



TEACHERS COLLEGE, SOUTHERN FRONT



Columbia University  
in the City of New York

## TEACHERS COLLEGE

ANNOUNCEMENT OF TEACHERS COLLEGE

SCHOOL OF EDUCATION

SCHOOL OF PRACTICAL ARTS

1929-1930

PUBLISHED BY

Teachers College, Columbia University

525 WEST 120TH STREET

NEW YORK CITY

**Education 224H—Measurements and tests in health education. 3 points.** Professors WOOD and ROWELL and specialists in tests  
Th., 4:10-6, Spring Session. Room 407 T. C. Main Hall

Conferences, lectures, reports, and practical experience in construction and use of test material.

This course is planned for advanced students. Previous or parallel study of educational statistics and measurements is advantageous but not required. The course will review measurements in general education and in special subject fields. Students will study the new program of tests and measurements of health status, health habits, health attitudes and health knowledge which are being conducted by the American Child Health Association. Opportunity will be given to students to construct educational tests adapted to varying situations, and to try these out practically.

**Education 294A—Foundations of health and physical education. 3 points.** Professor WOOD  
M. and W. at 2:10, Spring Session. Room 164 Thompson Hall

This course deals with source materials underlying the fields of health education, health service and physical education. Students will become acquainted with foundations in history and literature; in science, psychology, sociology, general education; and in the technical backgrounds of health and physical education.

**Education 393E-394E—Administration of health service and health education. 3 points each Session.** Professors WOOD and ROWELL  
Lectures and conference hour, M. at 10; other hours to be arranged. Room 252 Thompson Hall

This course is arranged for graduate students who wish to qualify for positions as directors and administrative heads of city and state systems of health work and education in schools. It includes observation of health education and health work in the schools of New York and neighboring cities; conferences and discussions following carefully planned programs of observation; and preparation of the types of reports and plans which would be expected from those occupying administrative positions in this field.

**Health Education 207—Field work. 4 points (207a, 2 points).** Professor WOOD and Miss PHELAN  
Hours to be arranged, Winter or Spring Session

Open only to advanced students. Work will be arranged according to interest of students in particular fields of health education.

**Physical Education 127-128—Health examinations and anthropometry. 2 points each Session.** See under Physical Education

#### *Special Courses for Teachers of Physically Handicapped Children*

**Education 123K-124K—Teaching lip reading to deafened children. 2 points each Session.** Professor ROWELL and representatives of The New York League for the Hard of Hearing  
Th., 4:10-6. Room 330 Macy Hall. Ten students required

This course is given in cooperation with the New York League for the Hard of Hearing. The topics include a brief statement of historic background; psychology of the deafened child; phonetics; readjustment problems; prevention of deafness; and vocational guidance for the hard of hearing. The major portion of the course will consist of theory and practice of teaching lip reading.

It is recommended that students planning to teach lip reading have a background of psychology of the handicapped child, phonetics, and speech correction.

**Education 123M-124M—Supervision and teaching of sight saving classes. 2 points each Session.** Professor ROWELL and representatives of the National Society for the Prevention of Blindness  
S., 10-11:50. Room 113 Lincoln School. Ten students required

This course is given in cooperation with the National Society for the Prevention of Blindness representing the National Health Council.

The topics will include organization and administration of classes; methods of adapting the regular curriculum; ocular problems, including anatomy, physiology, and hygiene of the eye, and a study of common eye diseases and refractive errors; observation in a sight saving class and clinical work in eye hospitals.

**Education 123O—Teaching in fresh air classes. 2 points.** Professor ROWELL, representatives of the National Tuberculosis Association, and special lecturers  
Tu., 4:10-6, Winter Session. Room 130 Macy Hall

This course is given in cooperation with the National Tuberculosis Association representing the National Health Council.

This course will consider open-air classes and schools, and preventoria. Health camps and summer vacation camps will be dealt with briefly. The main topics will be: types of children selected for these special classes; psychology of handicapped children; physical surroundings and equipment for special classes; the schedule and teaching methods; children who fail to improve; cooperation of the home and the special class; special problems.

