

Library

GRADUATE CATALOG

California State College

1977-78



THE GRADUATE DEGREE PROGRAMS

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1977-1979

MASTER OF EDUCATION PROGRAMS

Administration
(Elementary Principal and Secondary Principal)
Biology
Chemistry
Counselor Education
(Elementary Guidance and Secondary Guidance)
English
Geography
Industrial Arts Education
Mathematics
Mentally and/or Physically Handicapped
Reading Specialist
Social Studies
Speech and Hearing

MASTER OF ARTS PROGRAMS

English
Geography
History
Mathematics
Political Science

MASTER OF SCIENCE PROGRAMS

Biology
School Psychology

SUPERVISION CERTIFICATES

Industrial Arts
Reading

SCHOOL PSYCHOLOGIST CERTIFICATE

CALIFORNIA STATE COLLEGE
California, Pennsylvania 15419



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CALIFORNIA STATE COLLEGE
IS A MEMBER
OF THE
AMERICAN ASSOCIATION OF COLLEGES
FOR TEACHER EDUCATION
AND IS FULLY ACCREDITED BY
THE MIDDLE STATES ASSOCIATION OF COLLEGES
AND SECONDARY SCHOOLS
AND
CERTAIN PROGRAMS ARE ACCREDITED BY
THE NATIONAL COUNCIL
FOR THE ACCREDITATION OF TEACHER EDUCATION

California State College is committed to affirmative action to assure equal opportunity for all persons regardless of race, color, religion, national origin, ancestry, or sex.

I The College



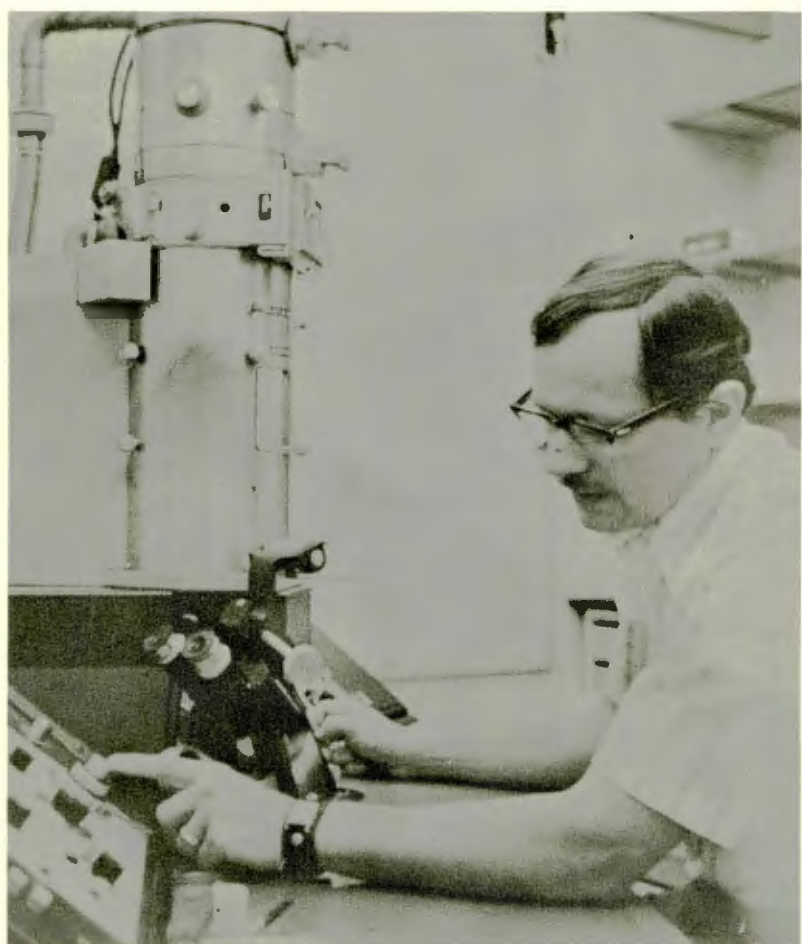
The College

California State College is a state-owned multipurpose institution offering degrees in teacher education and arts and sciences. The College was founded in 1852 and became a state normal school in 1914. In 1929 the school became a four-year degree-granting institution under the name of California State Teachers College. In 1959, the college assumed its present name as a reflection of its expanded purposes. Graduate studies were initiated in 1961. The Arts and Sciences Program was initiated in September, 1962. Further expansion of the college's missions and goals occurred in 1974, when the schools of Science and Technology and Continuing Education were begun.

