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Graduate Bulletin 1971 - 72

Walla Walla College



Graduate Bulletin 1971-72

WALLA WALLA COLLEGE GRADUATE BULLETIN '71-'72

The College is accredited by

The Northwest Association of
Secondary and Higher Schools

Association of Seventh-day Ad-
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The Washington State Board of
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Department of Baccalaureate and
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U.S. Government for the training
of Veterans under the U.S. Code,
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The Attorney General of the
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Vocational Rehabilitation

FOR INFORMATION

Concerning general information, bulletins, application blanks, view-books, student handbooks, write

The Registrar

Admissions Secretary

Concerning the graduate programs, teaching and research assistantships, special credentials, write

Chairman, The Graduate Council or

Chairman, Department involved

Concerning work, financial arrangements, and apartments, write

Director, Student Finance

Concerning room reservations and other matters of residence, write

The Dean of Men or

The Dean of Women

WALLA WALLA COLLEGE
College Place, Washington 99324

Telephone
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CALENDAR, 1971-1972

AUTUMN QUARTER

September 19, 20	Registration
September 21, Tuesday	Instruction begins, 7:30 a.m.
October 5, Tuesday	Last day to add a course
October 25	Graduate Record Examinations
November 24, 12:30 p.m.-Nov. 28, 10:00 p.m.	Thanksgiving Recess
December 5 - December 10, 12:00 noon	Registration for Winter Quarter
December 16, 1:30 p.m.	Quarter Ends
December 17 - January 2, 10:00 p.m.	Christmas Recess

WINTER QUARTER

January 2, 1:00-5:00 p.m. and January 3	Registration of New Students
January 3, Monday	Instruction begins, 7:30 a.m.
January 17, Monday	Last day to add a course
January 17	Graduate Record Examinations
March 5 - March 10, 12:00 noon	Registration for Spring Quarter
March 10	Last day to file master's degree order form
March 16, 1:30 p.m.	Quarter Ends
March 17 - March 21, 10:00 p.m.	Spring Recess

SPRING QUARTER

March 22, 23	Registration of New Students
March 22, Wednesday	Instruction begins, 7:30 a.m.
April 5, Wednesday	Last day to add a course
April 24	Graduate Record Examinations
May 21	Last day to complete final master's examinations
June 2	Consecration
June 3	Baccalaureate
June 4	Commencement

SUMMER SCHOOL, 1972

June 12-August 6	Summer Session
June 13	Last day to file master's degree order form
June 19	Graduate Record Examinations
July 23	Last day to complete final master's examinations
August 6	Commencement

THE DIRECTORY

BOARD OF TRUSTEES

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DONALD D. LAKE, M. A.	Vice President, Student Affairs
VERNON H. SIVER, B. A.	Vice President, Financial Affairs
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ORPHA N. OSBORNE, B. A.	Registrar
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JERRY M. LIEN, PH. D.	Chaplain
MAYNARD E. LOEWEN, B. A.	Dean of Men
BETTY HOWARD, R. N., B. S., C. R. N. A.	Dean of Women
GORDON S. BALHARRIE, B. D.	Dean, School of Theology
WILMA L. LEAZER, M. S.	Dean, School of Nursing

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RICHARD A. BECK, B. A.	Director, Student Finance
LOIS M. HELLIE, B. A.	Chief Accountant
JIMMIE D. LOSEY, M. D.	College Physician
GLENN W. MASDEN, M. S. E. E.	Coordinator, Data Processing

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V. H. SIVER.

GRADUATE COUNCIL

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N. C. MABERLY, R. D. McCUNE, H. T. OCHS, ORPHA OSBORNE, D. W. RIGBY.

THE FACULTY

BIOLOGY

- RIGBY, DONALD W.**, Professor of Biology, Department Chairman
B. A., 1950, La Sierra College; M. A., 1956, Walla Walla College; Ph. D., 1967, Loma Linda University
- CLAYTON, DALE L.**, Assistant Professor of Biology
B. A., 1962, Andrews University; M. A., 1964, Loma Linda University; Ph. D., 1968, Michigan State University
- DICKSON, LEAL G.**, Assistant Professor of Biology
B. A., 1962, Columbia Union College; M. S., 1969, Ph. D., 1971, University of Maryland
- FORS, CARL A.**, Associate Professor of Biology
B. A., 1958, Walla Walla College; M. A., 1959; Ph. D., 1965, Oregon State University
- GRABLE, ALBERT E.**, Associate Professor of Biology
B. S., 1959, La Sierra College; M. S., 1962, Ph. D., 1964, University of Minnesota
- MCCLOSKEY, LAWRENCE R.**, Assistant Professor of Biology
B. A., 1961, Atlantic Union College, M. A., 1965, Ph. D., 1967, Duke University
- PERRY, ALFRED E.**, Associate Professor of Biology
B. A., 1953, Walla Walla College; M. A., 1958, Walla Walla College; Ph. D., 1965, Oklahoma State University

EDUCATION AND PSYCHOLOGY

- CHACE, E. STANLEY**, Professor of Education and Psychology, Department Chairman
B. Th., 1948, Atlantic Union College; M. Ed., 1958, University of Chattanooga; Ed. D., 1960, University of Tennessee
- GIBBONS, C. KEITH**, Assistant Professor of Education and Psychology
B. A., 1960, M. A., 1966, Walla Walla College; Ed. D., 1969, University of Idaho
- HINGLEY, ROY A.**, Instructor in Education and Psychology
B. Th., 1962, Canadian Union College; M. A., B. D., 1965, Andrews University; M. A., 1968, Arizona State University
- MABERLY, NORMAN C.**, Professor of Education and Psychology
B. Th., 1952, Walla Walla College; M. A., 1954, Andrews University; Ed. D., 1962, University of Southern California
- OCHS, HAROLD T.**, Assistant Professor of Education
B. A., 1950, Walla Walla College; M. Ed., 1957, Eastern Washington State College; Ed. D., 1971, University of Idaho
- PHILLIPS, HOLLIBERT E.**, Assistant Professor of Education
B. A., 1960, University of London; M. A., 1964, Andrews University; Ed. D., 1970, Boston University
- TEEL, LOIS FLORETTA**, Associate Professor of Education
B. A., 1947, Emmanuel Missionary College; M. Ed., 1959, University of Oregon
- WAGNER, DALE O.**, Associate Professor of Education and Psychology
B. A., 1952, Walla Walla College; M. A., 1958, Eastern Washington State College

SUPPORTING DEPARTMENTS, CHAIRMEN

- BARNETT, CLAUDE C.**, Professor of Physics
B. S., 1952, Walla Walla College; M. S., 1956, State College of Washington; Ph. D., 1960, Washington State University
- CAVINNESS, GEORGE L.**, Professor of Modern Languages
B. A., 1937, Pacific Union College; M. A., 1939, University of California (Berkeley); Ph. D., 1947, Ohio State University

DICKINSON, C. LOREN, Associate Professor of Speech

B. A., 1957, Union College; M. A., 1960, University of Nebraska; Ph. D., 1968, University of Denver

EVANS, HELEN WARD, Professor of English

B. A., 1949, Walla Walla College; M. A., 1955, Ph. D., 1965, Stanford University

GIBSON, GERTRUDE M., Professor of Office Administration

B. A., 1943, Walla Walla College; M. A., 1950, Teachers College of Columbia University; Ed. D., 1967, Boston University

HARE, GORDON B., Professor of Mathematics

B. A., 1951, Columbia Union College; M. S., 1954, Ph. D., 1964, University of Colorado

HENDERSON, ROBERT A., Associate Professor of History

B. A., 1962, Walla Walla College; Ph. D., 1967, Washington State University

JOICE, PAUL W., Professor of Business and Economics

B. S., 1949, Union College; M. B. A., 1953, University of Denver, Ed. D., 1962, University of Nebraska

JONES, CARL T., Professor of Chemistry

B. A., 1933, Columbia Union College; M. S., 1939, Catholic University of America; Ph. D., 1959, Oregon State College

MABLEY, ELWOOD L., Associate Professor of Library Science

B. A., 1948, Walla Walla College; M. S. in L. S., 1959, University of Southern California

MACKINTOSH, KENNETH R., Professor of Art

M. F. A., 1961, Otis Art Institute of Los Angeles County

MOORE, ROBERTA J., Professor of Journalism

B. A., 1948, Atlantic Union College; M. A., 1953, Boston University; Ph. D., 1968, Syracuse University

TRAUTWEIN, CALVIN L., Professor of Industrial Education and Technology

B. A., 1945, La Sierra College; B. S., 1950, Pacific Union College; Ed. M., 1955, Oregon State College; Ed. D., 1962, Colorado State College

WEST, MELVIN K., Professor of Music

A. B., 1952, Emmanuel Missionary College; M. Mus., 1955, Redlands University; Mus. A. D., 1959, Boston University; F. A. G. O., 1957

WINTER, EUGENE S., Professor of Physical Education

B. A., 1941, Walla Walla College; M. S., 1948, State College of Washington; Ph. D., 1963, University of Oregon

WRIGHT, EVELYNNE F., Professor of Home Economics

B. A., 1941, Pacific Union College; M. A., 1942, University of Washington

GENERAL INFORMATION

WALLA WALLA COLLEGE is a Christian institution of higher learning operated by the Seventh-day Adventist Church.