**Education 224K—Problems of the hard of hearing and the deaf. 2 points.** Professors ROWELL, PINTNER, GATES, KITSON, McDOWELL, and representatives of The New York League for the Hard of Hearing  
Tu., 4:10-6, Spring Session. Room 164 Thompson Hall

This course will consist of three groups of courses:

(a) Psychology, mental testing, surveys, physical traits of the deafened, prevention of deafness. Professors PINTNER and ROWELL.

(b) Vocational guidance for the deafened. Professor KITSON and representatives of The New York League for the Hard of Hearing.

(c) Speech training and correction for the deafened. Professor McDOWELL and representatives of The New York League for the Hard of Hearing.

This course is recommended for supervisors of special classes and for teachers of the hard of hearing who wish to supplement the course in teaching of lip reading (Education 123K-124K).

**Education 323R-324R—Research in education of physically handicapped children. 3 points each Session.** Professor ROWELL and other members of the staff

Hours to be arranged. No lectures

This course is intended for specially qualified persons who wish to study the educational problems of hard of hearing, deaf, semi-blind, pretubercular, preventorium, cardiac, and other types of physically handicapped children for whom special educational provision must be made.

The student will work in cooperation with the members of the staff of Teachers College and of the National Health Council who can best advise on the problems chosen.

There are no prerequisites, but students must receive permission of the instructor in order to register for this course.

### COURSES FOR TEACHERS AND SUPERVISORS OF PHYSICAL EDUCATION

In major programs in Physical Education for degrees and diplomas, there are many possible combinations of technical and education courses in Physical Education, Health Education, Practical Science and general education which may be selected with reference to the interest of the individual student. All programs are subject to the general requirements for degrees (pp. 5-8), the special requirements for major programs in Practical Arts (p. 151), and must be approved by the advisers. Graduate students without satisfactory professional training (usually an undergraduate major is satisfactory) before entering Teachers Col-

lege should supplement the year required for the Master's degree with two summer sessions at the University to bring their training to the standard required for the diploma in teaching physical education. Such students should consult the advisers in Physical Education when selecting summer courses to meet this requirement. However, the departmental officers reserve the right to determine by mental and physical tests the technical fitness of students for the purpose of selecting those well qualified for professional training in physical education.

The technical courses in Physical Education are all more or less professionalized with reference to the needs of teachers and other workers in educational institutions. Many non-professional courses were formerly included in the four-year undergraduate curriculum which is no longer offered. The courses now offered aim to give the graduates of colleges, normal schools, and technical schools the preparation needed for educational work.

Courses in the 99-199 group are adapted to numerous graduates who began specialization late in their undergraduate curriculum, while the courses above 200 offer more advanced work for students who have completed as undergraduates here or elsewhere courses equivalent to those below 200.

#### Major Programs in Physical Education

**Diplomas**—Teachers College diplomas may be awarded, under the rules concerning diplomas, to students who complete with high standing the following programs. At least two years of successful experience in teaching, one of which must have been in the field of the program selected, is required.

**Diploma: Teacher of Physical Education.** Professors WILLIAMS and BROWNELL and Miss SCHWENDENER, advisers

Prerequisite: General courses in biology, chemistry or physics.

Required: Physical Education 105-106, 139 to 148 group of courses (women), or 153 to 158 group of courses (men), 167; Education 193F-194F, 293A, 294A, general education courses.

Recommended: Courses in hygiene, elective courses in physical education, art and music appreciation, speech.

**Diploma: Supervisor of Physical Education.** Professors WILLIAMS and BROWNELL, advisers

Special admission requirement: Open only to candidates for higher degrees. Successful experience in teaching and familiarity with the courses required for the program in the Teaching of Physical Education.

Required: Advanced courses dealing with the supervision of instruction and administration of physical education.

**Diploma: Teacher of Health and Physical Education.** Professors WOOD and WILLIAMS, advisers

Prerequisite: General courses in biology and chemistry or physics and elementary courses in Physical Education listed in program for teachers of physical education.

Required: Hygiene 172, 175; Physical Education 125-126, 127-128, 139 to 148 group of courses (women), or 153 to 158 group of courses (men), 167; Education 123A, 123E-124E, 123B-124B, 293A, 294A, 193F-194F; Hygiene 101 and 104; general education courses.

