Graduate Work in Summer Term. Graduate students shall receive for each graduate course pursued in the Summer Term a credit of three (3) hours, twelve (12) hours being the maximum credit per summer term, inclusive of research work in connection with the thesis. In the three summer terms of residence work the student may earn thirty-six (36) hours credit; the remaining twenty-four (24) hours may be earned in non-residence in the intervals between Summer Terms. This organization of the work for students who cannot attend for one year of three consecutive terms is regarded as preferable to the distribution of the work through four or five summer terms. In fact, the extension of the work through a longer period than that of three years is regarded as highly undesirable, on account of the lack of continuity and intensiveness in the character of the work done. If the work is not completed within three years, new conditions may be imposed upon the candidates or the old conditions may be modified.

4. The Nature of Graduate Work.

- (1) It shall be in professional lines of work.

In keeping with our function as a Teachers College, graduate work shall be confined to professional lines of work.

- (2) It shall represent specialization and intensive work.

As soon after enrollment as possible, the graduate student shall focus attention upon some specific problem which shall serve as the center for the organization of his year's work, including courses to be taken and special investigations to be conducted. **No graduate credit will be given for scattered and unrelated courses.**

- (3) Provision for research work in any department.

The graduate student is permitted to choose his thesis subject and to carry on his special research in any department, in so far as the department in question offers facilities for theoretic and professional work relative to the problems of teaching and of education. When this department has been drawn upon for all the available advanced courses relevant to the problem in hand, the work of the student will

be reenforst by the selection of approvd courses from the departments of Education, Sycology, Training Scool, Sociology, and others offering advanst courses which can be correlated with the line of special work which the student is pursuing.

(4) Thesis.

Reserch work culminating in the riting of a thesis upon some vital problem of education shal be an integral part of the work for the Master's degree. The problem of the thesis should form the correlating center of all the courses pursued.

The thesis, as a rule, should giv the origin, growth, and development of the problem. It should contain a resume of all the significant contributions that hav been made toward its solution, and it should bring the status of the problem up to date. It should hav that degree of detail and completenes which wil make it authoritativ for another who wishes to kno the history and present status of the problem in question. It is not essential to the Master's thesis that an original contribution be made, but in many cases this is both desirable and possible. In this matter much wil depend on the nature of the problem.

(5) Breadth and range of professional outlook.

In addition to the intensiv and specialized work which is required of candidates for the Master's degree, they ar expected to show familiarity with the fundamentals of professional work over a wide range. The examiners wil feel free to test candidates in this respect even if they hav pursued no courses with the intent of covering the whole field. To indicate ruffly what is ment by this requirement, the field in question is that suggested by the folloing list of books or their equivalent. Candidates for the Master's degree should supplement their special work by reading along these lines. The list of readings is only suggestiv and is more or les in the nature of a minimum in the matter of fundamentals:

Biological—

Thomson, John A.....Darwinism and Human Life
 Shute, D. K.....Organic Evolution
 Conn, H. W.....Method of Evolution

- Cubberley, E. P.....State and County Educational
Reorganization
- Hollister, H. A.....The Administration of Education
in a Democracy
- Education in Rural Communities—
- Cubberley, E. P.....Rural Life and Education
- Curtis, Henry S.....Play and Recreation
- Eggleston & Bruere.....The Work of the Rural School

(6) Final examination upon the whole course.

There will be a final examination, oral or ritten, upon the whole course. An oral examination of two hours duration is customary. This examination wil cover the folloing ground: (a) The field of the thesis and special reserch, including topics closely related thereto; (b) The field covered by the special courses taken by the candidate; (c) The general field of Sycology and Education in the matters of fundamental knolege and of common interest, as suggested in (5) above.

General Information.

1. All graduate students must register with the Dean of the Graduate College. All courses taken, both resident and non-resident, must be approvd by him in advance.

2. No graduate student may enrol for more than twenty (20) hours work in any regular term, nor for more than four courses, of a total credit valu of twelv (12) hours in the Summer Term. This regulation is essential to the maintenance of the standard of intensiv work for the Master's degree. In determining the maximum amount of work permitted, reserch upon the thesis topic must be included within the limit stated. To this end, the student doing reserch work upon his thesis topic must enroll for the same.

3. All work allowd as resident work toward the M.A. degree shal be done in residence at this institution except when it is done by specific arrangement with the Dean of the Graduate College of this institution under the direction of one of the regular summer exchange professors (e. g., Dr. Suzzallo, Dr. Hall, etc.) in institutions of collegiate rank of whose faculty they ar members.

4. In order that the standard of intensiv and specialized work for the Master's degree may be maintaind, no graduate credit will be givn for elementary courses, for scatterd and unrelated courses, for public platform lectures or public platform lecture courses, for courses in which the element of routine is large as compared with the theoretical and professional aspects.

5. Exces A.B. work may be applied toward the M.A. degree only when arrangement is made in advance with the Dean of the Graduate College so that he may see that the work is made of M.A. standard and that it is in line with the specialization necessary for the M.A. degree.

6. Five hour summer courses of A.B. standard may be allowd to be applied as M.A. work for three hours credit only when approved in advance by the Dean of the Graduate College subject to conditions formerly adopted.

7. The courses which may be taken for graduate credit must be of an advanst character, requiring intensiv study and specialization. Certain approved courses in the Junior and Senior Colleges may be pursued for graduate credit; but, when so taken, the character of the work done and the amount of ground to be coverd must be judged by a higher standard than that which applies to the regular Junior or Senior College student. The standard of intensiv work set for, the graduate student must be maintaind even if special additional assignments hav to be made to the graduate student who works side by side with the Senior College student.

8. Satisfactory teaching experience shal be regarded as a prerequisite to graduation with the Master's degree. Teaching in some department of the college or its training scool may, under certain conditions, be included in the graduate work of candidates for the Master of Arts degree. Routine teaching will not be recognized for graduate credit. Mere experience in the practical activities of teaching is not adequate. When graduate credit is givn to teaching, this work must be of an advanst character, so organized, controlld, and supervised as to yield some sientific result, assist in the solution of some educational problem, hav some definit constructiv valu, or insure some decided growth of the teacher in the scholarship of the subject or professional insight into its valu and problems.

9. Fifteen hours credit toward the M.A. degree shall be the maximum amount allowed to be earned in a regular school year by anyone who is employed on full time, except upon the recommendation of the Dean of the Graduate College and the approval of the Council of Deans.

10. A class admission card similar to that used in undergraduate work but of different color shall be used for admission to class in order to indicate clearly to the instructor that the student is to do graduate work. This card should be approved by the Dean of the Graduate College as well as by the Dean of the College.

11. Instructors who have graduate students in their classes shall report in writing to the Dean of the Graduate College their statement of extra work for such students.

12. Graduate credit for leadership of group work with non-resident students shall be given only when approved in advance by the Dean of the Graduate College and the Dean of the College.

13. Final work toward the M.A. degree shall be done in residence and under the supervision of the Dean of the Graduate College unless special permission to do it in non-residence has been granted by the Council of Deans and upon the recommendation of the Dean of the Graduate College.

14. All work for the M.A. degree shall be done with distinction; work barely passed shall not be considered worthy of such an advanced degree.

15. The thesis subject of the graduate student must be approved in advance by the Dean of the Graduate College and by the head of the department concerned. Before the degree is conferred the thesis as a whole, and in detail, must be approved by the head of the department or the instructor under whose direction the thesis work has been done and also by the Dean of the Graduate College. Also three typewritten copies of the thesis must be placed on file with the Dean of the Graduate College, one copy of which he shall place in the Library for permanent reference.

16. Before the candidate for the Master of Arts degree is admitted to final examination the thesis requirement must be met in full, or the thesis must be in such a state of readiness that only minor reconstructions need to be made, which will not

delay its being put in final typeritten form for filing before the end of the term in which graduation falls.