The College is located in the City of College Place in the historic, fertile Walla Walla valley of southeastern Washington. The old Oregon Trail near the campus leads to the site of the old mission which was directed by Marcus Whitman from 1836 to 1847, and which has been reconstructed by the federal government as the Whitman Mission. The scenic Blue Mountains to the east are but a few minutes' drive from the campus and offer unusual opportunities for recreation and relaxation.

The principal objectives of the College are the fostering of an intelligent understanding and devotion to Christian ideals, loyalty to God and service to humanity, and the offering of an educational experience encouraging the formation of character marked by a full, harmonious development of the intellectual, physical, and spiritual powers.

The seventh-day sabbath is observed at Walla Walla College from sunset Friday to sunset Saturday. No instructional activities are conducted during these hours.

ACCREDITATION

The College is accredited by the Northwest Association of Secondary and Higher Schools, the Association of Seventh-day Adventist Colleges and Secondary Schools, the Washington State Board of Education and is a member of the American Association of Colleges for Teacher Education, Association of American Colleges, and the American Council on Education National Commission on Accreditation.

DEGREES OFFERED

The College offers courses of study leading to the Master of Arts and Master of Education degrees. The former degree is a thesis program and the latter is a non-thesis program.

ADMINISTRATION

The master's degree programs are directed and supervised by the Graduate Council, which is the legislative body responsible for the formulation of all graduate academic policies and curricula.

GRADING SYSTEM

The following system of grades and grade-point values is used in graduate studies:

A—	4	grade points per credit
B—	3	
C—	2	
D—	1	
F—	0	

GRADUATE FACILITIES

Life Sciences Complex

The Department of Biology facilities in the Life Sciences Complex completed in 1967 include staff and graduate student offices, classrooms, and teaching laboratories, controlled environment rooms and chambers, radioisotope laboratory, animal and greenhouse complexes, photographic darkroom, museum, and a shop.

Marine Biological Station

Additional Department of Biology facilities occupy 40 acres of beach and timberland at Rosario Beach adjoining Deception Pass State Park, Anacortes, Washington. The physical plant includes four laboratory buildings, a cafeteria, an assembly hall, shop, and 29 cabins for student and staff housing.

Smith Hall

The Department of Education is housed in a modern, air-conditioned, three-story building. Facilities include offices for staff and graduate assistants, laboratories for testing, psychology, and audio-visual productions, observation rooms, a tiered lecture hall, a curriculum library, classrooms and seminar rooms, and an audio-visual and instructional materials center containing workrooms, a photographic darkroom, an offset press-room, and a closed circuit television center.

Library

The College Library is a vital part of the educational program at Walla Walla College. The main library building was completed in 1944 and remodeled in 1964. Reading room accommodations, the open-shelf system, seminar and conference rooms, and a modern, comfortable, periodical room contribute to the study and enjoyment of books and journals. Microfilm and microcard readers make microfilms of scholarly material accessible. The curriculum library contains a large selection of textbooks, children's literature books, a collection of over 3,000 mounted pictures, filmstrips, tapes and phonorecords. The combined libraries contain in excess of 100,000 volumes. An average of 5,600 volumes is accessioned annually. There are about 980 current periodicals received regularly. Resources in other libraries are available to students and faculty members through the library's membership in the Pacific Northwest Bibliographic Center which serves as a clearinghouse for interlibrary loans.

Loans

The following loan funds are recommended and applications may be obtained from the Student Finance Office:

Federally Insured Loans: Many banks are offering the Federally Insured Loans to college students. These are long-term, low-interest loans that need not be repaid until a student completes his course of study. Consult the loan officer of your bank for additional information.

National Defense Education Loan: National Defense Education Loan is made available through the federal government and Walla Walla College. Repayments begin after the applicant's student status terminates. Applications for this aid must be received in the Student Finance Office no later than August 15.

Oregon State Scholarship Commission: Oregon State residents may borrow up to \$1,000 per year under this plan, if they are accepted for enrollment or are enrolled in good standing and carrying a full-time course of study. Applications are available in the Student Finance Office, or may be obtained from Oregon State Scholarship Commission, P.O. Box 3175, Eugene, Oregon 97403.

GRADUATE PROGRAM

MASTER's degree programs are offered in the Department of Biology, and in the Department of Education and Psychology. Graduate study is planned in reference to the student's experience, future objectives, personal qualifications, and previous academic preparation. The importance of careful planning and close cooperation between the student and his assigned adviser is emphasized.

OBJECTIVES OF THE GRADUATE PROGRAM

The program provides an atmosphere which stimulates intellectual curiosity and independent thinking. It strives to develop an appreciation of the value of research and an acquaintance with basic research techniques. It endeavors to strengthen the professional competence of the individual in his area of specialization.

ADMISSION TO GRADUATE STUDY

Applicants for admission to graduate study shall have been graduated from a recognized four-year college or university and should have completed a basic background of undergraduate work in the proposed field of graduate study. Applicants without such a background should expect to make up deficiencies.

The applicant must file completed graduate application forms and two official transcripts of all work taken on the collegiate level with the Registrar of the College at least three months prior to the quarter in which graduate study is to commence. Failure to do so may result in delay in admission and registration. All forms and transcripts submitted for admission become the property of the College and are not returned. Admission forms are available from the Admissions Secretary.

Eligibility for admission as a graduate student is determined by the Graduate Council of the College upon the recommendation of the Biology or Education and Psychology departments.

Admission Requirements for the Master's Degree Program

In addition to an acceptable baccalaureate degree, applicants for admission to a graduate degree program must have the following:

1. A satisfactory score on the *Graduate Record Examination: Aptitude Test*, or on other tests approved by the Graduate Council. Applicants in biology must also have taken the *Graduate Record Examination: Advanced Test in Biology*. The results of these examinations are to be submitted with the application for admission.
2. A minimum cumulative grade-point average of 2.75 on either the last 96 credits toward the baccalaureate degree or on the total undergraduate program, whichever is higher.

An applicant whose undergraduate grade-point average is below 2.75 may be admitted if there is other evidence of ability to pursue the graduate degree. Such evidence may include one or more of the following: performance on the Graduate Record Examinations, strong professional recommendations, postgraduate work at a recognized institution, experience in areas related to the desired graduate specialization, or other criteria established by the departments concerned.

A student who meets the requirements for admission to the master's degree program but who registers only as a postgraduate has no assurance that credits earned will later apply toward the master's degree.

Admission Requirements for the Non-Degree Program

Graduates of an accredited college or university may be admitted as postgraduate students to take courses toward provisional and standard certification, special credentials, or additional course work. These credits may not apply to a master's degree.

Graduate Credit for Seniors

Seniors whose programs for graduation have been approved and who otherwise meet the admission requirements of the graduate division may be permitted to take graduate courses if their programs will allow it.

GENERAL DEGREE REQUIREMENTS

Responsibilities of the Student

The graduate student is responsible for a knowledge of all regulations and procedures as published in this bulletin. The student must assume the initiative in such matters as arranging for required tests and examinations, securing approval of his program of study, and following all procedures in their proper sequence. Failure to do so may result in unnecessary delay or interruption of graduate study.

Residence and Time Requirements

A minimum of 45 quarter credits is required, at least 33 of which must be earned while in residence.

Credits older than six calendar years may not be used to satisfy degree requirements.

Course Requirements and Scholarship

The completion of a minimum of 45 quarter credits in approved graduate courses with a cumulative grade-point average of at least 3.00 is required. Grades of all courses on the graduate program excluding deficiencies will be computed in the grade-point average.

Courses numbered 500 or above are primarily for graduate students. A minimum of 24 credits must be earned in courses numbered 500 or above for the Master of Arts degree. A minimum of 30 credits is required in courses numbered 400 or above for the Master of Education degree. Courses numbered 400 to 499 are open to both undergraduate and graduate students. Courses numbered 350-399 may be included in the graduate program on approval of the Graduate Council.

Departmental Requirements

Candidates for a master's degree must also satisfy additional departmental requirements as listed in this bulletin under the section Departments of Instruction.

Second Master's Degree

The second master's degree requires a minimum of 30 additional quarter credits with approval of the Graduate Council.