**Diploma: Supervisor of Health and Physical Education.** Professors WOOD and WILLIAMS, advisers

Special admission requirement: Open only to candidates for higher degrees. Successful experience in teaching and familiarity with the introductory courses required for the program in the Teaching of Health and Physical Education (see above).

Required: Advanced courses dealing with criticism and supervision of instruction and with problems of Hygiene and Physical Education.

**Diploma: Instructor in Hygiene and Physical Education.** Professors WOOD and WILLIAMS, advisers

A diploma certifying to the Faculty's estimate of the holder's professional preparation and ability as an *Instructor in Hygiene and Physical Education* in institutions of college rank may be awarded under the general rules for Teachers College diplomas to students of Teachers College who complete beyond the Master's degree a year's program of thirty points. This program must consist of courses related to teaching hygiene and physical education in colleges; at least twenty points must be in Teachers College; and a report of a special study must be submitted.

**Diploma: Director of Community Recreation.** Professors WILLIAMS and FRETWELL, advisers

The program will be arranged in consultation with the advisers. Courses in play, recreational leadership, and other activities will be supplemented by theoretical courses. This is a program offered jointly by the School of Education and the School of Practical Arts.

#### Courses in Physical Education

##### General Courses

**Hygiene 172**—Personal and general hygiene. Professor WILLIAMS. See p. 206

**Hygiene 172x**—First aid. Professor ROWELL. See HEALTH EDUCATION

**Physical exercise for health**—The following course, Physical Training X, offers health work for women students of all departments of Teachers College.

For women who know how to swim, the Thompson Hall Pool is open Tu. and Th. from 5:10-6. Men students may arrange for equivalent work in the gymnasium in University Hall. A plunge period for men students and faculty is available in Thompson Hall Pool on Friday at 5:10.

Special extension courses in swimming, dancing and corrective gymnastics are announced in a special folder that may be obtained in Room 157 Thompson Hall

**Physical Training X1-X2**—For women. Fee for 1 point each Session but not credited

Section I: Tu. and Th. at 4:10. Room 255 Thompson Hall

Section II: M. and W. at 5:10

The work of Sections I-II is arranged with reference to the needs of mature students who wish the simpler forms of exercise. These include gymnastic exercises, games, swimming, and elementary dancing.

Section III: Individual gymnastics. Hours to be arranged with Miss SWEIGARD

Section III is a special class in individual gymnastics for those who wish to build up strength and vitality before taking the more strenuous exercise of class gymnastics, dancing or games, also for those who desire to improve their posture or to overcome such detriments to health and efficiency as may be favorably influenced by advice and exercise, e.g., fallen arches, weak and painful feet, weak abdominal muscles, indigestion, constipation, overweight, underweight, sleeplessness, poor circulation, weak heart; or for those who desire to learn exercises to do at home.

## Professional Courses in Physical Education

Physical Education 105-106—Applied anatomy. 2 points each Session.  
Professor WILLIAMS  
Tu. and Th. at 9. Room 252 Thompson Hall

This course deals with the structure of the human body and with the principles and mechanisms of bodily movements. The kinesiology of natural movements will be presented, and all essential aspects of general kinesiology. Particular attention is given to the anatomy of growth and development. Lectures, demonstrations and recitations.  
Admission to the Spring Session (106) will be permitted only for those who have completed 105 or its equivalent.

Physical Education 125-126—Applied physiology. 2 points each Session.  
Dr. BURTON-OPITZ  
Lecture, Tu. at 2:10. Room 234 Macy Hall  
Laboratory:  
Section I: Th. at 1:10  
Section II: Th. at 2:10  
Section III: Th. at 3:10. Room 251 Thompson Hall

This course deals with the fundamental facts and principles of physiology and is designed to familiarize the student through demonstrations, laboratory methods, and practical experiments with the effects of different kinds of activities upon various physiological systems of the body, with especial reference to the problems of physical education.