The college is in the Borough of California, a community of approximately six thousand residents located in Washington County on the west bank of the Monongahela River, approximately a one-hour drive south of Pittsburgh. The college is accessible from the north via Interstate 70 and State Route 88, and from the south by U.S. Route 40 (the old National Pike) and State Route 88. A new (currently under construction) limited access highway will eventually link the campus directly with Interstate 70 and other limited access highways. The college is approximately one hour from Pittsburgh's International Airport.

The existing campus consists of thirty-three buildings situated on 148 acres. A stadium, tennis courts, baseball diamonds, and track and picnic facilities are located at the College Farm approximately two miles south of the main campus. In addition, groundbreaking will take place in October 1976 for a new multi-million dollar library.

The geographic location of the college gives the resident student opportunities to explore and pursue a wide variety of activities. Located in the Appalachian Plateau, an area of low rolling hills, the college is a short drive from camping, hiking, fishing, hunting, white water rafting and canoeing, and skiing activities in the Laurel Mountains. In addition to cultural activities provided on campus, the student has easy access to the Pittsburgh metropolitan area. This easy access provides the student an opportunity to enjoy the Pittsburgh Symphony, the Pittsburgh Ballet, the Civic Light Opera, the Pittsburgh Steelers, Penguins, Pirates, Triangles, various museums and all of the excitements and attractions of a major metropolitan area.



II Graduate Study

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Graduate Study

HISTORY OF THE GRADUATE PROGRAM

Graduate work leading to the degree of Master of Education was inaugurated at California State College in the fall trimester of 1961. The initial program included graduate study in the Elementary and Industrial Arts Curriculums.

Beginning with the summer of 1964, the Master of Education programs were extended to include the following areas of specialization: English (Summer, 1964), Biology (Fall, 1964), Social Studies (Spring, 1965), Speech and Hearing and Mentally Retarded (Fall, 1966), Socially and Emotionally Maladjusted (Summer, 1967), Chemistry and Mathematics (Spring, 1967), Elementary Guidance, Geography, and Reading Specialist (Fall, 1968).

In the fall of 1968, the following Master of Arts programs were inaugurated: English, History, and Political Science. Also in the fall of 1968, the Master of Science program in Biology was added to the Graduate Studies Program. In the fall of 1970 the Master of Science degree and certification program in School Psychology was initiated.

In the fall of 1971 the Reading Supervisor and Industrial Arts Supervisor Certification programs were added. The Master of Arts in Math and Geography were inaugurated in Summer of 1973.

Programs leading to the Master of Education degree and certification in Administration (Elementary Principal and Secondary Principal) and Secondary Guidance were inaugurated in the fall of 1976.

OBJECTIVES FOR GRADUATE STUDY

Master of Education

AREA OF GENERAL EDUCATION:

1. To present studies of cultural importance for the graduate student to explore for his own appreciation and understanding.
2. To help the student develop modes of inquiry and substantive understandings which will develop a more critical and creative attitude about humanistic principles.

AREA OF SPECIALIZATION:

1. To increase the competency of teachers.
2. To provide teachers with an incentive to continue professional growth.

3. To enable teachers to assume more responsible leadership roles in the educational program.
4. To emphasize basic research techniques and their use for improving instruction.
5. To provide a further understanding of the teaching and learning processes.

Master of Arts and Master of Science

1. To offer opportunity for graduate students to increase their competence and basic understanding of their disciplines.
2. To emphasize basic research techniques.
3. To offer opportunity for the improvement of skills in presenting the results of research as a thesis.
4. To offer opportunity for graduate students to pursue in depth, selected topics in their fields of specialization.
5. To provide graduate students with an incentive for academic growth beyond the Master's degree.

REQUIREMENTS FOR ADMISSION TO GRADUATE CLASSES

The following policy established by the Graduate Council governs admission to graduate classes:

1. The applicant shall present a bachelor's degree from a college or university that is accredited by the National Commission on Accreditation or the appropriate regional accrediting agency.
2. The applicant shall present an official transcript of his work showing at least a 2.5 quality point value of his undergraduate work as determined by a grading system based on a four-point scale.
3. Applicants who fail to satisfy the foregoing requirements may be admitted conditionally upon the basis of the Miller Analogies Test.
4. Graduate study does not carry with it admission to candidacy for the Master's degree. Admission to candidacy for the degree can be made only after six semester hours of graduate work have been successfully completed at California State College.
5. For the Master of Education degree in most programs, the applicant must have a teaching certificate with certification in the field in which he wishes to enroll for graduate study. For the Master of Arts and Master of Science degrees, a major or evidence of adequate

undergraduate preparation in the field in which the applicant expects to pursue graduate work is required. The adequacy of preparation will be determined by the individual departments.

6. Additional qualifications are required in certain programs. (Check for details under the description of individual programs.)