PROGRAM OF STUDY

The chairman of the department will provide assistance for the student in selecting the courses for the first quarter in residence and in planning the program of study for the degree. Immediately after the completion of a minimum of 12 quarter credits of graduate work and in conference with the department adviser, a proposed program of graduate study shall be submitted to the Graduate Council. Approval of the program and advancement to master's degree candidacy will be officially acknowledged by a letter from the chairman of the Graduate Council.

Course Load

The normal load is 12 credits per quarter. Any course load above this amount must be approved by the Graduate Council.

Changes in Registration

Students withdrawing from college or individual courses must file an official drop voucher with the Registrar's Office. Withdrawal slips must be signed by the adviser and the instructor involved. The final date for dropping a class is prior to the last formal class meeting. Students doing passing work prior to withdrawal will receive a W (withdrawal). Students withdrawing from all classes during the quarter will receive W's.

Transfer of Graduate Credit

A maximum of 12 quarter credits of graduate work taken at other recognized institutions may be approved for transfer toward the master's degree. These credits may be by extension if acceptable toward the master's degree at the school offering the extension work. Correspondence credit or credit by examination is not accepted.

Bulletin

The student's degree candidacy must be based on the graduate bulletin in effect at the time the proposed program for graduate study is approved by the Graduate Council.

ADVANCEMENT TO DEGREE CANDIDACY

Admission to graduate study merely constitutes permission to register for course work. It does not imply degree candidacy.

A student may be advanced to master's degree candidacy by fulfilling the following conditions:

1. Complete 12 to 15 credits of approved graduate work with a minimum grade-point average of 3.00. If grade points earned on these credits do not average 3.00, advancement to candidacy will be denied and any subsequent work will not apply toward the master's degree.
2. Arrange for the removal of any undergraduate deficiencies.
3. Submit the "Application for Degree Candidacy and Proposed Program of Courses" form to the department chairman outlining a master's degree study program to be approved by the department concerned.
4. Secure approval of the proposed program by the Graduate Council.

Advancement to master's degree candidacy indicates that the Graduate Council and the departments concerned encourage the candidate to complete the master's degree. The degree is granted only after successful completion of the approved program of studies within the regulations of the College.

Changes in Program

Changes in the proposed program may not be made without the prior approval of the department chairman, registrar, and chairman of the Graduate Council.

THESIS REQUIREMENT

A thesis demonstrating ability to conduct research in a systematic and scholarly manner must be presented by a candidate for the Master of Arts degree. The thesis is planned with and approved by the student's advisory committee. Completion of the thesis must be in accordance with the requirements of each department.

Approved copies of the completed thesis are kept on permanent file in the college library and in the respective departments.

FINAL EXAMINATIONS

Master's degree candidates must pass a written and/or oral examination administered by an examining committee. The nature of further examination, if required, is to be determined by the examination committee. A representative of the Graduate Council, who is not a member of the candidate's advisory committee, attends each oral examination.

Examination Regulations

1. Examinations should be completed at least two weeks before commencement.
2. It is the candidate's responsibility to schedule his examination with the department chairman.
3. The examination is conducted by the chairman of the candidate's advisory committee. Success or failure in the examination is determined by the examination committee.
4. Questions in the examination will be based upon the candidate's thesis and/or areas of study.
5. The time allowed for the examination is ordinarily not more than two hours.
6. Any candidate who fails the examination may be granted only one opportunity by the examination committee to retake his final examination after a lapse of at least one quarter.

CONFERMENT OF DEGREE

The candidate must file in duplicate the order form for the master's degree with the Registrar's Office prior to the beginning of the final quarter.

Students are required to participate in the graduation exercises. In special cases permission to receive the master's degree *in absentia* may be granted by the President of the College.

DEPARTMENTS OF INSTRUCTION

BIOLOGICAL SCIENCES

The Department of Biology offers a Master of Arts degree in biology. Courses are offered in zoology and botany on the main campus and at the Marine Biological Station near Anacortes, Washington. Supporting areas may be required to complete the educational background. One summer's attendance at the Marine Biological Station is expected.

The specific objectives of the Department of Biology applicable to the graduate program are:

1. To increase the competence of secondary school teachers, especially those in the Seventh-day Adventist educational system.
2. To prepare students for positions in institutions of higher education by giving them a firm foundation for work toward the doctorate.
3. To provide a preparation for research careers.

COURSES

401. **PLANT PHYSIOLOGY.** A course designed to cover the principles of physiology of plants in general. One laboratory per week. Prerequisite: 360. Four credits.

403. **ORNITHOLOGY.** A systematic study of native birds of North America, with emphasis on identification, migration, geographical distribution, habits and life histories. Two laboratories per week. Four credits.

405. **GENERAL ENTOMOLOGY.** A study of insect morphology, physiology and ecology. One laboratory per week. Four credits.

412. **PLANT ANATOMY.** A study of the microscopic anatomy of plant tissues with emphasis on their origin and development. Primary attention will be devoted to the vascular plants. Prerequisite: 360. One laboratory per week. Four credits.

420. **COMPARATIVE ANATOMY.** A study of the comparative anatomy of chordates with emphasis on the vertebrates. Detailed dissections of the shark and cat are made in the laboratory. Two laboratories per week. Five credits.

BIOLOGICAL SCIENCES

424. **HERPETOLOGY.** A systematic study of amphibians and reptiles with emphasis on natural history and ecology. Two laboratories per week. Four credits.

426. **SYSTEMATIC BOTANY.** Principles of classification of plants with emphasis on natural history and ecology. Two laboratories per week. Four credits.

427. **COASTAL FLORA.** A study of the principles of classification and of the ecological relationships of the vascular plants of the Puget Sound area. Special emphasis is given to the salt marshes, fresh-water pond, estuarine, grassland, and forest habitats of the islands and mainland. Four credits. (WWC Marine Biological Station.)

428. **PHYSIOLOGY OF THE ALGAE.** A comparative study of the physiology of representative members of the major algae groups. Collection and growth of pure cultures of single-celled forms and related metabolic processes, nutritional factors, light requirements, synchronization and growth will be emphasized. Four credits. (WWC Marine Biological Station.)

429. **LIMNOLOGY.** A study of the factors responsible for the presence and distribution of animals and plants in fresh waters. Field work includes trips to a number of lakes and streams for collection of living specimens as well as habitat analysis. Four credits.

441. **MICROTECHNIQUE.** A course designed to cover the important methods of making microscope slides. Two laboratories per week. Three credits.

444. **MAMMALOLOGY.** A systematic study of mammals with emphasis on natural history and ecology. Two laboratories per week. Four credits.

446. **GENERAL ECOLOGY.** A course designed to cover the basic principles of plant and animal ecology. Field trips to nearby areas illustrating these principles are part of the laboratory work. Two laboratories per week. Four credits.

447. **PARASITOLOGY.** A systematic study of the morphology, life cycle, and host-parasite relationships of protozoan, helminth, and arthropod parasites. Two laboratories per week. Five credits.

449. **VERTEBRATE HISTOLOGY.** The microscopic anatomy of vertebrate cells, tissues and organs including reference to their functions. Two laboratories per week. Four credits.

451. **INVERTEBRATE ZOOLOGY.** A study of the biology of the invertebrates with emphasis on their ecology, morphology and physiology. Two laboratories per week. Five credits.

453. **RESEARCH METHODS III.** Methods of writing the scientific paper, oral presentation of the paper and a discussion of the organization of the biological sciences for the communication of results of scientific research are included. Two credits.

462. **ICHTHYOLOGY.** A systematic study of the fishes found in Puget Sound, with a survey of the fishes of other waters. Four credits. (WWC Marine Biological Station.)

BIOLOGICAL SCIENCES

463. **MARINE BOTANY.** A systematic study of plants found in Puget Sound, with a survey of marine plants from other areas. Four credits. (WWC Marine Biological Station).

464. **ANIMAL BEHAVIOR.** A comparative study of the behavior of animals with emphasis on an experimental analysis of behavior. A research project will be required. Four credits. (WWC Marine Biological Station).

465. **BACTERIOLOGY.** A presentation of the basic principles necessary for an understanding of morphology and function of bacteria. Laboratory work, including unknowns, points out techniques employed in their study. Two laboratories per week. Five credits.

467. **BIOLOGICAL OCEANOGRAPHY.** A study of physical, chemical and geological effects of the ocean on marine organisms. Four credits. (WWC Marine Biological Station.)

468. **COMPARATIVE PHYSIOLOGY.** A comparative study of the physiology and life processes of animals with emphasis on invertebrates. Prerequisite: 392. Four credits. (WWC Marine Biological Station.)

470. **BIOPHYSICS.** An introductory course emphasizing the physical aspects of living organisms studied by the experimental and conceptual methods of physics with application to marine life. Four credits. (WWC Marine Biological Station).