17. The final examination will be presided over by the Dean of the Graduate College and conducted by the hed of the department in which the candidate has done the main part of his work. All other members of the faculty under whom the candidate has taken courses counting toward the Master's degree shal be givn an opportunity to participate in the examination. An official visitor, or official visitors, from outside the department in which the candidate has specialized shal be appointed to attend the examination.

Directions as to the Form of the Thesis.

Students submitting theses, should present them in typeritten form, upon paper of good quality, of customary size ($8\frac{1}{2} \times 11$), leaving a margin at the left adequate for binding—fifteen points by the typeriter, twenty if the manuscript is thick. One copy of the thesis will be bound for the library by our bindery at the student's expense.

A title page should be prepared containing in neat lettering at the top the name of the institution THE STATE TEACHERS COLLEGE OF COLORADO; belo this at some distance the title of the thesis, about the middle of the page the statement, A THESIS SUBMITTED IN CANDIDACY FOR THE DEGREE OF MASTER OF ARTS IN EDUCATION, at a lower level of the page the author's name, and at the bottom the adrees, and the year.

All theses should contain a brief analysis or table of contents at the beginning, should giv footnote references to literature quoted, and should contain at the end a bibliografy of the literature of their subject. In giving references and bibliografic material, the customary form of publishing houses should be used, which is quite uniformly that of the author first, folloed by title, and in case of magazine references, this by title of magazine, volume or date, and page.

Fees for Graduate Courses.

Fees for graduate students in the Summer Term will be on the same basis as fees for all others. In the regular scool year, and

for that part of the work which may be done in non-residence the fees are fixed at one dollar (\$1.00) for each term hour of credit. This would mean that for a course in which recitations occur five times a week for one term the fees would be five dollars (\$5.00); for four such courses the fees would be twenty dollars (\$20.00). Students doing graduate work should expect to buy some of the books which they need. The binding of the thesis required for filing in the library will be charged to the student at cost.

Courses of Instruction.

The courses of instruction which follow are regularly described and offered, but every department of the college is ready to direct work along advanced lines whenever the student desires to do work other than that offered.

EDUCATION.

Thomas C. McCracken, A.M.

29. Current Educational Thought. Open to mature students of the Senior College upon permission of the instructor. This course is intended as a common meeting place for all graduate students no matter what their line of specialization. The work of the course will consist of reviews and discussions of recent books in the various fields of education. Significant contributions to educational thought and practices found in journals, reports of associations, commissions, and Boards of Education will also be considered. Winter and Summer Terms. Mr. McCracken.

41. Master's Thesis Course. The student who expects to work upon his Master's thesis will register for this course no matter for which department the thesis is being prepared. The Dean of the Graduate College will co-operate with the professor under whose general direction the research comes in placing at the disposal of the student all the research and conference opportunities that the institution affords. Every term. Mr. McCracken.

28. Comparative Study of School Systems. Open to Senior College students upon permission of the instructor. The study of European systems of education, particularly German, French, and

English, will be made for the sake of a comparative basis and the suggestions that they furnish as to the current problems in American school administration. Fall and Summer Terms.

Mr. Mooney.

42. **Administrative and Social Aspects of Education.** Open to mature students of the Senior College upon permission of the instructor. The plan of this course comprises a brief description of American schools and school systems with special stress upon the rise of school supervision; a comparative study of contemporary organization and administration with special reference to underlying social and economic problems; a critical examination of typical city and village systems; a survey of the organization, powers, and duties of the Board of Education; also of the qualifications, powers, duties, and opportunities of the superintendent and principal. Winter and Summer Terms.

Mr. Mooney, Winter Term.

Mr. Keating, Summer, 1915.

17. **Vocational Education.** Mature students of the Senior College may take the course if granted permission by the instructor. This course has for its purpose the interpretation of the subject from the artistic, industrial, and commercial standpoints. The material of the course will include a discussion of standards for measuring demands, needs in relation to these demands, the use of standard types in relation to education and the attempted solutions of the problem of vocational education in this and European countries. Fall and Summer Terms. Mr. Hadden.

23. **Research in Education.** Open to mature Senior College students upon permission of the instructor. This course is intended for advanced students capable of doing research in educational problems. Each student may choose the problem of greatest interest to him provided sufficient opportunity is at hand for original investigation. The results of such research are to be embodied in a thesis. The following thesis subjects are suggested. The student may choose one or more of them, and credit hours will be given in accordance with the amount of work done.

***(a) The Hygiene of Work.** This would take up the capacity of the human machine, the best rate of work, and the best times to work and the best ways of working; an attempt would be made to solv all of these problems from data gatherd from scientific experiments, and the student would be givn direction in carrying on a number of experiments, with the different methods of mesuring.

***(b) The Hygiene of the Boy and the Girl.** The adaptation of education to the sexes; fundamental sex differences; how does the scool work affect them differently; what sort of exercise should they take; how do athletics and exercise affect them?

***(c) Education Based upon Child Nature.** The things in children upon which we bild education. How can this be done? What ar the results? This study may be as long and as intensiv as the reserch student wishes to make it. It may go into a study of life and be made observational and experimental.

(d) A constructiv study of cards and other blanks used in the offis of the superintendent of scools, the principal of the high scool, and the principal of the elementary scool.

(e) A survey of the relation of the state (any or all states in the United States) to public education within its bounds.

(f) Federal and state aid to vocational education and to varius types of special scools.

(g) The present status and practical valu of vocational guidance.

(h) The status of fysical education in the public scools of Colorado.

(i) The playground and recreation movement. Its rise, growth, and present status.

Winter, Spring, and Summer Terms.

Mr. McCracken, Mr. Long, and Mr. Freeland.

*In all of these subjects we can furnish fifty or more references and hav on file many translations from German and French sources of books and articles in these lines, but in addition to these the student will be expected to find references and bild up a bibliografy of his own upon any subject he may undertake to work out.

25. Administration of Rural Schools. Open to Senior and Graduate College students. This is an advanced course in the study of rural education, which aims to meet the needs of county superintendents, rural supervisors, and others interested in special problems of country life, both on their social and educational sides. It will include studies and special researches in the various phases of reconstruction and enrichment of rural education, such as the work of the agricultural high school, co-operation of the agricultural college, of the U. S. Department of Agriculture, other agricultural agencies with the country schools, and forward movements in legislation as they affect the life of the farm and the education of country children. Winter and Summer Terms.

Mr. Mooney, Winter Term.

Mr. Shriber, Summer, 1915.

14. Advanced Biotics. This course is intended for students capable of pursuing advanced study in Biotics. The following subjects are suggested for intensive work under direction of the instructor by conference at hours convenient to both student and instructor. One or more subjects may be chosen and credit hours given in accordance with the amount of work done:

- (a) The Evolution of the Cell—the Physiological Cell belongs to all parts of life, from the unicellular life to the most highly socialized civilization.
- (b) The application of the Science of Genetics to the interpretation of Human Situations.
- (c) Weismann's theory of heredity—the Germ Plasm—its Continuity—a basis of Immortality.
- (d) The Life Series—The Trail of Life from world stuff to the super-man, inclusive.
- (e) Lamarck; his theory of selection; its comparison with Weismannism.
- (f) Darwin—The Epoch Maker.
- (g) The Genesis of Movement from Atom to Civilization.

Every term.

President Snyder.

10.* History of Education in Ancient Times. Junior College. Open to Senior and Graduate College students. This course will deal with primitive education; Hebrew life, educational ideals, and practices; Greek life, civilization, and thought and their dominant educational ideals, practices, and philosophies; Roman education; and the transmission of significant elements of educational theory and practice to later educational periods. Three hours. M. W. F. Fall Term at 9:05. Mr. McCracken.

32.* History of Education—In Medieval and Renaissance Times. Junior College. Open to Senior and Graduate College students. This course will consist of a brief study of early Christian education, showing the trend of educational thought in the early Church, the types of schools which grew up, and the relation of Christian thought and Christian schools to pagan learning. Special attention will be paid to the evolution of the various types of education which grew up during the Middle Ages. The Renaissance will be studied with special reference to the fundamental changes that took place in educational ideals and aims and in religious thought, the effect of these upon the curriculum and upon educational institutions, the definite contributions which this period made to educational progress, and the problems which the Renaissance movement created for modern education. Three hours. M. W. F. Winter Term at 9:05. Mr. McCracken.