Physical Education 127-128—Health examinations and anthropometry. 2 points each Session. Professor ROWELL and Miss SHAIR  
Tu. and Th. at 3:10. Room 164 Thompson Hall

Students should reserve one morning hour each week for conference or observation.  
The purpose of this course is to give the student a working knowledge of the variations of the normal types of the human organism; to consider methods for determining conditions of the organs of the body. The course will include the following: recording of personal and family history; its interpretation in relation to heredity, environment and health; anthropometry; methods of making general health examinations, including special methods for ears, eyes, circulatory and respiratory systems, spine and feet.  
Students will have opportunity to study the organization and administration of the weighing and measuring program, as well as to acquire the technique essential to promote the educational values in such a program. Students will also be given the opportunity of having clinical practice in health examinations in small groups.

Physical Education 127x-128x—Health examinations. Practical work. 2 points each Session. Professor ROWELL and Mrs. MCCAULINE  
One forenoon per week to be arranged

This course is planned to provide practical work for a few students in health examinations. Students will observe and assist in physical examinations and will make statistical studies and reports of health and physical records. Students must have permission of instructors before registering.

Prerequisites: Physical Education 105-106, 127-128.

Physical Education 227-228—School health examinations. Practice. 3 points each Session. Professor ROWELL  
Hours to be arranged, one forenoon each week

An advanced course, consisting of practical work as personal assistant to the instructor. The student will assist in health examinations and study practical problems in school health administration.

Prerequisites: Physical Education 127x-128x; or exceptional experience in health examination work; or registration as a fourth-year medical student; or the degree of M.D. The instructor will approve only specially qualified students. Others should elect 127x-128x.

Physical Education 139-140—Dancing. Theory and practice. 4 points (139a-140a, 3 points; 139b-140b, 2 points) each Session. Miss HILLAS, Miss SCHWENDENER, and Miss SHELLY  
Lecture, Tu. at 5:10 (Room 119 Macy Hall) and practice sections (see below)  
Practice sections:

*Natural dancing*

Elementary, Section I: Tu. and Th. at 9, Winter Session  
Elementary, Section II: M. and W. at 4:10, Spring Session  
Intermediate, Section III: M. and W. at 4:10, Winter Session  
Advanced, Section IV: Tu. and Th. at 9, Spring Session

*Folk and national dancing*

Intermediate, Section I: M. and W. at 11, each Session  
Advanced, Section II: F., 10-11:50, Spring Session  
Material summary, Section III: F., 10-11:50, Winter Session

*Clog and character dancing*

Elementary, Section I: Tu. and Th. at 10, each Session  
Intermediate, Section II: Tu. and Th. at 3:10, each Session  
Advanced, Section III: M. and W. at 5:10, each Session

The lecture with three practice sections for 4 points; with two sections for 3 points; with one section for 2 points.

The lectures on dancing and music will consider all rhythmic expression in its relation to physical education and to education in general. The dance will be presented as a form of art and discussed in relation to other arts, its origin and place in the life activity of primitive peoples, and its social significance in the cultural development of civilized nations. The course will outline the place of music in physical education, and will make a study of the types which are useful in different situations. Method of selection for special needs will be taught. Lectures, discussions, and demonstrations.

Physical Education 141-142—Athletics. Theory and practice. 3 points (141a-142a, 2 points) each Session. Miss HILLAS, Mr. LANDIS, and Mr. MURRAY  
Lecture, Th. at 5:10 (Room 252 Thompson Hall) and practice sections (see below)

## Practice sections:

*Team and individual sports*

## Winter Session

Section I: Hockey, M. and W. at 9, Sept. 30 to Oct. 30.  
Section II: Golf. Tu. and Th. at 4:10, Oct. 1 to Oct. 31.  
Section III: Track. M. and W. at 9, Nov. 4 to Dec. 4.  
Section IV: Fencing. Tu. and Th. at 1:10, Nov. 7 to Dec. 12.  
Section V: Fencing, continued to Jan. 21.  
Section VI: Basketball. M. and W. at 9, Dec. 9 to Jan. 20.

## Spring Session

Section I: Archery. Tu. and Th. at 4:10, Feb. 6 to Mar. 11.  
Section II: Handball and volleyball. Tu. and Th. at 4:10, Mar. 13 to Apr. 15.  
Section III: Baseball. M. and W. at 9, Mar. 17 to Apr. 16.  
Section IV: Soccer. M. and W. at 9, Apr. 23 to May 14.  
Section V: Tennis. Tu. and Th. at 4:10, Mar. 13 to Apr. 15.  
Section VI: Tennis, continued to May 15.