474. **MARINE INVERTEBRATES.** A study of the biology of selected groups of marine invertebrates. Four credits. (WWC Marine Biological Station).

477, 478, 479. **INDEPENDENT STUDY IN BIOLOGICAL SCIENCE.** Directed study in an approved area. The student will be required to read widely on an assigned subject, follow regular research methods, and present a paper showing competence in and extent of his study. Open only to majors and minors. Permission from the chairman of the department required. One to three credits any quarter. Maximum, three credits.

483. **PHILOSOPHY OF ORIGINS AND SPECIATION.** The various theories on the origin and history of living organisms will be compared in light of present scientific knowledge in the areas of biochemistry, paleontology, morphology, geology, genetics, and other related areas. For majors and minors only. Three credits.

490. **TECHNIQUES IN FIELD BIOLOGY.** A study of the techniques used in the collection and preservation of biological specimens for museum purposes. Emphasis is placed on the recording and preservation of ecological data obtained with the collections of specimens. The topic for a given year will depend on the instructor offering the course and credit will be given at the rate of one hour credit for each week spent working in the field. One to six credits.

495. **COLLOQUIUM.** A departmental seminar offered each quarter in which current areas of research are presented by the staff and visiting lecturers. Required of all juniors, seniors and graduate students. No credit.

501. **RESEARCH IN BIOLOGY.** Individual work in a topic of original research carried out under the direction of one of the instructors. Two to four credits per quarter. Maximum, eight credits.

BIOLOGICAL SCIENCES

503. **GENETICS AND EVOLUTION.** A study of the nature and function of the genetic material as it relates to population and species variability and change. Prerequisite: 261. Three credits.

506. **MORPHOLOGY OF PLANTS.** An advanced study of the type forms of the divisions of the plant kingdom. One laboratory per week. Prerequisite: 360 or permission of the instructor. Four credits.

510. **GRADUATE SEMINAR.** Presentation of topics and discussion of current research in specific areas of biology. One credit; any quarter. Maximum, five credits.

511. **BIOSYSTEMATICS.** A study of the process of speciation and its relationship to currently used taxonomic methods and rules of nomenclature. Four credits.

514. **SYMBIOSIS.** A study of sharply defined associations between organisms. Selected examples of the viruses, bacteria, plants and animals are used to illustrate varying degrees of relationships. Prerequisite: Course work in one group of animals or plants or microbes or parasitology. Chemistry courses through organic are highly recommended. Two laboratories per week. Four credits.

518. **SYSTEMATIC ENTOMOLOGY.** A study of the principles of classification of insects. Laboratory work emphasizes recognition of orders and families with special problems on the specific level. Prerequisite: course 405 highly recommended. Two laboratories per week. Four credits.

521. **PRINCIPLES OF ECONOMIC ENTOMOLOGY.** An evaluation of the various methods of controlling economically important species. Prerequisite: 405. Three credits.

522. **CELLULAR BIOLOGY.** Current knowledge and research in the areas of cell physiology, biochemical genetics, bacteriological genetics, and radiation biology will be considered. Two laboratories per week. Prerequisite: 392. Five credits.

525. **READINGS IN ANIMAL PHYSIOLOGY.** Analysis of classical and current literature in the field by means of reports and conferences with staff. Two credits. Maximum, four credits.

526. **READINGS IN INVERTEBRATE ZOOLOGY.** Analysis of classical and current literature in the field by means of reports and conferences with staff. Two credits. Maximum, four credits.

527. **READINGS IN ENTOMOLOGY.** Analysis of classical and current literature in the field by means of reports and conferences with staff. Two credits. Maximum, four credits.

528. **READINGS IN VERTEBRATE ECOLOGY.** Analysis of classical and current literature in the field by means of reports and conferences with staff. Two credits. Maximum, four credits.

529. **READINGS IN SYMBIOSIS.** Analysis of classical and current literature in the field by means of reports and conferences with staff. Two credits. Maximum, four credits.

BIOLOGICAL SCIENCES

537. **HELMINTHOLOGY.** A detailed study of the more common helminth parasites of animals is undertaken. Emphasis is given to current areas of research in helminthology. Basic techniques of importance in laboratory work with helminths are covered. Two laboratories per week. Prerequisite: 447. Four credits.

545. **THESIS.** Preparation of the master's dissertation after successfully carrying out original study with a suitable topic to be selected after consultation with the major professor. Eight credits.

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

The Department of Education and Psychology offers two Master Degree programs—the Master of Arts, a thesis program, and the Master of Education, a non-thesis program. The programs permit professional enrichment through liberal course selection in the areas of Administration, Elementary Language Arts, Elementary Teaching, Guidance, Junior High Specialization, Library Resources, and Secondary Content Areas.

In addition to the general objectives of the Graduate Program, the following are specific objectives of the Department of Education:

1. To assist the student in developing a philosophy of education consistent with Christian ethics.
2. To develop an understanding of the relationship between teaching and the learning process.

MASTER OF ARTS

Basic Requirements 18

Graduate Seminar
Methods of Research
Thesis
Foundations

Area of Specialization 18

(Administration or Guidance)

Electives with advisement 9

Up to six credits numbered 400 or above may be selected from a department other than Education.

45 credits minimum

24 credits must be on the 500 level.

All candidates must qualify for a state-approved teaching certificate before the degree is granted. It is the responsibility of the candidate to present evidence of the qualification.

MASTER OF EDUCATION

Basic Requirements 10

Graduate Seminar
Methods of Research
Foundations

Area of Specialization 24

(Choose one of the following:

Administration, Biology, Biophysics, Chemistry, Elementary Language Arts, Elementary Teaching, Guidance, Health and Physical Education, Industrial Education, Junior High School Specialization, Library Resources, Mathematics, Physics, Secondary School Language Arts, or Social Science.)

Electives with advisement

11

Under advisement select professional education courses or content courses from not more than two related areas as specified in departmental graduate program guides.

45 credits minimum

Two-thirds of the minimum 45 credits to be 400 level or higher.
One year of validated satisfactory professional experience.
All candidates must qualify for a state-approved teaching certificate before the degree is granted. It is the responsibility of the candidate to present evidence of this qualification.

All course work for the above degrees must be planned with and approved by the departmental adviser.

TEACHING CERTIFICATION

Walla Walla College is a state-approved teacher education institution. As such, it is authorized to recommend graduates to the Washington State Department of Education for the provisional and standard certificates.

The course offerings also provide for teaching certificates currently available from the General Conference Department of Education. Information concerning specific certificates is available in the regular bulletin and/or from the certification consultant.

Requirements for Standard Certificate—Fifth Year

To be recommended for the Washington Standard Certificate, the candidate must fulfill the following requirements:

1. Hold a valid Washington provisional certificate
2. Complete two years of successful teaching
3. Complete 45 quarter credits beyond the bachelor's degree
4. Take History of the Pacific Northwest (for all elementary teachers and for those secondary teachers who plan to teach in the social sciences).

Of the 45 credits, 22½ credits must be in residence; 30 credits may be earned prior to the first year of teaching; at least 15 hours must be earned after the first year of teaching; a maximum of 12 credits may be earned by correspondence and/or extension study. Correspondence or extension credits must be from schools approved by the college recommending the candidate for certification.

The fifth-year program must be planned by authorized personnel in the Education Department. By careful programming, some students are able to complete the requirements for the master's degree in education at the same time they are fulfilling the requirements for the Standard Certificate.

PRINCIPAL'S CREDENTIAL

Walla Walla College provides course offerings leading to both the provisional and standard principal's credentials (elementary, secondary, and general).

COURSES IN EDUCATION

361. **LANGUAGE ARTS IN THE ELEMENTARY SCHOOL.** Materials, objectives and methods used in the teaching of the language arts in the elementary school—composition, spelling, reading, listening, speaking. Three credits.

362. **READING IN THE ELEMENTARY SCHOOL.** Objectives and methods in the teaching of reading in the elementary school. Three credits.

365. **SOCIAL STUDIES IN THE ELEMENTARY SCHOOL.** Materials, objectives and methods used in teaching social studies in the elementary school, chosen from the fields of geography, history, civics and economics. Three credits.

365LS. **LIBRARY MATERIALS FOR CHILDREN.** See Library Science.

369. **SCIENCE IN THE ELEMENTARY SCHOOL.** Objectives and materials used in the teaching of science at the primary and intermediate levels with particular emphasis on the application of the scientific method. Three credits.

373. **MATHEMATICS IN THE ELEMENTARY SCHOOL.** Methods of teaching modern mathematics in the elementary school. Three credits.

390. **EDUCATIONAL EVALUATION.** A practical introduction to principles and techniques of evaluating classroom activities in elementary and secondary schools. Three credits.