33.* History of Modern Elementary Education. Junior College. Open to Senior and Graduate College students. This course will be introduced by a brief review of the educational heritage of the Renaissance to furnish the setting for the study of the trend of modern education. The main part of the course will be devoted to the history of modern elementary education, including such subjects as the development of the vernacular schools, the early religious basis of elementary schools, and the transition to a secular basis, together with the work of such men as Comenius, Locke, Rousseau, Pestalozzi, Herbart, and Froebel. Spring and Summer Terms. Mr. McCracken, Spring Term. Mr. Phillips, Summer, 1915.

*No student should elect any course in the history of education unless he has had courses in political history covering the same periods of time.

22. Evolution of Secondary Education. Senior College. Open to Graduate College students. This course takes up the history of secondary education. Special attention will be given to the study of the American high school in relation to the life and needs of the American people. The historical study will prepare the way for the analysis of present conditions, and this will be used as the basis for the determination of the function and significance of the high school at the present time, and its responsibility for new adjustments to present social needs. Spring and Summer Terms.

Mr. McCracken, Spring Term.

Mr. Barrett, Summer, 1915.

27. General Education. Junior College. Open to Senior College students. Required. Graduate students will not receive credit for this course, except by special arrangement made in advance with the Dean of the Graduate College. This course will consist of a series of daily lectures by men eminent in the field of education. Summer, 1915.

LECTURERS—Dr. G. Stanley Hall, Dr. Edward A. Steiner, Dr. Henry Suzzallo, Dr. Samuel C. Smucker, Dr. Richard Burton, Dr. David Starr Jordan.

34. American Education. Senior College. Open to Graduate students. This course will be introduced by a study of the educational ideals and practices with which the colonists were familiar in the Old Country. A careful study will be made of typical methods of meeting educational needs in the colonies, of growth in the direction of more complete recognition of the public school idea, and of the spread of the public school system westward with the westward expansion of the nation. Attention will be paid to various features of our school system, such as the following: the district school, the high school, the state university, great denominational and private institutions of learning, the teachers' institute, the state normal school, the state superintendency, the county superintendency, the city superintendency, the agricultural college, etc. An attempt will be made to get a clear comprehension of the dominant conceptions and the present problems of American education through the study of the men and the movements that are responsible for their emergence. 2 hours. (Not to be given 1915-16.)

Mr. McCracken.

24.* Scool Administration. Junior College. Open to Senior and Graduate College students. This course wil deal with scool and clas-room management, and is designd to meet the needs of supervisors, principals, and clas-room teachers. Each student may make a special study of the problem in which he is particularly interested. Problems peculiar to superintendents and supervisors in villages and small cities wil be considerd. Fall and Summer Terms.

Mr. Mooney, Fall Term.

Mr. Keating, Summer, 1915.

12. Current Social Movements in Education. Senior College. Open to mature students of the Junior College upon permission of the instructor and to students of the Graduate College. This course consists of lectures, discussions, readings, and reports, all centering in the thought of education as a faze of the social proces. It wil take up topics such as the folloing: The scool and society; the scool as a social center; relation of the teacher to the community; the social interpretation of the curriculum, with the significance of the varius subjects of study; the proces of socializing the individual; recent and contemporary scientific and social tendencies, with their bearing on education; problems of child welfare; the rural scool in its relation to rural life; the playground movement; the trend toward vocational education and vocational guidance. Spring and Summer Terms.

Mr. McCracken, Spring Term.

Mr. McCracken and Mr. Bell, Summer, 1915.

20. High Scool Administration. Senior College. Open to Graduate College students. This course wil deal with the organization, management, and administration of high scools; a critical examination of typical high scools, emfasizing the function, courses, social needs, equipment, special classes, training and qualification of teachers, and similar matters of administration; and the high scool in its administrativ relation to elementary and higher education. Winter and Summer Terms. (Not to be givn Winter 1915-16.)

Mr. Bell, Winter Term.

Mr. Sexson, Summer, 1915.

*This course may be substituted for Education 11 as a required course during the Summer Term, 1915.

19. **Principles of High School Education.** Senior College. Open to Graduate College students. For students preparing for recommendation as high school teachers. The course will be introduced by a brief survey of the psychology of adolescence in its relation to the general problem of interpreting the life of the high school pupil and the adjustment of teaching method and subject-matter to his stage of development. Attention will be given to the underlying aims of the high school as they are being conceived by the most progressive educators. A critical evaluation of the function of the various subjects taught in the high school will be made, and the principles underlying current reconstructions of the curriculum and the content of specific subjects will be discussed. The newer conceptions of the nature and function of the American high school will be continually emphasized. Three hours. Spring Term. M. W. F. at 11:25. Mr. Bell.

43. **Federal Aid to and State Control of Education.** Senior College. Open to Graduate College students. This course is designed to bring to the student a knowledge of the efforts of the federal government to aid education; also a survey of the school law of typical states, which will show the plan of the state administration of the school system within its bounds. Two hours. Fall Term. T. Th. at 10:30. Mr. McCracken.

16. **Theory of High School Curriculum.** Open to Graduate College students. A discussion of educational values and the arrangement of studies to suit the age of the pupil. An attempt to eliminate waste material and to stress those courses that best prepare for life. A survey of experiments in the introduction of vocational courses in the curriculum of the secondary school; this will lead to a careful study of the various types of American secondary schools. 3 hours, M. W. F. Fall Term at 11:25. (Not to be given 1915-16.) Mr. Bell.

TRAINING SCHOOL DEPARTMENT

David Douglas Hugh, A.M., Dean.

2. **Elementary School Teaching.** Junior College. Open to Senior and Graduate College students. Required of students preparing to be teachers in elementary schools. This work is

intended both for young students who have not had previous experience in teaching and also for teachers who are ambitious to attain greater efficiency in their work. Provision is made for training in all divisions of the elementary school. An expert teacher is in charge of each grade. Students will receive training in the organization of subject-matter, in methods of instruction, and in classroom management. They meet with their training teachers in weekly conferences and more frequently individually to discuss the practical problems of school work. Every term, including Summer, 1915.

Mr. Hugh, Mr. Freeland, and Training Teachers.

3. Elementary School Supervision. Junior College. Open to Senior and Graduate College students. Students who have served their period of apprenticeship in the elementary school and who have done work of an exceptionally high character may be allowed to assist in the supervision of teaching in the training department. They will still work under the direction of the training teachers but will have greater responsibilities and a larger share in the administrative work of the school. This training is intended for those seeking the more responsible positions in elementary school work and also for those who are planning to become training teachers for normal schools. Hours to be arranged. Fall, Winter, and Spring Terms.

Mr. Hugh, Mr. Freeland, and Training Teachers.

10. The Curriculum of the Elementary School. Senior College. Open to Graduate College students. This course will include the study of the principles underlying the organization of the curriculum of the elementary school, the time allotments of the different subjects, and the selection of the material for the various school subjects, such as history, geography, reading, etc., and also the choice of text-books. The work will be based on the course of study in the elementary section of the training school with comparison of the curricula of similar institutions and of the public schools. Experimental work may be done in connection with this course in the elementary school. Spring Term. Three hours.

Mr. Hugh.

12. **Training Scool Seminar.** Senior College. Open to Graduate College students. The purpose of this course is to afford mature students an opportunity to make a thoro study of special problems of interest in connection with the curriculum, methods, or organization of public scool work. An opportunity wil be provided to use the Training Scool in any way practicable in connection with this course as wel as to study the work of public scools. Each term. Hours to be arranged. Fall and Winter Terms. Mr. Hugh.