The lectures with any six practice sections may be taken for 3 points credit, or with any three practice sections for 2 points. The lectures present the technique, strategy, organization, and game aspects of athletic sports.

Physical Education 143-144—Gymnastics. Theory and practice. 3 points (143a-144a, 2 points) each Session. Miss SCHWENDENER and Miss HILLAS  
Lecture, F. at 9 (Room 164 Thompson Hall) and practice sections (see below)  
Practice sections:

*Natural gymnastics*

Section I: M. and W. at 10, each Session

*Danish gymnastics*

Section II: Tu. and Th. at 11, each Session

The lecture with two practice sections each Session for 3 points or with one section for 2 points. The lectures will include the whole field of gymnastics of the past and present, giving particular attention to the aims, methods, and procedures of national systems and their modifications.

**Physical Education 145-146—Swimming. Theory and practice. 3 points (145a-146a, 2 points) each Session. Mrs. SHEFFIELD BLAIN**

Lecture, F. at 3:10 (Room 164 Thompson Hall) and practice sections (see below)

## Practice sections:

Elementary swimming, Section I: Hours to be arranged.

Advanced swimming, Section II: M. and W. at 3:10.

Life saving, Section III: Tu. and Th. at 10.

The lecture with any section of swimming and the unit of life saving may be taken each Session for 3 points or with one of the swimming or life saving sections for 2 points. The lectures will include a thorough study of swimming; its place in physical education, problems of technique, testing, and management.

**Physical Education 147-148—Theory of practice. 3 points each Session. Professor BROWNELL, Miss SCHWENDENER, Miss HILLAS, and Mrs. SHEFFIELD BLAIN**

Tu. and Th. at 5:10 and F. at 9 and at 3:10

This course consists of four lectures each week as given in courses 139-140, 141-142, 143-144, and 145-146. For content, see above courses. Reports are required.

Registration in these courses is approved only for qualified experienced persons who are exempted from practical sections. Approval must be secured from Professor BROWNELL before registration.

**Physical Education 149-150—Problems in natural dancing. 2 points each Session. Professor COLBY**

Th., 7:30-9:30 p. m. Thompson Hall Gymnasium

Open only to students who have completed one year of natural dancing in Physical Education 139-140 or Physical Education 173A and B.

Advanced students who have completed the equivalent of these courses may enter with the approval of the instructor.

**Physical Education 151-152—Teaching of swimming. For men and women. 3 points each Session. Mrs. SHEFFIELD BLAIN**

Lectures, M. and W. at 1:10. Room 252 Thompson Hall

Practice, M. and W. at 4:10, Thompson Hall Pool. One hour of practice teaching to be arranged

This is a professional course for training swimming instructors. It provides the theory, practice, and practice teaching of swimming, diving and life saving.

Ability to swim the side strokes in good form, a trudgeon or crawl at least one hundred yards, execute a plain dive in good form, knowledge of life saving and experience in teaching are required for entrance to this course.

The Winter Session will consider laws of learning and principles of education applied to the teaching of swimming. In practice, the work will consist of how to teach beginners to swim, deep water emergency tests, elementary swimming and diving.

The Spring Session will consider the theory and practice of the crawl, back and breast strokes, advanced diving, life saving, and special problems related to swimming. Prerequisite to the Spring Session: The Winter Session or its equivalent.

**Physical Education 153-154—Gymnastics and dancing for men. Theory and practice. 3 points (153a-154a, 2 points) each Session. Professor BROWNELL, Miss SCHWENDENER, Miss HILLAS, and Mr. PERRY DAVIS**

Lecture, F. at 3:10 (Room 252 Thompson Hall) and practice sections (see below)

## Practice sections:

*Folk and clog dancing*

Section I: F., 10-11:50

*Natural gymnastics*

Section II: Tu. and Th. at 5:10

The lecture with both practice sections for 3 points, with one practice section for 2 points.

The lecture will include a study of the whole field of gymnastics of the past and present, giving particular attention to the aims, methods, and procedures of natural systems and their modifications. The practice will include a summary of folk dance material suitable for schools, in the Winter Session and clog dancing in the Spring Session; practice in natural gymnastic forms as exemplified in stunts, exercises on apparatus, tumbling, etc., together with practice in handling groups.