404. **HISTORY OF EDUCATION.** A survey of the history of education. Three credits.

411Eng. **LITERATURE IN THE ELEMENTARY SCHOOL.** See Department of English.

412Eng. **LITERATURE IN THE SECONDARY SCHOOL.** See Department of English.

426. **EDUCATIONAL GUIDANCE.** The philosophy, functions, organization, personnel and evaluation of the school guidance program. Three credits.

431H&PE. **ELEMENTARY SCHOOL HEALTH INSTRUCTION.** See Health and Physical Education.

431Soc. **SOCIOLOGY OF EDUCATION.** See Department of History, Political Science and Sociology.

439IE. **INDUSTRIAL ARTS FOR ELEMENTARY TEACHERS.** See Dept. of Industrial Ed. & Tech.

461. **METHODS OF AUDIO-VISUAL EDUCATION.** A survey of the methods of instruction through the use of audio-visual aids. The course provides training in equipment utilization, integration of techniques into instructional practices and selection and evaluation of audio-visual media. Two credits.

EDUCATION AND PSYCHOLOGY

462. **INSTRUCTIONAL AIDS—PRODUCTION.** Designed for teachers, audio-visual directors and others interested in laboratory experience in the production of instructional aids; emphasis is on course-of-study implementation through production techniques feasible at the local school level. By permission of instructor. Two credits.

465. **MICRO-TEACHING LABORATORY.** This course will consider basic principles of instruction and fundamental teaching procedures which are applicable at any grade level. Laboratory practice in certain teaching skills will be provided following the micro-teaching model. The class will meet for two hours one night each week and each student will participate weekly in a teaching laboratory. Three credits.

477, 478. 479. **INDEPENDENT STUDY IN EDUCATION.** Directed study in an approved area. The student will be required to read widely on an assigned subject, follow regular research methods, and present a paper showing competence in and extent of his study. Open to students preparing for teaching certification. Permission from the chairman of the department and supervising instructor is required. One to three credits any quarter. Maximum, three credits.

490. **TEACHING HIGH SCHOOL READING.** Basic principles of reading instruction; methods, materials and organization of the developmental and corrective reading programs in high school. Three credits.

492. **EDUCATION OF THE GIFTED.** Emphasis is placed upon the design of learning opportunities for gifted children in the light of psychological characteristics of such children. Three credits.

493. **SYSTEMS OF THOUGHT.** An intensive study of various aspects of philosophical thinking and their bearing upon education. Especially valuable in comprehending much current writing in education. (Ideally should precede or be taken in conjunction with 522.) Three credits.

495. **EARLY CHILDHOOD EDUCATION.** A critical review of the experimental literature of the cultivation of intellectual abilities in the young child with implications for the curriculum in nursery school and kindergarten. Prerequisites: Psychology 220 and Psychology 435. Three credits.

496. **ELEMENTARY SCHOOL GUIDANCE.** A study of the rationale for elementary school guidance with emphasis upon current research and issues. Attention will be focused upon the tools and techniques of both classroom and out-of-class guidance functions and services. Three credits.

497. **WORKSHOP IN AEROSPACE EDUCATION.** A study of the basic phases of the aerospace age, e.g., economic, social, geographical, military and technical. Special areas will be meteorology, navigation, international problems in space, astronaut training and public safety. Three credits.

498. **WORKSHOP IN SCIENCE INSTRUCTION.** A workshop designed to assist elementary and junior high school personnel to be cognizant of contemporary objectives in science instruction and to explore appropriate methods of motivation and teaching. A review of textual materials and teaching aids will be included. Three credits.

EDUCATION AND PSYCHOLOGY

Graduate Courses

500. **GRADUATE SEMINAR.** A weekly discussion period in which faculty and students explore significant issues in education. One credit.

504. **ELEMENTARY SCHOOL CURRICULUM.** A study of the elementary school curriculum, including objectives, essentials of a good program, varying curriculum patterns and appraisal of current practices. Three credits.

508. **SECONDARY SCHOOL CURRICULUM.** Overview of the secondary school curriculum, with emphasis on the various subject fields; organization of the school for curriculum development; educational objectives; the courses of study; evaluation of the secondary school curriculum. Three credits.

522. **PHILOSOPHY OF EDUCATION.** A study of the basic philosophies and development of educational thinking resulting in the formulation of aims and objectives of education for today's schools. Three credits.

525. **EDUCATION IN THE TWENTIETH CENTURY.** Historical background of modern education with emphasis on trends and developments in the twentieth century. Three credits.

526. **SCHOOL FINANCE.** A course designed for administrators, emphasizing origin and disbursement of school funds derived from tax sources and other revenues. Techniques of budget construction are studied and a general overview is given of the principles of financing education. Three credits.

527. **SCHOOL PLANNING AND CONSTRUCTION.** A survey of how to plan and build schools, including the involvement of the lay citizen. Selection of site, trends in design, function of buildings and plant, costs and obligations will be studied. Professional architects and engineers will be guest lecturers. Three credits.

535. **TEACHING OF REMEDIAL READING.** Diagnostic and remedial reading techniques, how to recognize reading difficulties and improve reading skills. Laboratory experience required. Three credits.

539. **SUPERVISION.** For principals, classroom teachers or those planning to be supervisors. Problems, responsibilities, privileges and duties of both teacher and supervisor, and the improvement of teachers in service through a comprehensive program of supervision. Three credits.

544. **ADMINISTRATION OF THE ELEMENTARY SCHOOL.** Organization, supervision and administration of elementary schools. Three credits.

550. **SCHOOL LAW.** Utilizing the case study method, this course is designed to acquaint the student with the legal basis for public and parochial school operation in the United States. Three credits.

551. **ADMINISTRATION OF THE SECONDARY SCHOOL.** Problems and procedures in the organization and administration of secondary schools. Three credits.

EDUCATION AND PSYCHOLOGY

556. **CURRICULUM PLANNING.** The relation of curricular materials to educational outcomes in terms of personal and social values. A brief review of curriculum investigations and their significance in the selection and evaluation of school materials and activities. Current practices in curriculum revision. Three credits.

558. **SCHOOL ACTIVITIES.** Designed to acquaint the student with the range of the school activities program; to understand and define the purposes of such activities; to provide him with a valid basis for evaluating existing or proposed activities; and to provide opportunity for intensive study of one activity. Two credits.

560. **ADMINISTRATIVE PRACTICUM.** Professional laboratory experience for candidates for an administrative credential. The course is designed to involve each candidate in a variety of practical administrative experiences and to assist in his successful induction into school leadership. Five credits.

561. **METHODS OF RESEARCH.** Procedures in the selection and evaluation of research projects and techniques in the analysis of research data. Three credits.

567. **COMPARATIVE EDUCATION.** A comparison of systems and philosophies of education in various parts of the world; emphasis on the role of cultural impacts. Three credits.

570. **TOPICS.** Selected topics in education involving research and reports in addition to regular class activities. Maximum, six credits. Three credits, any quarter.

581, 582, 583. **PROFESSIONAL PROJECT.** Selected areas of advanced study involving reading and research. Formal report required. Prerequisite: consent of department head and graduate standing. Maximum, six credits. Two, four or six credits; any quarter.

590. **THESIS.** Eight credits.

COURSES IN PSYCHOLOGY

Psychology 121 and 122 are prerequisite to all other courses in Psychology. (See the General Bulletin for course description.)

350. **ELEMENTARY STATISTICS.** Descriptive techniques and other selected fundamental procedures for summarizing and interpreting data from tests and research in the various disciplines. Three credits.

430. **PSYCHOLOGICAL TESTING.** Principles of test selection, administration, and interpretation are considered together with the contributions and limitation of the major types of standardized tests and inventories used in the behavioral sciences. Three credits.

431. **PSYCHOLOGY OF EXCEPTIONAL CHILDREN.** Characteristics and problems of all types of exceptional children with consideration of essential educational adaptation. Three credits.

EDUCATION AND PSYCHOLOGY

435. **CHILD PSYCHOLOGY.** Principles of growth as related to various phases of human development during the pre-adolescent years: physical, mental and emotional. Three credits.

436. **CHILD PSYCHOLOGY LABORATORY.** Prerequisite: 435. One credit.

440. **ADOLESCENT PSYCHOLOGY.** Principles of growth as related to various phases of human development during the adolescent years: physical, mental and emotional. Three credits.

442. **MOTIVATION.** A study of basic drives and causes of behavior in organisms with emphasis upon human behavior. This course includes a laboratory. Four credits.

444. **SOCIAL PSYCHOLOGY.** The dynamics of social interaction and interpersonal behavior with application to contemporary society. Three credits.

445. **SOCIAL PSYCHOLOGY LABORATORY.** Prerequisite: 444. One credit.