29. **Kindergarten Theory.** Senior College. Open to Graduate College students. The filosofy of the kindergarten. A study is made of articles by MacVannel, Thorndike, Dewey, and other, reports of the I. K. U. and articles in current magazines. Practis is givn in teaching classes in theory in the Junior College. 5 hours. Spring Term. Miss Julian.

30. **Kindergarten Conference.** Senior College. Open to Graduate College students. This course wil take up the problems of kindergarten supervision. A critical study wil be made of typical kindergarten programs in different scools. The bearing of modern educational theories upon the kindergarten curriculum wil be considerd. 3 hours. Fall Term. Miss Julian.

38. **The Play Life of Children as a Basis for Education in the Kindergarten.** Senior College. Open to Graduate College students. The meaning of educational play and its significance in the mental and moral development of the children of the kindergarten and primary grade age ar considerd. The course wil include readings, lectures, observation in kindergarten, and discussion of methods and materials. Summer and Fall Terms. Miss Julian.

40. **Practis Teaching in the High Scool.** Senior College. Open to Graduate College students. Required of students preparing for recommendation as high scool teachers. Practis teaching in the high scool includes the teaching of a clas one hour a day thruout the year, with full responsibility for the disciplin and management of the room. This teaching wil be

under the immediate supervision of the Superintendent of the Training School, the principal of the High School, and the head of the department under whose jurisdiction the subject taut falls. Practis teaching is designd not merely to fit the teacher to deal with the problems of teaching the particular clas assignd, but also to make the teacher efficient in all the scool duties which may devolv upon the teacher in actual high scool work. Accordingly, it is made an integral part of the work in this Department for the practis teacher to assume responsibilities for the conduct of morning exercises, assistance in the work of literary societies, direction of literary society and special day programs, and to participate in all other forms of scool life characteristic of the high scool. Four terms, 5 hours each. Every term.

Mr. Hugh, Mr. Bell.

41. High School Supervision. Senior College. Open to Graduate College students. Persons who hav shown an unusually high degree of efficiency in high scool teaching may be allowd to assist in the supervision of the high scool work. This training wil afford them a more comprehensiv view of the work and practis in the supervision of training of yunger teachers. This experience is intended primarily for those who ar preparing themselvs for principals and superintendents or to fil other position of responsibility in public scool work. Hours to be arranged. Every term.

Mr. Hugh, Mr. Bell.

42. Principles of Teaching as Applied to High School Subjects. Senior College. Open to Graduate College students. Discussions, lectures, readings, and observations. This is an attempt to study in a real and practical way some of the best modern methods, equipment, material, etc., pertaining to the teaching of the different high scool subjects, and to point out some of the special difficulties peculiar to each subject. Each student, before the close of the term, wil make a special study of the subject which he is preparing to teach. This course is open only to present or prospectiv high scool teachers, and should be taken by such insted of Course 1. Spring and Summer Terms.

Mr. Bell, Spring Term.

Mr. Barrett, Summer, 1915.

44. High School Practicum. Senior College. Open to Graduate College students. This course will consist of the study of a number of practical problems for the high school teachers. Among these will be the classification and causes of crimes and misdemeanors, faults, etc., having to do with high school government; truancy, its causes and remedies; student government, its history and present value; play and athletics, value and best methods of control, high school incentives; the high school as a social center; dental and medical inspection; how to provide for the varying abilities of pupils; elective vs. required studies; retardation and elimination of high school pupils; home study. Summer and Fall Terms. Mr. Bell.

46. Observation and Methods of Teaching High School Subjects. Senior College. Open to Graduate College students. This course will consist of a study of methods adapted to high school work, with especial reference to the teaching of mathematics and science. Observations of the teaching of classes in the high school will form a part of this course. Mr. Hill, Summer, 1915.

PSYCHOLOGY.

Jacob Daniel Heilman, Ph.D.

3. Child Study. Second year. Junior College. Open to Senior and Graduate College students. There are two courses in child study which are described under a and b below. The general purpose of the courses is to give the student a better knowledge of the physical and mental natures of the child, in order that the methods proposed for its care, training, and education may be better evaluated.

a. The following are some of the topics which will be taken up in this course: the need, purpose, and methods of child study; anthropometrical measurements and growth; the effects of food, air, clothing, and exercise upon the health of the child; adolescence and sex hygiene; physiological age and school age; the general mental development; mental fatigue and school work; the nature and development of the child's processes of attention, sensation, and perception and their significance in school work. 3 hours. Fall Term. Dr. Heilman.

b. This course will continue the nature and development of the child's mental processes and their significance in school work. Among them are specific memories, lasting and immediate retention, imagery and imagination, esthetic and other feeling, and the processes of suggestion and volition. There will also be a discussion of the psychology of lying, the management of children, children's ideals and their moral and religious lives. The doctrine of children's endowment, their speech development, and the psychology and pedagogy of drawing will receive consideration. 3 hours. Winter Term. Dr. Heilman.

4. **Clinical Psychology.** Second year. Junior College. Open to Senior and Graduate College students. The development of the ability to study and know each child and to see what may retard or promote his progress is the object of this course. The methods and tests used to determine the mental status and intellectual level of the child will be illustrated and explained. The effect of physical abnormalities and speech defects upon the mental development of the child will be taken up. A part of the course will be devoted to the diagnosis, classification, history, training and treatment of backward and feeble-minded children. Additional work will be on the hygiene of generation and the social problems of the feeble-minded. Spring and Summer Terms. Dr. Heilman.

7. **Advanced General Psychology.** The student will be obliged to write a comprehensive thesis on some specific mental process, such as retinal sensations, auditory sensations, attention, memory or some other topic agreeable to the head of the department. Any term. Dr. Heilman.

8. **Advanced Educational Psychology.** A comprehensive thesis will be required on some specific subject. Examples: formal discipline, mental and physical tests, sex hygiene, speech defects, nutrition, defective children. Any term. Dr. Heilman.

BIOLOGICAL SCIENCE.

Arthur Eugene Beardsley, M.S.

Botany.

3. **Advanced Botany.** A laboratory and lecture course in advanced botany is offered, covering a general survey of the plant

kingdom, ecology and experimental physiology. 5 hours. By conference at convenience of instructor and student.

4. **Advanst Botany.** A continuation of Course 3. 5 hours.

5. **Advanst Botany.** A continuation of Courses 3 and 4. 5 hours.

7. **Bacteriology.** A laboratory and lecture course in practical bacteriology, including the preparation of culture media, the cultivation of bacteria, and the determination of specific forms. 5 hours. By conference at convenience of instructor and student.

8. **Bacteriology.** A continuation of Course 7. 5 hours.

9. **Bacteriology.** A continuation of Courses 7 and 8. 5 hours.

Zoology.

2. **Invertebrate Morfology.** Graduate College. Open to mature Senior College students. The Morfology and the Natural History of the invertebrates with particular reference to the Protozoans, Porifera, and Celenterata. 5 hours. By conference at convenience of instructor and student.

3. **Invertebrate Morfology.** Continues Course 2. A study of the Morfology of the Invertebrates and the beginning of the study of the Morfology and Natural History of the Vertebrates. 5 hrs.

4. **Vertebrate Morfology.** A course dealing with cordates. 5 hours.

FYSICAL SIENCES.

Francis Lorenzo Abbott, A.M.

Conference courses in addition to those mentioned belo may be arranged.

12. **Theory of Relativity.** This course requires a comprehensive review of the Hypotheses of the Ether and the structure of matter, which study shows the necessity for the theory of Rela-

tivity. A detailed outline of the course may be obtained from the Dean of the Graduate College, or from the head of the department. By conference. Any term. Mr. Abbott.

13. **History and Methods of Physics Teaching.** Much of this course must be original work. By conference. Any term. Mr. Abbott.

GEOLOGY, PHYSIOGRAPHY, AND GEOGRAPHY.

George A. Barker, M.S.

15. **Plant Geography.** A course based on Schimper's plant geography and Warming's ecology of plants. A thorough knowledge of botany is presupposed in this course. Fall Term.