A special costume is required; information about this is given in Room 158 Thompson Hall.

**Physical Education 155-156—Swimming, diving and life saving. For men. 2 points each Session. Mr. PERRY DAVIS**

Lecture, F. at 10, Room 252 Thompson Hall. Practice, M. and W. at 5:10, Thompson Hall Pool

This course offers instruction in swimming, diving, and life saving from the standpoint of the teacher in schools, public playgrounds and camps.

**Physical Education 157-158—Games and athletic sports. For men. 2 points each Session. Mr. E. C. DAVIS**

S., 9-10:50. Thompson Hall Gymnasium. Twelve students required

Practice, coaching and officiating. This course, intended for directors of physical education and athletic coaches, gives instruction in coaching football, basketball (Winter Session); and soccer, field hockey, track and field sports, and baseball (Spring Session). Particular attention is given to the development and presentation, in progressive series, of games of low and high organization involving the fundamentals of, and leading to, the major sports. Instruction in officiating is a part of the course.

**Physical Education 165—Mechanical analysis of developmental skills. Theory and practice. 2 points. Mr. MCCLOY**

M., 4:10-6, Spring Session. Room 164 Thompson Hall

This course offers, through a series of lectures, laboratory demonstrations and practice on skills, instruction in the kinesiological analysis and practice in the actual working out of the motor problems involved in a wide variety of developmental activities. Particular emphasis will be placed upon the application of the laws of mechanics to the analysis of these skills. Instruction will be given in how to teach activities to secure correct form and perfect execution, how to improve incorrect form, and how to use the knowledge of mechanics to promote better performance in activities.

**Physical Education 167—Individual gymnastics. 2 points. Miss PETTS**  
S., 11-12:50, Winter Session. Room 252 Thompson Hall

This course presents in a practical way faults of posture commonly found in growing children. Lateral curvature of the spine, round shoulders, weak and flat feet will be studied, and measures discussed for correcting these conditions. One hour a week of practical work under supervision required.

Prerequisite: Physical Education 105 or equivalent.

**Physical Education 168—Individual gymnastics, advanced. 2 points. Miss PETTS**

S., 11-12:50, Spring Session. Room 252 Thompson Hall

A discussion of the after-care of infantile paralysis and other prevalent orthopedic disturbances, as well as the problems of exercise in children with weak heart muscle, ptosis, overweight, underweight, etc. One hour a week of practical work under supervision is required.

**Physical Education 167A-168A**—Basic principles of posture. 2 points each Session. Miss TODD  
Tu., 1:10-3. Room 252 Thompson Hall

This course presents for practical application in teaching, the fundamentals of bodily dynamics with particular reference to the thinking processes involved in kinesthetic development. The following will be considered: (a) methods of discovering, analyzing, and cultivating bodily attitudes of mechanical advantage and free somatic and visceral functioning; (b) psychological aspects of posture education with attention to methods of facilitating visualization as a motivating factor in muscular coordination.  
Preceding or parallel: Physical Education 106-106, or equivalent.

**Physical Education 185-186**—Play and playgrounds, community centers and community recreation. 2 points each Session  
Not given 1929-30

**Education 131H**—Play life of young children. See Kindergarten-First Grade Education

**Physical Education 189**—History of physical education. 2 points  
Not given 1929-30

**Physical Education 193-194**—Dramatic expression in physical education. 2 points each Session  
Not given 1929-30

**Physical Education 207**—Field work. 4 points (207a, 2 points). Professors WILLIAMS and BROWNELL  
Hour to be arranged, Winter or Spring Session

Open only to advanced students. Work will be arranged according to interest of students in particular fields of health education and physical education.

**Physical Education 194N**—Organization of athletic activities for girls and women. 2 points. Miss HILLAS  
M. and W. at 11, Spring Session. Room 164 Thompson Hall

This course will consider such problems as training for leadership, planning camp programs, selection and duties of camp counselors, the organization of the student leader units, athletics based on point systems, substitution for varsity competition, play days, telegraphic meets, mass athletic activities, modified sports programs, formation of official bureaus, selection of officials, etc.