446. **PSYCHOLOGY OF PERSONALITY.** Major theories concerning personality development, assessment, and adjustment will be considered. Three credits.

449. **MENTAL HEALTH.** Physiological and psychological factors related to emotional maturity. Identification of mental health activities. Individual mental health, classroom climate, patterns of acceptance and rejection. Three credits.

477, 478, 479. **INDEPENDENT STUDY IN PSYCHOLOGY.** Directed, independent study in an approved area. Students will be required to read widely on an assigned subject, follow regular research methods and present a paper showing competence in and extent of his study. Open to majors and minors only. Permission from the chairman of the department and supervising instructor is required. One to three credits, any quarter. Maximum, three credits.

489. **VOCATIONAL DEVELOPMENT THEORY.** Theories of vocational choice and methods of studying occupations and occupational information are considered as they relate to educational and vocational guidance. Three credits.

Graduate Courses

501. **STATISTICS IN RESEARCH.** An introduction to probability and statistical inference including t-ratio, simple analysis of variance, chi square and other selected non-parametric statistics used in educational or psychological research. Prerequisite: 350 or equivalent. Three credits.

515. **COUNSELING THEORIES AND TECHNIQUES.** A study and application of the theories and techniques for counseling. Professional relationships and ethics are considered. By permission of the instructor. Three credits.

EDUCATION AND PSYCHOLOGY

518. **GROUP COUNSELING.** Theories and techniques of counseling in group situations. Prerequisite: 515. Two credits.

521. **PSYCHOLOGY OF LEARNING.** The course includes analysis of the mechanisms involved in the learning process. The physiological and psychological bases for functional learning are discussed, and the experimental evidence supporting psychological hypotheses is reviewed. Three credits.

531. **INDIVIDUAL TESTING—BINET.** A course designed to familiarize the student with the Stanford-Binet Intelligence scale, its administration, interpretation and the writing of the psychological report. Prerequisite: 430 and permission of the instructor. Two credits.

532. **INDIVIDUAL TESTING—WECHSLER.** A course designed to familiarize the student with the Wechsler Intelligence scales, WAIS, WISC, WPPSI, their administration, interpretation, and the writing of the report. Prerequisite: 430 and permission of the instructor. Three credits.

534. **ASSESSMENT OF THE INDIVIDUAL.** An introduction to and the use of methods applicable to assessment in schools where the counselor may be required to describe behavior. Experience in collecting data and writing case reports will be provided. Prerequisites: 430, 531 or 532. Three credits.

563. **FIELD EXPERIENCE IN GUIDANCE.** Provides broad experiences in the various guidance functions in actual field settings under the supervision of the college and qualified guidance workers. Prerequisite: Education 426. Three credits.

564. **ABNORMAL PSYCHOLOGY.** A study of behavioral deviations, therapeutic measures and theories. Three credits.

565. **PRACTICUM IN SCHOOL COUNSELING.** An opportunity for professional in-depth experience in the counseling function under the supervision of the college and qualified school counselors. Prerequisites: 515, 534, and department approval. Five credits.

SUPPORTING COURSES

Selected courses are available, with advisement, from the following departments: Art, Biology, Business and Economics, Chemistry, English, Health and Physical Education, History, Political Science and Sociology, Home Economics, Journalism, Library Science, Mathematics, Modern Languages, Music, Office Administration, Physics and Speech.

ART

361-362-363. **ADVANCED SCULPTURE.** Prerequisites: 261, 262, 263. Two credits.

371, 372, 373. **FILMMAKING.** Two credits.

477, 478, 479. **INDEPENDENT STUDY IN ART.** Open to majors and minors only. One to three credits any quarter. Maximum, three credits.

BIOLOGY (See pages 19 to 23)

BUSINESS AND ECONOMICS

361. **PRICE THEORY.** Prerequisite: 261, 262, 263. Five credits.

362. **AGGREGATE ECONOMIC ANALYSIS.** Prerequisite: 261, 262, 263. Five credits.

366. **DEVELOPMENT OF ECONOMIC THOUGHT.** Prerequisite: 361, 362. Five credits.

369. **BUSINESS CYCLES.** Prerequisite: 361, 362. Five credits.

375. **BUSINESS FINANCE.** Three credits.

414. **BUSINESS MANAGEMENT.** Three credits.

431, 432, 433. **ACCOUNTING PROBLEMS.** Prerequisite: 233 or permission from the instructor. Three credits.

434. **FUND ACCOUNTING.** Prerequisite: 133. Three credits.

439. **AUDITING PROCEDURE.** Prerequisite: 233 or permission from the instructor. Three credits.

441. **INVESTMENTS.** Three credits.

442. **CREDIT ADMINISTRATION.** Three credits.

453. **HUMAN RELATIONS IN MANAGEMENT.** Three credits.

462. **COMPARATIVE ECONOMIC SYSTEMS.** Prerequisite: 263. Three credits.

465. **ECONOMICS OF FOREIGN TRADE.** Three credits.

467-468-469. **MONEY AND BANKING.** Two credits.

477, 478, 479. **INDEPENDENT STUDY IN BUSINESS ADMINISTRATION.** Open only to majors and minors. Permission from the chairman of the department required. One to three credits any quarter. Maximum, three credits.

492. **SEMINAR.** Open to majors only. One credit.

CHEMISTRY

406, 407. **BIOCHEMISTRY.** Prerequisite: 321-322-323. Four credits, spring; three credits, autumn.

SUPPORTING COURSES

427, 428. **ADVANCED ORGANIC CHEMISTRY.** Prerequisite: 321-322-323. Two credits.

461, 463. **ADVANCED ANALYTICAL CHEMISTRY.** Prerequisite: 246. Three credits.

477, 478, 479. **INDEPENDENT STUDY IN CHEMISTRY.** Open only to majors and minors. Permission from the chairman of the department required. One to three credits any quarter. Maximum, three credits.

ENGLISH

350. **DIRECTED READING.** Prerequisites: 224, 225, 226 or 244, 245, 246 or 251, 252, 253. One or two credits any quarter. Maximum, three credits.

354, 355, 356. **TWENTIETH CENTURY LITERATURE.** Prerequisites: 224, 225, 226 and 244, 245, 246. Two credits.

361. **CLASSICAL BACKGROUNDS.** Prerequisites: 224, 225, 226 or 244, 245, 246 or 251, 252, 253. Three credits.

371. **MODERN ENGLISH GRAMMAR.** Three credits.

385, 386. **CREATIVE WRITING.** Three credits.

401. **EXPOSITORY PROSE.** Two credits.

404, 405, 406. **THE VICTORIAN PERIOD.** Prerequisite: 244, 245, 246. Three credits.

407, 408, 409. **AMERICAN LITERARY MASTERS.** Prerequisites: 224, 225, 226. Three credits.

411. **LITERATURE IN THE ELEMENTARY SCHOOL.** Three credits.

412. **LITERATURE IN THE SECONDARY SCHOOL.** Three credits.

421, 422, 423. **THE ROMANTIC PERIOD.** Prerequisite: 244, 245, 246. Two credits.

425. **INTRODUCTION TO ENGLISH LINGUISTICS.** Three credits.

426. **HISTORY OF THE ENGLISH LANGUAGE.** Three credits.

427, 428, 429. **RESTORATION AND NEOCLASSIC LITERATURE.** Prerequisite: 244, 245, 246. Two credits.

441, 442, 443. **OLD AND MIDDLE ENGLISH LITERATURE.** Prerequisite: 244, 245, 246. Three credits.

453. **AMERICAN LITERATURE BACKGROUNDS.** Prerequisite: 224, 225, 226. Three credits.

464, 465, 466. **RENAISSANCE LITERATURE.** Prerequisite: 244, 245, 246. Three credits.

468. **LITERATURE OF THE BIBLE.** Prerequisite: 224, 225, 226 or 244, 245, 246 or 251, 252, 253. Three credits.

471. **METHODS OF TEACHING LITERATURE IN THE SECONDARY SCHOOL.** Two credits.

472. **METHODS OF TEACHING COMPOSITION IN THE SECONDARY SCHOOL.** Prerequisite: 371 or permission of the instructor. Two credits.

491. **SEMINAR.** Three credits.