16. **Animal Geography.** At least one course in general zoology is recommended before taking this course. It is largely based on the animal realms which Wallace first worked out, and is designed to bring out the effect of geographic barriers like oceans, mountains, and deserts. Winter Term.

17. **Social Geography of the United States.** A course largely based on the material of the last census. Interstate and foreign immigration, the distribution of the negro and his relative decrease, and the social increase of the population of Colorado will be some topics treated. Spring Term.

21. **Climatology.** An intensive study of the underlying forces of climate with especial emphasis upon the climate of the United States and Colorado. Summer Term.

Geology.

2. **Petrology.** The investigation of rocks to determine their mineralogical composition. It is recommended that the pupil have some knowledge of physics and chemistry and also some knowledge of microscopic biology. In addition to the gross study of minerals a large collection of typical rock sections will be examined with the microscope. This is largely a laboratory course. Fall Term.

MYTHOLOGY.

James H. Hays, A.B., A.M.

1. This course presupposes a knowledge of the mythology of Greece and Scandinavia, and makes a careful comparison of these with the mythology of the Jews, the Germans, English, Irish and other primitive European peoples. 5 hours. Any term.

LATIN.

James H. Hays, A.B., A.M.

1. (a) A study of best methods in Latin teaching with selected material for illustration.

(b) Investigation of present situation of Latin in secondary schools and reasons for the same.

(c) Methods of assistance in the difficulties of inflection, vocabulary, syntax and Latin word order. Any term. 5 hours.

MATHEMATICS.

George William Finley, B.S.

The courses in mathematics are conducted with a view to imparting such knowledge and training as shall be of benefit, not only to those who wish to specialize along this line, but to those who wish to prepare for general teaching as well. Special attention is given to the practical application of the subjects taught so as to link them as closely as possible to the real life of the students. The work is always kept abreast of the newer developments in methods, and students are given an opportunity to observe the workings in the classroom and thus gain a real knowledge of them.

4. **Analytic Geometry.** Junior College. Open to Senior and Graduate College students. This course opens up to the student, in a small way, the great field of higher mathematics. It gives him a broader outlook than he has had before and thus gives him new power. It covers the work as outlined in such texts as Smith and Gale's Analytic Geometry. Fall and Summer Terms.

Mr. Finley.

5. **Differential and Integral Calculus.** Senior College. Open to Graduate College students. This course gives an introduction to the powerful subject of the Calculus. While care is taken to see that the formal side of the subject is thoroly masterd, the course is strengthend by many problems brought in from geometry, fysics, and mecanics. Fall and Summer Terms. Mr. Finley.

6. **Differential and Integral Calculus.** A continuation of Course 5. Winter Term. Mr. Finley.

7. **Differential and Integral Calculus.** A continuation of Course 6. Spring Term. Mr. Finley.

8. **Methods in Arithmetic.** Junior College. Open to Senior and Graduate College students. This course wil develop the curriculum of arithmetic in the elementary scool genetically. The subject-matter chosen for use wil be selected for its social valu with a view to enriching the experience of the pupil. It wil be presented in a sycological rather than logical form. A great deal of apparatus wil be used, and laboratory work wil be the rule. Visits wil be made to shops, stores, lumber yards, houses in proces of erection, banks, courthouses, etc. Every term.

Mr. Finley, regular scool year.
Mr. Cash, Summer, 1915.

9. **Elementary Algebra—Teachers' Course.** Senior College. Open to Graduate College students. The work here consists of a thoro review of the principles of algebra and a discussion of the progres that has been made in methods of teaching the subject in recent years. Emfasis is placed upon the practical appli-cations of algebra. Summer Term. Mr. Hill.

10. **Plane Geometry—Teachers' Course.** Senior College. Open to Graduate College students. This course is givn for those who wish to kno the latest developments in methods of teaching geometry. It also includes a review of the essentials of the subject. Summer Term. Mr. Hill.

9. **The Teaching of Secondary Mathematics.** Senior College. Open to Graduate College students. It is the plan to take up in

this course a study of the more recent problems that have arisen with regard to the teaching of secondary mathematics. Problem material, order of topic in each subject, the order of the subjects in the course, the simultaneous teaching of algebra and geometry, the laboratory method; these and similar topics of interest to the teacher of high school mathematics are discussed at length. Winter Term. Mr. Finley.

11. **Descriptive Geometry.** Senior College. Open to Graduate College students. This course is planned especially for those interested in mechanical and architectural drawing. It takes up the problems arising from the study of the projections of points, lines, planes and solids. Spring Term. Mr. Finley.

12. **Spherical Trigonometry.** Formulas relating to the right triangle. Napier's rules, solution of right triangles; spherical triangles in general; solutions of examples, with applications to the celestial sphere. Any term. Mr. Finley.

13. **Advanced Calculus.** A continuation of the work begun in courses 5, 6, and 7 with special attention to applications in physics and mechanics. Any term. Mr. Finley.

SOCIOLOGY AND ECONOMICS.

Gurdon Ransom Miller, Ph.B., A.M.

4. **Social Theory.** Senior College. Open to Graduate College students. A history of Sociological theory; a comparative study of modern social theory, and application of the same in pedagogical practice. 2 hours. Fall Term. Mr. Miller.

5. **Applied Sociology.** Senior College. Open to Graduate College students. A study of modern social organization; purposive social work; social correctives; the school as an organization for social betterment; and thus for self-betterment. 2 hours. Winter Term. Mr. Miller.

6. **Social Adjustment.** Senior College. Open to Graduate College students. Effect of modern economic changes on society

and the school; adjustment of the school to the new conditions; industrial education; and its effect on general social adjustment. 2 hours. *Spring Term. Mr. Miller.

8. Social Insurance. Senior College. Open to Graduate College students. A study of social insurance, its development and social results in European countries, Australia, and New Zealand, and its progress in the United States since 1912. Winter Term. Mr. Miller.

9. Social Economics. Senior College. Open to Graduate College students. Labor problems and economic organization; labor unions and legislation; workingmen's insurance; corporations and public ownership; socialism; taxation. 3 hours. Spring Term. Mr. Miller.

20. The Consumption of Wealth. An advanced course in Social Economics; a constructive analysis of the modern tendency to subject the consumption of wealth to scientific treatment, emphasizing the human costs of production versus the human utilities of scientific consumption; a human valuation. Open to students who have taken not less than two terms of work in Sociology or Economics. Alternates with Course 9, Spring Term. Mr. Miller.

HISTORY.

Edwin B. Smith, B.S.

15. American Constitutional Development. An intensive study of the origin and development of the Constitution; the changes in and the construction of the Constitution in the different periods; and the present attitude toward it. Any term.

Mr. Smith.

16. Research in History. Other work in the department may be arranged to be conducted by conference. The following subjects are suggested for courses that may be profitably followed:

1. The Establishment of American Government in Colorado.
2. History of the Movement for Shorter Hours.
3. Humanitarian Movements in the United States in the last Century.
4. Early Public Land System in the United States.

5. **The Frontier of the Sixties.**

6. **Erly Effects of the Monroe Doctrine on Europe.**

Any term.

Mr. Smith.

4. **Western American History.** Senior College. Open to Graduate College students. The westward movement as an historical proces; the migration from the Atlantic coast into the Mississippi Valley; the Trans-Mississippi West; the history of Colorado as a typical section. Special emfasis wil be placed on the social and economic conditions. 3 hours. Spring Term. Mr. Smith.

10. **History of Industry.** Senior College. Open to Graduate College students. A survey of the development of industry to the Industrial Revolution; the industrial history of Great Britain since the Revolution; industry in the United States during the several stages of its development; the effect of industry upon our national development; present industrial problems, including the labor movement and industrial combinations. 5 hours. Winter Term. Mr. Smith.

11. **History of Commerce.** Senior College. Open to Graduate College students. A survey of commerce from its beginning; colonial commerce and its consequences to European nations; commerce in the several periods of American development; the present policy of the United States; international complications and international law applying. 5 hours. Spring and Summer Terms. Mr. Smith.