ADMISSION TO CERTIFICATION PROGRAMS BEYOND THE MASTER'S DEGREE

California State College offers the following certification programs which require additional experiences and credits beyond the Master's degree for developing appropriate competencies in the specific areas of specialization: (1) Administration (Elementary Principal and Secondary Principal), (2) Industrial Arts Supervisor, (3) Reading Supervisor, and (4) School Psychologist.

Applicants for the above certification programs must have completed all the prerequisites for the program and all Special requirements. Applicants for the Administration Programs must have their graduate work and experiences evaluated in order to prescribe the necessary learning experiences for fulfilling the competency standards of the programs. Applicants for the Industrial Arts Supervisor must have completed the Master's degree in Industrial Arts, and applicants for the Reading Supervisor must have completed the Master's degree and must have a Reading Specialist Certificate. For the School Psychologist certification the applicant must have completed a Master's degree in School Psychology or related fields and must obtain a minimum of thirty (30) additional credits in special experiences and courses in the School Psychology program.

Before beginning any of the above four certification programs, the applicant must file an application with the Graduate Office. The Graduate Office consults with the department concerned. Based on the department's evaluation of the applicant's background and the availability of faculty and facilities, the department and the Graduate Office render a decision concerning the possible admission of the applicant to the requested certification program.

PROCEDURE FOR ADMISSION TO GRADUATE CLASSES

1. Each applicant will file with the Graduate Office an application for admission to graduate classes as early as possible and preferably not later than three weeks prior to the session in which he wishes to

begin his graduate program. Application forms may be obtained by writing to the Dean of Graduate Studies.

2. At the same time the applicant should have official transcripts sent to the Dean of Graduate Studies by the institutions at which he has taken undergraduate and graduate work. It is not necessary to submit a transcript of work taken at California.
3. An applicant may request an appointment with the Associate Dean of Graduate Studies or the Dean of Graduate Studies.
4. For detailed information pertaining to particular programs the applicant should contact the chairman or coordinator of the department responsible for the program.

APPLICATION FORMS AND ADDITIONAL INFORMATION

Application forms and additional information concerning the graduate program may be obtained by writing to the Office of the Graduate School, California State College, California, Pennsylvania.

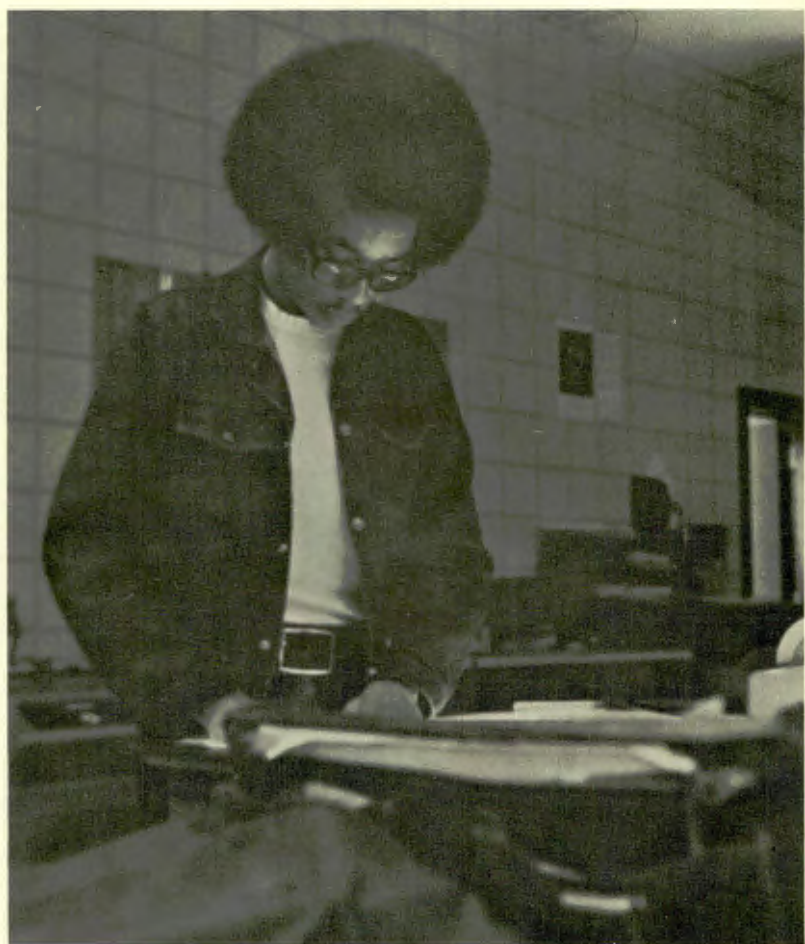
REQUIREMENTS FOR ADMISSION TO CANDIDACY FOR THE MASTER'S DEGREE

In order to complete a program of graduate study, leading to the Master's degree, the student must apply for and be admitted to candidacy for the degree. The following policy governs admission to candidacy.