SUPPORTING COURSES

HEALTH AND PHYSICAL EDUCATION

- 350. **AQUATICS.** Three credits.
- 351. **SCHOOL HEALTH PROGRAM.** Three credits.
- 363. **PHYSIOLOGY OF EXERCISE.** Prerequisite: Biological Sciences 203. Three credits.
- 403. **LEADERSHIP IN CAMPING AND CAMPCRAFT.** Prerequisite: 343 and permission of instructor. Two credits.
- 420. **TEACHING TECHNIQUES OF PHYSICAL EDUCATION ACTIVITIES.** Two credits.
- 422. **FOUNDATIONS OF PHYSICAL EDUCATION.** Three credits.
- 423. **TESTS AND MEASUREMENTS IN PHYSICAL EDUCATION.** Prerequisite: Education 390. Three credits.
- 431. **ELEMENTARY SCHOOL HEALTH INSTRUCTION.** Three credits.
- 432. **SECONDARY SCHOOL HEALTH INSTRUCTION.** Three credits.
- 451. **ADMINISTRATION OF PHYSICAL EDUCATION.** Three credits.
- 472. **METHODS OF TEACHING PHYSICAL EDUCATION.** Three credits.
- 477, 478, 479. **INDEPENDENT STUDY IN HEALTH AND PHYSICAL EDUCATION.** Open only to majors and minors. Permission from the chairman of the department required. One to three credits any quarter. Maximum, three credits.
- 492, 493. **SEMINAR.** One credit.

HISTORY, POLITICAL SCIENCE AND SOCIOLOGY

HISTORY

- 358. **WORLD GEOGRAPHY.** Three credits.
- 404, 405, 406. **HISTORY OF ENGLAND.** Two credits.
- 407, 408. **EUROPE SINCE 1815.** Prerequisite: 101, 102, 103. Five credits.
- 421, 422, 423. **HISTORY OF RUSSIA.** Three credits.
- 424, 425. **THE AMERICAN FRONTIER.** Three credits.
- 426. **THE EARLY CHRISTIAN ERA.** Three credits.
- 427. **THE LATE MIDDLE AGES.** Three credits.
- 428. **THE RENAISSANCE.** Three credits.
- 429. **THE REFORMATION.** Three credits.
- 435. **HISTORY OF MODERN GERMANY.** Prerequisite: 101, 102, 103. Five credits.
- 445. **THE AMERICAN CIVIL WAR AND RECONSTRUCTION.** Prerequisite: 201, 202, 203. Three credits.
- 446. **HISTORY OF THE PACIFIC NORTHWEST.** Three credits.
- 447, 448, 449. **THE MAKING OF MODERN AMERICA SINCE 1877.** Prerequisite: 201, 202, 203. Three credits.

SUPPORTING COURSES

457, 458, 459. **SOCIAL AND INTELLECTUAL HISTORY OF THE UNITED STATES.** Prerequisites: 201, 202, 203. Three credits.

467, 468, 469. **HISTORY OF LATIN AMERICA.** Two credits.

471. **METHODS OF TEACHING SOCIAL SCIENCE.** Three credits.

477, 478, 479. **INDEPENDENT STUDY IN HISTORY.** Open only to majors and minors. Instructor's approval required. One to three credits any quarter. Maximum, three credits.

491-492. **SEMINAR.** Open to majors and minors. Two credits.

POLITICAL SCIENCE

401. **CONSTITUTIONAL HISTORY.** Three credits.

402. **WORLD POLITICS.** Three credits.

414, 415, 416. **AMERICAN DIPLOMATIC HISTORY.** Two credits.

424, 425, 426. **POLITICAL HISTORY AND THEORY.** Three credits.

477, 478, 479. **INDEPENDENT STUDY IN POLITICAL SCIENCE.** Open only to minors. Instructor's approval required. One to three credits any quarter. Maximum, three credits.

SOCIOLOGY

351. **SOCIOLOGY OF THE COMMUNITY.** Prerequisite: 204, 205. Three credits.

358. **CRIMINOLOGY.** Two credits.

359. **JUVENILE DELINQUENCY.** Two credits.

369. **URBAN SOCIOLOGY.** Three credits.

431. **SOCIOLOGY OF EDUCATION.** Two credits.

432. **SOCIOLOGY OF RELIGION.** Prerequisite: 204, 205. Two credits.

433. **SOCIOLOGY OF LAW.** Two credits.

465. **HISTORY OF SOCIOLOGICAL THEORY.** Three credits.

466. **METHODS OF SOCIAL RESEARCH.** Prerequisites: 204, 205, Education 350. Three credits.

477, 478, 479. **INDEPENDENT STUDY IN SOCIOLOGY.** Open only to majors and minors. Instructor's approval required. One to three credits. Maximum, three credits.

HOME ECONOMICS

382. **CHILD DEVELOPMENT.** Three credits.

403. **TEXTILE DESIGN.** Prerequisite: 302 or equivalent. Three credits.

421. **ADVANCED FOOD PREPARATION.** Prerequisites: 101, 102, 103 and Chemistry 101-102-103 or 161-162-163 or equivalent. Three credits.

422. **EXPERIMENTAL COOKERY.** Prerequisites: 101, 102, 103 and Chemistry 101-102-103 or 161-162-163 or equivalent. Three credits.

SUPPORTING COURSES

424, 425. **INTERIOR DECORATION.** Must be taken in sequence unless by permission of instructor. Three credits.

437. **COMMUNITY NUTRITION.** Prerequisite: 220 and permission of instructor. Three credits.

442. **ADVANCED NUTRITION.** Prerequisites: 101, 102, 103 and 220; Chemistry 101-102-103 or 161-162-163. Three credits.

443. **DIET IN DISEASE.** Prerequisites: 101, 102, 103 and 220 or equivalent. Three credits.

447. **INSTITUTION FOOD PURCHASING.** Prerequisite: 101, 102, 103. Three credits.

461-462. **TAILORING.** Prerequisite: 241, 242, 243 or equivalent. Two credits.

471. **METHODS OF TEACHING HOME ECONOMICS.** Three credits.

477, 478, 479. **INDEPENDENT STUDY IN HOME ECONOMICS.** One to three credits any quarter. Maximum, three credits.

486. **ADVANCED INTERIOR DECORATION.** Prerequisites: 222, 223 and 424, 425 or equivalent. Three credits.

493. **SEMINAR.** One credit.

INDUSTRIAL EDUCATION AND TECHNOLOGY

351, 352. **RADIO COMMUNICATIONS.** Prerequisite: 271, 272, 273 or equivalent, and 331 recommended. Four credits.

356. **AUTOMOTIVE AIR CONDITIONING.** Three credits.

362. **APPLIED PHOTOGRAPHY.** Prerequisite: 161 or equivalent. Three credits.

366. **INDUSTRIAL MATERIALS.** Three credits.

370. **PRESS PHOTOGRAPHY.** Prerequisite: 362 or equivalent. One credit.

371, 372. **INDUSTRIAL ELECTRONICS.** Prerequisite: 271, 272, 273 or equivalent. Two credits.

381, 382, 383. **MACHINE TOOL PRACTICE II.** Prerequisite: 244, 245-246 or equivalent. Three credits.

387. **COURSE CONSTRUCTION.** Three credits.

389. **SHOP ADMINISTRATION AND PLANNING.** Three credits.

399. **OIL HYDRAULICS.** Three credits.

411, 412, 413. **TELEVISION SYSTEMS AND CIRCUIT ANALYSIS.** Prerequisite: 271, 272, 273 or equivalent. Three credits.

416. **ADVANCED LITHOGRAPHY.** Prerequisite: 327-328-329 or equivalent. Three credits.

421, 422, 423. **DRIVER TEACHER EDUCATION.** Three credits.

439. **INDUSTRIAL ARTS FOR ELEMENTARY TEACHERS.** Three credits.

447. **HISTORY AND PHILOSOPHY OF INDUSTRIAL EDUCATION.** Three credits.

472. **METHODS OF TEACHING INDUSTRIAL ARTS.** Three credits.

477, 478, 479. **INDEPENDENT STUDY IN INDUSTRIAL EDUCATION.** Prerequisite: lower division work in same area for supervisory or teaching-aid construction. Six credits maximum from this and/or Special Projects.

SUPPORTING COURSES

484, 485, 486. **SPECIAL PROJECTS.** Prerequisite: lower division work in chosen area. Six credits maximum from this and/or Independent Study in Industrial Education.

488. **SENIOR PROBLEM.** One credit.

JOURNALISM

351. **SEMINAR IN MAGAZINE JOURNALISM.** Three credits.

352, 353. **MAGAZINE EDITING.** Prerequisite: 341, 342, 343. Three credits.

382. **EDITORIAL WRITING.** Two credits.

383. **SEMINAR IN RELIGIOUS JOURNALISM.** Three credits.

385, 386. **RELIGIOUS WRITING.** Three credits.

412, 413. **NARRATIVE WRITING.** Three credits.

417. **HISTORY OF JOURNALISM.** Three credits.

426. **SCHOOL PUBLICATIONS.** Two credits.

477, 478, 479. **INDEPENDENT STUDY IN JOURNALISM.** Open only to majors and minors. Instructor's approval required. One to three credits any quarter. Maximum, three credits.