13. **The Teaching of History.** Junior College. Open to Senior and Graduate College students. The development of history instruction in scools; history as taut in scools today; methods of study, presentation, and material considered in connection with present conditions. Two hours. Spring Term. Mr. Smith.

MODERN FOREN LANGUAGES.

John Thomas Lister, A.B., Ph.B.

The courses listed in the department of Modern Foren Languages for the Graduate College ar of two classes: (a) those which ar givn in regularly sceduled classes designd especially

for undergraduate students but in which students of the Graduate College may receive credit by doing extra work; (b) those which are intended primarily for students of the Graduate College but to which mature Senior College students will be admitted, provided they can give sufficient evidence of ability to carry such courses. The work of these courses (b) is done outside of class by conference with the instructor.

German.

10. **Advanced German.** Freytag's *Soll und Haben*, and *Der Rittmeister von Alt-Rosen*, and Scheffel's *Ekkehard*. By conference. Fall and Summer Terms.

11. **Advanced German.** (Open to both Senior and Graduate College students.) Winter and Summer Terms.

12. **Advanced German.** Sudermann's works. His two novels, *Frau Sorge* and *Der Katzensteg*, and two plays *Johannes* and *Teja* will be studied and written reports made on each book. By conference. Spring and Summer Terms.

13. **Advanced German.** Lessing's *Nathan der Weise*. 2 hours. Winter Term.

14. **Advanced German.** Hauptmann's works. 2 hours. Spring Term.

French.

7. **Advanced French.** Corneille's works, *Le Cid*, *Horace*, and *Polyeucte*. By conference. Any term.

8. **Advanced French.** Racine's works, *Athalie*, *Esther*, and *Iphigénie*. By conference. Any term.

9. **Advanced French.** Molière's works, *L'Avare*, *Le Misanthrope*, *Tartuffe*. By conference. Any term.

Spanish.

5. **Intermediate Spanish.** Prerequisite, Course 4 or equivalent. Echegaray's *Ó Locura Ó Sanidad*, Calderon's *La Vida es Sueno*. Winter Term. 3 hours.

6. **Intermediate Spanish.** Prerequisite, Course 5 or equivalent. Cervantes' *Don Quijote*. Spring Term. 3 hours.

LITERATURE AND ENGLISH.

Ethan Allen Cross, A.B., Ph.M.

Courses in Composition.

2. **Intermediate Composition.** Junior, Senior, or Graduate College. A practis course in riting somewhat more advanst than the composition work in English 1. 3 hours. Winter Term.

3. **Advanst Composition.** Senior College. Open to Graduate College students. Students ar not admitted to this course until they hav shown some skil in riting. The work of the course is chiefly in the narrativ form. Students who wish to try story riting under the direction of an instructor wil find an opportunity in this clas. Three hours. Spring Term.

Courses in Methods.

6. **The Teaching of English in the High Scool.** Graduate College, but open to Senior College students majoring in English. Three hours. Spring Term.

Courses in Literature.

7. **The Epic.** Open to Senior College and Graduate students. This course consists of a study of the two great Greek epics—*The Iliad* and *The Odyssey*. Students ar not askt to do any additional reading during the summer term, but outlines of study for future reference, covering other national epics, wil be furnisht to the graduate students in the clas. The purpose of the course is to furnish teachers in the elementary scools with the materials for story telling and literature studies embracing the hero tales from Greek literature. Five hours.

11. **Lyric Poetry.** Senior College. Open to Graduate College students. A preliminary study of the tecnic of poetry, an examination of a number of typical poems to determine form and theme, and finally the application of the knolege of tecnic in the reading of English lyric poetry from the cavalier poets thru Dryden and Burns to Wordsworth. Five hours. Fall Term.

12. **Nineteenth Century Poetry.** Senior College. Open to Graduate College students. A study of English poetry from Wordsworth to Tennyson, including Coleridge, Byron, Shelley, Keats, and the lesser writers from 1798 to 1832. Five hours. Winter Term. (Not givn until 1916-17.)

13. **Victorian Poetry.** Senior College. Open to Graduate College students. Tennyson and Browning and the general choir of English poets from 1832-1900. Five hours. Spring Term. (Not givn until 1916-17.)

14. **Nineteenth Century Prose.** Graduate College. Five hours. Fall Term.

15. **Modern Plays.** Senior College. Open to Graduate College students. Reading and clas discussion of from twelv to twenty plays that best represent the characteristic thought-currents and the dramatic structure of our time. Five hours. Winter Term.

16. **The Novel.** Senior College. Open to Graduate College students. The development, tecnic, and significance of the novel. Five hours. Spring Term.

17. **The Short Story.** Senior College. Open to Graduate College students. A study of the construction and the meaning of the short story as a form of literary art, including a reading of a number of representativ stories of today. Five hours. Fall Term.

18. **The Essay.** Senior College. Open to Graduate College students. A study of the familiar essay for the purpose of determining the nature and form of this delightful faze of literary

composition. The method in this course is similar to that pursued in the short-story course; namely, a reading of a number of typical essays as laboratory material for a study of tecnic and theme. Five hours. Spring Term.

19. **Shakespeare's Plays, The Comedies.** Senior College. Open to Graduate College students. A careful reading of the comedies of Shakespeare. The purpose of the three courses 19, 20, and 21 is to familiarize students who expect to become teachers of English with all of Shakespeare. Five hours. Winter Term. (Not givn until 1916-17.)

20. **Shakespeare's Plays, The Chronicle Plays.** Senior College. Open to Graduate College students. This course is a continuation of Course 19. Five hours. Winter Term.

21. **Shakespeare's Plays, The Tragedies.** Senior College. Open to Graduate College students. This course completes the series begun with 19. Five hours. Spring Term. (Not givn until 1916-17.)

22. **Elizabethan Drama Exclusiv of Shakespeare.** Senior College. Open to Graduate College students. A knolege of the dramatic literature of the erly Seventeenth Century is incomplete without an acquaintance with the contemporaries and successors of Shakespeare from about 1585 to the closing of the theaters in 1642. The chief of these dramatists with one or more of the typical plays of each ar studied in this course. Five hours. Spring Term.

30. **Conference Course.** This course number is intended to cover special study in collecting materials for the thesis required for the degree of Master of Arts in the department of English. The assignments wil of necessity be made individually to each student preparing a thesis. Any term.

MUSIC

John Clark Kendel, A.B.

17. **Modern Composers.** Junior College. Open to Senior and Graduate College students. The lives of the musicians from

Wagner to the present day ar studied. Programs of their music ar givn by members of the clas and the talking machines. The work is pland to sho the modern trend in music and to make the students familiar with the compositions of the modern riters. Spring Term. Mr. Kendel.

18. Composition and Analysis. Senior College. Open to Graduate College students. Primary forms, including the minuet, scherzo, march, etc. Simple and elaborate accompaniments. Analysis of compositions of primary forms principally from Mendelssohn and Beethoven. Fall Term. Mr. Kendel.

19. Interpretation and Study of Standard Operas. Senior College. Open to Graduate College students. Operas of the classical and modern scools ar studied, thru the use of the talking machine, and their structure and music made familiar to the clas. Winter Term. Mr. Kendel.

20. Interpretation and Study of the Standard Orotorios and Symphonies. Senior College. Open to Graduate College students. The Standard Orotorios ar studied. The best known solos and coruses ar presented by members of the clas or by the talking machine, and the content of the work is studied with the hope of catching the spirit of the composer. The Symphonies of Haydn, Mozart, Beethoven, Schubert, Schumann, and other riters of the classical and modern scools ar presented to the clas. Spring Term. Mr. Kendel.

21. Reserch. Senior College. Open to Graduate College students. A comparativ study of the work done in the public scools in cities of different classes. A similar study of the work done in the normal scools and teachers' colleges of the varius states. Any term. Mr. Kendel.

READING AND INTERPRETATION.

Frances Tobey, B.S.