#### *Courses in Teaching and Supervision of Physical Education*

**Health Education**—See courses described on pp. 205-209

**Education 194A**—Tests and measurements in physical education. Lectures, discussions, reports and conduct of practical studies in the technique of test construction. 2 points. Professor BROWNELL  
S., 9-10:50, Winter Session. Room 406 Dodge Hall

This course is open to advanced students. No exceptional mathematical ability is required. Topics: The place and possibilities of measurement in physical education; an analytical survey of present tests and measurements; principles involved in the construction of tests for health, physical fitness, physical efficiency, motor ability, and athletic games skills; technic and procedure in planning and conducting studies in tests and measurements; evaluations of the existing scientific literature in physical education; and problems in need of study. Several practical problems will be assigned to the class for experimental study.

**Education 193B**—Administrative problems of physical education in schools and colleges. 2 points. Professor BROWNELL  
S., 11-12:50, Winter Session. Room 164 Thompson Hall

This course offers instruction in the administration of the physical education plant and program. Among the topics considered are: direction of the swimming pool, swimming tests, physical examinations, excuses, special cases, restricted activities, upkeep of equipment, records and their uses, schedules, classifications, credits, relations with other services in the school, etc.

**Education 194B**—Physical education in college and university. 2 points. Professor BROWNELL  
S., 11-12:50, Spring Session. Room 164 Thompson Hall

This course is planned for men and women instructors or directors of physical education in college or university. Typical programs of physical education will be presented and considered in the light of educational criteria and present developments in the field. Topics included in the course are: aim and organization of program, college athletic associations, National Amateur Athletic Federation, relationship of Physical Education to varsity athletics, professional associations, departmental budgets, annual reports, records of progress, and related subjects. Working committees will be formed to study and construct curricula for college and university departments of various types.

**Education 293A**—The curriculum and physical education. Principles, methods and programs. 3 points. Professors WILLIAMS and BROWNELL  
Section I: M. and W. at 2:10, Winter Session. Professor WILLIAMS. Room 164 Thompson Hall  
Section II: S., 9-10:50, Spring Session. Professor BROWNELL. Room 252 Thompson Hall

This course will study the curriculum in physical education in relation to the school and college fields. The economic, political, social, and educational bases for physical education will be examined for the purpose of setting up principles to guide in the selection of activities. The natural program of physical education will be offered as an illustration of the principles, and the various pertinent theoretical considerations will be examined, such as aim, relation to education in general, objectives in equipment, organization, specific activities, social and moral development. The class will have practice in constructing a curriculum.

**Education 294A**—Foundations of health and physical education. 3 points. Professor WOOD  
M. and W. at 2:10, Spring Session. Room 164 Thompson Hall

This course deals with source materials underlying the fields of health education, health service and physical education. Students will become acquainted with foundations in history and literature; in science, psychology, sociology, general education; and in the technical backgrounds of health and physical education.

**Education 293B-294B**—Organization and administration of physical education in state programs and state institutions. 2 points each Session. Professor BROWNELL  
M. and W. at 5:10. Room 232 Macy Hall

This course will consider physical education in high school and normal schools in relation to the whole curriculum. The main topics are: the crediting of physical education toward high school requirements, certificates of teachers, organization of a program of health education and physical education, equalization of the supply and demand of teachers and avoiding duplication in state institutions, supervisory procedures, promotion programs, annual reports, finances and special problems.

**Education 193F-194F**—Methods in physical education. 2 points each Session. Miss SCHWENDENER  
F., 1:10-3. Rooms 255 Thompson Hall and 415 Dodge Hall

In the Winter Session, the lecture hours deal with method and subject matter in physical education with reference to development and needs of the elementary school child. The class will have practice in the selection and organization of material. Opportunity for observation in private and public schools is given.

The Spring Session is planned primarily for students interested in method, subject matter, and activities suitable to and available for a high-school program in physical education.

**Education 223E-224E—Problems in health service and health education.**  
See HEALTH EDUCATION

**Education 293E-294E—Problems in physical education.** 3 points each Session. Professors WILLIAMS and BROWNELL  
M. and W. at 3:10. Room 164 Thompson Hall

This course offers opportunity for advanced students to work under direction on special problems in physical education. Only students of experience may register for the course. Training will be given in scientific methods of investigation. The course will present major problems in administration of college and school programs, and will provide opportunity for presentation by the student and discussion and criticism by the class and instructor. A final report on the problem studied is required at the end of the course.