LIBRARY SCIENCE

355. **HISTORY OF BOOKS AND PRINTING.** Three credits.

365. **LIBRARY MATERIALS FOR CHILDREN.** Three credits.

382. **SCHOOL LIBRARY AS A MATERIALS CENTER.** Three credits.

384. **ADVANCED CATALOGING AND CLASSIFICATION.** Prerequisite: 286. Three credits.

413. **SELECTION OF LIBRARY MATERIALS.** Three credits.

461. **REFERENCE MATERIALS IN THE SOCIAL SCIENCES.** Prerequisite: 271. Three credits.

464. **REFERENCE MATERIALS IN THE HUMANITIES.** Prerequisite: 271. Three credits.

467. **REFERENCE MATERIALS IN THE SCIENCES.** Prerequisite: 271. Three credits.

472. **METHODS OF LIBRARY INSTRUCTION.** Three credits.

477, 478, 479. **INDEPENDENT STUDY IN LIBRARY SCIENCE.** Open only to minors. Permission from the chairman of the department required. One to three credits any quarter. Maximum, three credits.

483. **ADMINISTRATION OF SCHOOL LIBRARIES.** Three credits.

490. **DIRECTED FIELD WORK.** One to three credits any quarter. Maximum, three credits.

493. **SEMINAR IN SCHOOL LIBRARY PROBLEMS.** Three credits.

SUPPORTING COURSES

MATHEMATICS

351, 352, 353. **ADVANCED CALCULUS.** Prerequisite: 283. Three credits.

411, 412, 413. **MODERN ALGEBRA.** Permission of the instructor required. Four credits.

471. **METHODS OF TEACHING MATHEMATICS.** Three credits.

477, 478, 479. **INDEPENDENT STUDY IN MATHEMATICS.** Open only to majors and minors. Permission from the chairman of the department required. One to three credits. Maximum three credits.

MODERN LANGUAGES

402. **SPANISH APPLIED LINGUISTICS.** Three credits.

403. **MODERN GERMAN LITERATURE.** Four credits.

404, 405, 406. **FRENCH DIRECTED READING.** Prerequisite: 304-305-306. One to three credits. Maximum, six credits.

408. **ROMANTICISM AND REALISM.** Four credits.

411, 412, 413. **GERMAN DIRECTED READING.** Prerequisite: 317-318-319. One to three credits. Maximum, six credits.

414, 415, 416. **SPANISH DIRECTED READING.** Prerequisite: 341-342-343. One to three credits. Maximum, six credits.

419. **THE SEVENTEENTH CENTURY.** Four credits.

421. **GERMAN CLASSICISM.** Four credits.

422. **GERMAN ROMANTICISM.** Four credits.

424, 425, 426. **CONTEMPORARY SPANISH LITERATURE.** Two credits.

431, 432, 433. **LATIN AMERICAN LITERATURE.** Three credits.

438. **MODERN PERIOD OF FRENCH LITERATURE.** Four credits.

471. **METHODS OF TEACHING MODERN LANGUAGES.** Three credits.

477, 478, 479. **INDEPENDENT STUDY IN MODERN LANGUAGES.** Open only to majors and minors. Permission from the chairman of the department required. One to three credits any quarter. Maximum, three credits.

MUSIC

382. **VOCAL TECHNIQUES.** Three credits.

387. **BASIC CONDUCTING.** Two credits.

388. **INSTRUMENTAL CONDUCTING.** Prerequisite: 387. Two credits.

389. **CHORAL CONDUCTING.** Prerequisite: 387. Two credits.

406. **COUNTERPOINT.** Prerequisite: 304 and 305. Three credits.

SUPPORTING COURSES

409. **ORCHESTRATION.** Prerequisite: 304 and 305. Three credits.
- 411, 412, 413. **COMPOSITION I.** Prerequisite: 204-205-206 and/or the permission of the instructor. One or two credits.
415. **COMPOSITION II.** Prerequisite: 411, 412, 413 and/or permission of instructor. One to three credits. Maximum, three credits.
472. **THE TEACHING OF MUSIC IN THE ELEMENTARY SCHOOL.** Three credits.
473. **THE TEACHING OF MUSIC IN THE SECONDARY SCHOOL.** Three credits.
- 477, 478, 479. **INDEPENDENT STUDY IN MUSIC.** Open only to majors and minors. Instructor's approval required. One to three credits any quarter. Maximum, three credits.
- 481, 482, 483. **SELECTED TOPICS IN MUSIC.** One to three credits any quarter. Maximum, three credits.

OFFICE ADMINISTRATION

409. **ADVANCED SECRETARIAL PROCEDURES.** Three credits.
- 417, 418, 419. **THE PROFESSIONAL SECRETARY.** Three credits.
427. **ADVANCED TRANSCRIPTION.** Three credits.
428. **SHORTHAND SPEED BUILDING.** Three credits.
447. **MEDICAL OFFICE PROCEDURES.** Three credits.
- 448, 449. **MEDICAL TERMINOLOGY.** Prerequisite: Biology 202, 203 or equivalent substitution with consent of department chairman. Three credits.
463. **THE LEGAL SECRETARY.** Two credits.
471. **METHODS OF TEACHING TYPEWRITING AND SHORTHAND.** Four credits.
474. **THE DENOMINATIONAL SECRETARY.** Two credits.
475. **METHODS OF TEACHING BOOKKEEPING.** Two credits.
- 477, 478, 479. **INDEPENDENT STUDY IN OFFICE ADMINISTRATION.** One to three credits any quarter. Maximum, three credits.
491. **OFFICE ADMINISTRATION SEMINAR.** One to three credits.

PHYSICS

350. **PHYSICS AND MODERN LIFE.** Three credits.
- 352, 353. **RADIOISOTOPE RESEARCH TECHNIQUES.** Prerequisite: 211, 212, 213 or Chemistry 161-162-163. Two credits.
- 411, 412, 413. **ATOMIC AND NUCLEAR PHYSICS.** Prerequisite: 301, 302, 303. Corequisite: 414, 415, 416; 417, 418, 419. Three credits.

SUPPORTING COURSES

- 414, 415, 416. **EXPERIMENTAL PHYSICS.** One credit.
- 417, 418, 419. **PHYSICS SEMINAR II.** One credit.
- 421, 422, 423. **THEORETICAL MECHANICS.** Corequisite: 417, 418, 419. Three credits.
471. **METHODS OF TEACHING PHYSICAL SCIENCE.** Three credits.
- 477, 478, 479. **INDEPENDENT STUDY IN PHYSICS.** Open only to majors and minors. Permission from the chairman of the department required. One to three credits any quarter. Maximum, three credits.

SPEECH

352. **PUBLIC BROADCASTING.** Three credits.
363. **PROJECTS IN INTERPRETATION.** Prerequisite: 211. Three credits.
- 381, 382. **PULPIT ADDRESS.** Three credits.
401. **INTRODUCTION TO GENERAL SEMANTICS.** Prerequisites: 101-102 or equivalent or permission of the instructor. Two credits.
422. **SPEECH COMPOSITION AND ANALYSIS.** Prerequisite: 101-102. Three credits.
443. **PERSUASIVE SPEAKING.** Prerequisite: 101-102. Three credits.
453. **RHETORIC AND PUBLIC ADDRESS.** Prerequisite: 101-102. Three credits.
472. **METHODS OF TEACHING SPEECH.** Three credits.
- 477, 478, 479. **INDEPENDENT STUDY IN SPEECH.** Permission from the chairman of the department required. One to three credits. Maximum, three credits.
497. **SEMINAR IN SPEECH.** One credit.

SPEECH PATHOLOGY AND AUDIOLOGY

384. **BASIC AUDIOLOGY.** Prerequisite: 210. Three credits.
385. **NON-ORGANIC VOICE AND ARTICULATION PROBLEMS.** Prerequisite: 210. Four Credits.
386. **ORGANIC SPEECH PATHOLOGIES.** Prerequisite: 385. Four credits.
387. **STUTTERING: THEORIES AND THERAPIES.** Prerequisite: 385, 386. Four credits.
388. **SPEECH READING AND AUDITORY TRAINING.** Three credits.
393. **BEGINNING CLINICAL PRACTICUM.** Prerequisite: 386, 387. Two credits.
410. **ADVANCED CLINICAL PRACTICUM.** Prerequisite: 393, or permission from the instructor. One to three credits. Maximum, six credits.
441. **ADVANCED AUDIOLOGY.** Prerequisite: 384. Three credits.
461. **DIAGNOSIS IN SPEECH PATHOLOGY.** Prerequisite: 393. Three credits.
473. **CLEFT PALATE SPEECH.** Prerequisite: 386. Three credits.
474. **APHASIA—PATHOLOGY AND THERAPY.** Prerequisite: 386. Three credits.

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