6. Dramatic Interpretation. Second year. Junior College. Open to Senior and Graduate College students. (Open to those who hav completed Courses 1, 2, 5.) A study of the sources of

dramatic effect. The analysis and the presentation upon the campus of a play (probably Tennyson's **Foresters: Robin Hood and Maid Marian**). Summer and Winter Terms

8. **Art Criteria.** Senior College. Open to Graduate College students. The laws of art in oratory. 5 hours. Fall Term.

9. **Literary Interpretation.** Senior College. Open to Graduate College students. The lyric, the ballad, the dramatic monolog, dramatic narrativ, the oration, the drama. 5 hours. Winter Term.

10. **Oral Expression in the High Scool.** Senior College. Open to Graduate College students. High scool methods. 3 hours. Spring Term.

15. **The Festival.** Junior College. Open to Senior and Graduate College students. Reserch and original work in the organization of significant festival programs. History, sociology, symbolism, the varius arts, etc., afford resource. The immediate end of the course wil be a summer scool festival, directed and shaped by the clas. Spring and Winter Terms.

16. **The Greek Drama.** A study of the great Greek dramatists, with reference to literary and dramatic qualities, and to social and filosophical attitudes. Practis in oral interpretation. The presentation of a Greek drama on the campus. Summer Term.

FYSICAL EDUCATION.

Royce Reed Long, A.B.

23. **Reserch in Fysical Education.** Qualified Senior or Graduate College students may elect some subject for reserch in Fysical Education. The folloing subjects ar suggested, but others, depending upon the student's interests and available materials for study, may be chosen.

(1) The status of fysical education in the scools of Colorado, with a proposed plan for improvement.

(2) The playground and recreation movement; rise, growth, and present status.

(3) Recreational survey of a selected community with suggested plan for improvement.

(4) A study of the playground games of different age periods, sexes, races.

(5) Educational athletics. Plan for a selected county or city school system.

Any term by arrangement. Three or more hours, according to the piece of work accomplished. Mr. Long.

HYGIENE.

George E. Freeland, A.B., A.M.

The Department of Hygiene has been organized to meet a growing demand for work of this nature. Its intention is to stress everything that pertains to health in both the school and in life. We believe that every student who goes to school anywhere, either in the grades, high school, or in college should emerge from the training he receives with better health habits, both physically and mentally, than when he entered.

1. **School Hygiene and the Hygiene of Instruction.** For the summer term we have combined the two courses that are given in the regular catalog under the above headings. We intend to consider the most interesting sections of each course. The many factors in school life and equipment that affect health, and means of making these better in the average school, as well as possibilities in schools with more means will be taken up in the first half of the work. In the Hygiene of Instruction, methods of teaching every subject in the elementary school curriculum from the health point of view will be developed. The hygiene and efficiency of work, what the human machine is capable of, and how to get the most from it, are central points. Winter and Summer Terms.

Mr. Freeland.

3. **Public Hygiene.** Senior College. Open to Graduate College students. Lectures, recitations, inspection trips, references, assignments, and reports. A course covering the main facts relative to the causes and dissemination of diseases, and the control or prevention of diseases through community, municipal, state, national, and international co-operation. Vital statistics and brief his-

tory of chief epidemic diseases; garbage and sewage disposal; water supply; milk, food, air, and insects as these relate to the public health; quarantine, disinfection, inspection; the organization, function, and powers of health authorities will form the subject matter of the course. Spring Term. 3 hours. M. W. F. at 9:05. Mr. Long.

4. Sanitation. The principles of Sanitary Science. The causes of diseases. Health and diseases in terms of general biology. Infection and contagion. The germ-theory of diseases. Dirt and diseases. Vehicles of diseases. Air, water, foods (milk, etc.) as vehicles of diseases. Animals as carriers of diseases (housefly, mosquito, etc.). The prevention of diseases. Infectious diseases preventable. Summer Term. Mr. Beardsley.

PRACTICAL ARTS.

Samuel Milo Hadden, A.M., Dean

Under this head are included the following: Industrial art, printing, bookbinding, domestic science, household art, fine and applied art, commercial arts, and agriculture.

Industrial Art.

17. Vocational Education. For a full description of this course see Department of Education.

23. Seminar. This work is offered primarily for those who are interested in the solution of some particular problem or problems in the field of practical arts as applied to education. Special periods will be selected for the presentation and discussion of data gathered. By conference. Any term. Mr. Hadden.

4. Pre-Vocational Education. Senior College. Open to Graduate College students. The course is divided into two definite sections:

First. The fundamental basis for pre-vocational work, the movement from the standpoint of special governmental and state schools, rural schools, state movements, including vocational clubs in relation to community interests, with a type program for the furthering of the movement from state and community standpoints.

Second. The course of study and special methods of pre-vocational work in city school systems. The best courses in the different American and European cities will be considered with a summary of what may constitute a typical pre-vocational course for a Western city, as based upon the demands and needs for such work. Summer and Winter Term.

Mr. Hadden and Mr. Freeland.

7. Industrial Art in Secondary and Trade Schools. Senior College. Open to Graduate College students. In this course the following topics will be discussed: Industrial art, secondary and trade schools in foreign countries, the movement in the United States. The course also includes a brief bibliography of articles that each student has read and reported on in class. 3 hours. Winter Term.

Mr. McCunniff.

16. Historic Furniture. Senior College. Open to Graduate College students. Lectures illustrated by lantern slides and picture showing the development of and characteristics fundamental in the Netherlands, England, and early American period. 1 hour. Winter Term.

Mr. Hadden.

14. Care and Management. Junior College. Open to Senior and Graduate College students. This course is designed to furnish the student a thorough knowledge of the care of both hand and power equipment, such as the filing and grinding of tools, and the changing and adjustment of power tools to do the different kinds of work which they are intended to do. The arrangement of the woodworking room, its care and management will be dealt with from the standpoint of efficiency and neatness. Any term.

Mr. Foulk.

11. Advanced Mechanical Drawing. Senior College. Open to Graduate College students. This course includes intersections, the cycloid, hypercycloid, and involute curves; their application to spur and bevel gear drawing; developments, advanced projections, lettering, and line shading. 5 hours. Fall and Winter Terms. Prerequisite: Course 10.

Mr. Hadden, Fall Term.

Mr. McCunniff, Winter Term.

13. **Advanst Arcitectoral Drawing.** Senior College. Open to Graduate College students. This course is a continuation of Course 12, and deals with the drawing of plans for cement, brick, and stone structures, culminating in a complete set of plans and specifications for a residence or a public bilding of moderate cost. 5 hours. Winter Term. Prerequisite: Courses 10 and 12.

Mr. Hadden and Mr. McCunniff.

18. **Advanst Machine Design.** Senior College. Open to Graduate College students. A study is made of the transmission of motion by belt and pulley, and gears and cams. Such curves as the involute, cycloid, and epicycloid ar applied in the designing of gears. Sketches, detail, and assembly drawings ar made of intricate pieces of machinery, such as the globe valv, vise, hed stock lathe, and such shop machinery as lathes, band saws, motors, and gas and steam engines. 5 hours. On demand. Winter Term.

Mr. McCunniff.

24. **Constructiv Detail Drawing.** Senior College. Open to Graduate College students. The purpose of this course is to prepare the student to draw in detail the different parts of a bilding or articles to be constructed of wood, stone, iron, brick, or other materials. The subject of proportion, dimension, and strength and the method of preparing and assembling will be delt with in connection with the making of the detail drawing. The terminology in connection with this course will be givn full consideration. 5 hours. Spring Term.

Mr. Foulk.

20. **Pattern Making.** Senior College. Open to Graduate College students. The topics discust in this course will consist of the folloing: Woods best suited for varius kinds of work, glu, varnish, shellac, dowels, draft, shrinkage and finish. The practical work will consist of both hollo castings, bilding up, and segment work. 5 hours. On demand.

Mr. Foulk.