**Education 294H—Supervision of physical education.** 2 points. Miss SCHWENDENER  
Tu. and Th. at 10, Spring Session. Room 164 Thompson Hall

This course is open to experienced students and offers instruction in the principles and practice of supervision. Observation will be used as a basis for presentation and discussion of the principles, methods, progress, and subject matter of physical education. Particular attention will be given to the problems of supervision, classroom technique, organization of subject matter, relative worth of different activities, social and moral values inherent or realized in the activities, leisure-time values, and other related topics.

**Education 393E-394E—Administration of health service and health education.** See HEALTH EDUCATION

**Education 393H-394H—Administration of physical education.** 3 points each Session. Professors WILLIAMS and BROWNELL  
Th., 1:10-3. Room 211 T. C. Main Hall

This course is arranged for graduate students who wish to qualify for positions as directors and administrative heads of city and state systems of physical education, college and normal school departments.

The Winter Session will consider state physical education laws, their history, development, requirements and other phases of the school code that affect physical education; the division of physical education in the state, functions, duties, and types of service rendered; relationships between state, and city departments of physical education and boards of health; state programs, courses of study, and school surveys; certification authority of the state board of education for directing state programs; other aspects of state development in physical education.

Opportunity for observation in public and private schools will be given.

The topics for the Spring Session will be: professional training of teachers in the field, relationship of special departments, practice school, teachers in service, selection and organization of staff, development of staff members, delegation of responsibilities, records of students' progress, athletic relationships, control of health and recreational life of students, professional costume, selection and upkeep of equipment.

**Education 493S-494S—Seminar in physical education.** Professors BONSER, WILLIAMS, FRETWELL, WOOD, and BROWNELL  
F., 10-11:50. Room 162 Thompson Hall

This course is limited to matriculated candidates for the Doctor's degree with major interest in physical education, for whom it is a requirement.

## COURSES FOR TEACHERS, SUPERVISORS, AND SPECIAL WORKERS IN PRACTICAL SCIENCE

(NATURAL SCIENCES AND SOCIAL SCIENCES APPLIED TO PRACTICAL ARTS)

Major programs in Practical Science are intended for students who have completed at other colleges approved courses in biology, chemistry and physics. Such programs are of interest to students who are preparing either for technical work in some line of natural or social sciences related to Practical Arts, or for teaching science in schools which include Practical Arts. The chief opportunities for specialization are indicated by the program titles below.

### Major Programs in Practical Science

Applied Biology, Bacteriology and Hygiene. Professor BROADHURST, *adviser*

Household Engineering. Professor LYNDE, *adviser*

Biochemistry and Nutrition. Professors ROSE and EDDY, *advisers*

Household Economics and Social Science. Professor ANDREWS, *adviser*

In arranging major programs in Practical Science for any degree, there are many possible combinations of technical and education courses in Household Arts, Practical Science, Health Education, general education, and science courses in other parts of the University, which may be selected with reference to the interest of the individual student. All programs are subject to the general requirements for degrees (pp. 5-8), the special requirements for major programs in Practical Arts (p. 151), and must be approved by advisers.

### Courses in Practical Science

The courses offered in the several subdivisions of Practical Science are grouped under the following headings: *A—Applied Biology, B—Chemistry (General, Household, Organic, Biochemistry), C—Household Engineering, D—Hygiene, E—Nutrition, F—Economic and Social Science.*

Courses in Practical Science are all more or less professionalized with reference to the needs of teachers and other workers in educational institutions.

Science courses in the 99-199 group are adapted to numerous graduates who began specialization late in their undergraduate curriculum, while the courses above 200 offer more advanced work for students who have completed as undergraduates here or elsewhere courses equivalent to those below 200.

Students who apply for exemption from required courses in biology, chemistry and physics on the basis of study previously completed at other colleges, must submit notebooks, names of textbooks used, and brief outlines of the previous work.

*Laboratory breakage:* Students will pay for breakage by buying coupons from the assistant in charge of supplies.

*Limited classes:* Students must consult instructors and reserve places before registering for laboratory courses in practical science.