22. **Bilding Construction.** Senior College. Open to Graduate College students. The purpose of this course is to giv the student a knolege of the different parts of a bilding and the best methods of fitting and assembling these parts. The work in this

course will be executed on a reduced scale but in a manner that will convey the full purpose. The use of the steel square will be fully demonstrated in finding of lengths and cuts, and also all of its uses brought out. Practical problems will be worked out by the use of the square and compass. 5 hours. Spring Term.

Mr. Foulk.

9. Advanst Art Metal. Senior College. Open to Graduate College students. This course should be taken after Course 8, since it deals with more advanst ideas in metal work, and includes work in bras, copper, bronze, and German silver. This course deals largely with the designing, decorating, and artistic coloring of metals. It also includes a short course in the chemistry of metal colors, and the use of lacers for protection. Simple artistic jewelry is made the basis for the constructiv work in this course. 5 hours. Spring Term. Mr. Hadden, Mr. Isaacs.

Fine and Applied Arts.

12. Antique. Senior College. Open to Graduate College students. Charcoal drawing from antique casts in outline and in light and shade. An intensiv course requiring accurate drawing and close study of values. 5 hours. Winter Term. Mr. Isaacs.

13. Commercial Design. Senior College. Open to Graduate College students. Design considered in its relation to advertising art. Posters, cover designs, and varius advertising problems ar executed by the student. Lectures on the appreciation of newspaper, magazine, and book illustration. Drawing for reproduction. A course with direct bearing on life and industry, and essential in every course of study. 5 hours. Summer and Fall Terms. Mr. Isaacs.

14. Drawing from Life. Senior College. Open to Graduate College students. Study from the costumed model. The student is allowd to choose the medium to be used. Offerd for classes of six or more students. 5 hours. Winter Term. Mr. Isaacs.

15. Methods in Art Supervision. Senior College. Open to Graduate College students. The supervision of art education in city systems; the planning of a course of study; methods of

teaching; discussions on the modern tendency in art education; rural school problems. 5 hours. Summer and Spring Terms.

Mr. Isaacs.

16. Laboratory Drawing. Senior College. Open to Graduate College students. The theory and practice of diagrammatic drawing; laboratory problems involving the use of the microscope; perspective; discussions on the viewpoint of the scientist as contrasted with that of the artist. 2 hours. Any term. Mr. Isaacs.

18. Advanced Oil Painting. This work may be done outside of regular classes to suit the convenience of the student. Regular criticism will be given by the instructor in charge.

The student must submit satisfactory evidence of having a good knowledge of drawing and values, and must have done one term's work, or its equivalent, in oil painting.

Large studies from complicated still life groups, or from life, showing reasonably correct color values, will be required.

Advanced students who have not had one term's work in oil painting may take this work for Senior College credit. Any term.

Mr. Isaacs.

17. Color Composition. An advanced study of color composition in oil or water color. Arrangements of form and color for decorative and pictorial effect. The student will be assigned subjects and will meet with the instructor for criticism at appointed conferences. Any term.

Mr. Isaacs.

Home Economics.

7. Dietary Problems. Junior College. Open to Senior and Graduate College students. An application of the principles of human nutrition. A study is made of the relative value of the various articles of food as energy givers and body builders, and their relative cost. Practical comparison is made of nutritive values of the common foods by computing, preparing and serving meals at specific costs in which specified nutrients are furnished. Prerequisite, at least one year's work in the study and cookery of foods.

Two periods on Tuesday, Wednesday, and Friday will be devoted to laboratory work. One period on Monday and Thursday to lectures and reports. Winter and Summer Terms.

Miss Marshall.

8. Methods of Teaching Domestic Science. Junior College. Open to Senior and Graduate College students. A study of the problems of teaching Domestic Science in the elementary and high schools. It includes the arrangement of courses of study for schools, methods of presenting the subject-matter, planning of equipment, and laboratory management. Text books are reviewed and lesson plans discussed. Spring and Summer Terms.

Miss Marshall.

20. Seminar—Domestic Science. Anyone wishing to work out some special problem, or do research work along a given line in Home Economics will be given an opportunity to do so, provided she has previously had a thorough course in this field of work, and is mature enough. Time for the work will be arranged with the individual student. Any term.

Miss Marshall.

10. Dietetics. Senior College. Open to Graduate College students. A course in the fundamental principles of dietetics and preparation of practical dietaries, special emphasis being laid upon diet in diseases. Prerequisite: General and Food Chemistry. D. S. 1 and 2. Any term.

Miss Marshall.

12. Experimental Cookery. Senior College. Open to Graduate College students. An experimental study of the various food products and the changes produced by cooking. Qualitative and quantitative study of recipes. Effects produced by various cooking appliances. 5 hours. Any term.

Miss Marshall.

13. A Continuation of Course 12. 5 hours. Any term.

Miss Marshall.

14. Home Economics Education. Senior College. Open to Graduate College students. A history of the Home Economics movement; study of different types of schools; purposes of work in the schools and the value of it. Content of Home Economics

and its relation to other subjects of the curriculum. Study of equipment, courses of study, and methods of conducting classes in high schools and colleges. 5 hours. Spring Term.

Miss Marshall.

15. **Demonstrations.** Senior College. Open to Graduate College students. Each girl will be given an opportunity to demonstrate some process of cooking before the entire class. Elective. 2 hours. Spring Term. Prerequisite: D. S. 1 and 2 or 1 and 3 or equivalent.

Miss Marshall.

Household Art.

8. **Methods of Teaching Household Art.** The following topics are treated: Household Art in relation to the new movements in Education, types of schools and their relation to the subject-matter of Household Art, relation between Home Economics and Household Art, study of various problems and specific work in the subject-matter of Household Art. Detailed study of courses of study for elementary and high schools with work on unit lesson plans. Required of Household Art and Domestic Science majors. 2 hours. Spring Term.

Miss Kissick.

9. **Textils.** Junior College. Open to Senior and Graduate College students. The course covers the following work: (a) Identification of fibers and fabrics; (b) Construction of weaves; (c) Methods of manufacture of yarns and fabrics; (d) Physical and chemical analysis of fibers and fabrics. The work consists of laboratory and lecture periods. Prerequisite: Chemistry. Fall Term.

Miss Kissick.

11. **Advanced Textils.** Senior College. Open to Graduate College students. Fibers are identified by means of the microscope; fibers and fabrics treated chemically for: identification tests, examination of content and adulteration, and strength; fabrics tested for laundering qualities and dyeing qualifications. Prerequisite: Textils. 5 hours. Spring Term.

Miss Kissick.

12. **Economics of Textile Industries.** Senior College. Open to Graduate College students. A study of the trade conditions and

living conditions, particularly of the women and children working in the textil industries, will be considerd. Specal problems of individual interests will be assignd for further investigation. 5 hours. Any term. Miss Kissick.

14. **Advanst Dressmaking.** Senior College. Open to Graduate College students. Practis is givn in this course for practical application of principles of art and design and construction in work on afternoon and evening gowns. Lighter materials ar used, such as chiffon and silk, giving detail in the handling of such textiles. 5 hours. Any term. Miss Kissick.

15. **Drafting.** Senior College. Open to Graduate College students. Drafting systems capable of being used for scools and colleges will be considerd. Actual practis will be givn to the end that the student may become free with the use of patterns. 5 hours. Any term. Miss Kissick.

Commercial Arts.

41. **Graduate Seminar.** This course wil consist of independent investigations in the field of busines administration. Such topics as the folloing will be assignd for report and discussion: Commercial Education in the United States; Commercial Education in Germany; Railway Transportation Problems; Combinations of Capital; Present Tendencies in High Scool Curricula. Any term. Mr. Shultes and others.

Agriculture.

10. **Agricultural Seminar.** Discussion of varius fazes of agricultural investigations. Papers on assignd topics ar presented for discussion by the clas. Prerequisite: General Agriculture. 2 hours. Fall, Winter, and Spring Terms. Mr. Withington.

17. **Entomology Seminar.** Selected literature and special field investigations of insect problems to be studied and presented for discussion by the clas. Prerequisite: Courses 15 and 16. 3 hours. Fall, Winter, and Spring Terms. Mr. Withington.