1. The applicant shall file with the Dean of Graduate Studies an official application and a letter applying for admission to candidacy.
2. The applicant shall have completed not less than six (6) semester hours nor more than twelve (12) semester hours of graduate credit at California State College at the time of making application for degree candidacy. Credits completed in excess of twelve (12) semester hours before applying for degree candidacy will not be accepted for inclusion in a degree program.
3. The applicant shall have maintained a grade point average of not less than 3.0 (equivalent to an average of B) in graduate courses.
4. Approval for admission to candidacy for the Master's degree will be determined by individual departments. Special requirements such as interviews and tests, vary from department to department. For particulars, the applicant should consult with his/her department.
5. Admission to candidacy requires the approval of the Dean of Graduate Studies. The college reserves the right to refuse the applicant's request for admission to candidacy for the Master's degree.

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General Information

STUDENT RESPONSIBILITY

RESPONSIBILITY FOR KNOWING AND FOLLOWING THE ACADEMIC RULES AND REGULATIONS, INCLUDING REQUIREMENTS FOR GRADUATION, RESTS WITH THE STUDENT. FACULTY ADVISERS ASSIST STUDENTS IN PLANNING THEIR ACADEMIC PROGRAMS AND RESEARCH REQUIREMENTS, BUT ARE NOT EXPECTED TO RELIEVE THE STUDENTS OF THEIR RESPONSIBILITY.

PLANNING A PROGRAM

As soon as the applicant has been admitted to the Graduate Studies Program, he will be referred to the appropriate department for advisement. Each graduate student's program will be planned specifically for him in conference with a schedule adviser. A research adviser will be assigned to aid the student with his research after he has been admitted to candidacy for the Master's degree. The candidate may request a research adviser in his area of study with the approval of the department head.

The student is required to consult with his adviser throughout his graduate program on a regularly scheduled program basis. His program of studies must be approved by his adviser prior to registration.

COURSE LOAD

Part-time graduate students will be limited to six (6) semester hours of graduate work per semester.

During the summer sessions a graduate student may earn a maximum of twelve (12) semester hours of graduate work (maximum 6 credits per five-week session).

A full-time graduate student may carry nine (9) to fifteen (15) semester hours of graduate work within a sixteen-week period.

RESIDENCE REQUIREMENT

A total of thirty — thirty-six (30—36) semester hours of work, depending on the option selected, in addition to the fulfillment of other requirements and conditions stipulated in this bulletin, will be required for the Master's degree. A total of twenty-four (24) semester hours must be earned in residence at California State College.

Students will be expected to complete part of their degree programs during the summer sessions when full time could be devoted to graduate study under conditions most conducive to study. The final six (6) hours in any program must be completed on the California campus.

TRANSFER OF CREDIT

A maximum of six (6) semester hours of resident (on main campus) graduate work done at another accredited graduate school may be transferred to the Graduate Program at California State College. Transferred credits must represent courses that fit the program of California State College and which have been passed with a grade of at least "B." Transfer credits to be acceptable must fall within five years of the date of the application for admission to Graduate Studies. Extension credits are not accepted for transfer.

Students already enrolled at California State College, who wish to take work at another institution for transfer to California, must have program approval by the adviser and by the Dean of Graduate Studies before enrolling at the other institution. Applications for transfer of credits, which should be completed and returned to the Graduate Office prior to taking course work elsewhere, are available in the Graduate Office.

FEES

Application Fee	\$10.00
Enrollment Fee (Pa. residents)	\$43.00
	(per graduate credit)
Enrollment Fee (Out-of-state)	\$63.00
	(per graduate credit)
Enrollment Fee	9 or more credits
(Pa. residents)	\$400 (per semester)
(Out-of-state)	\$750 (per semester)
Activity Fee	\$5.00
Graduate Degree Fee	\$5.00
Late Registration	\$10.00
Assessment of Student Union Building Fee	
9 or more credits	\$10.00
7-9 credits500
1-6 credits	2.50

Graduate students are also required to pay any fees (activity fee, library fines, etc.) required of undergraduate students.

Checks or money orders must be written in the exact amount of the payment. Make checks or money orders payable to the Commonwealth of Pennsylvania for the following:

- Application Fee
- Enrollment Fee
- Graduate Degree Fee
- Student Union Building Fee

Changes in College Fees may be made without notice.

Make check or money order payable to the Student Activity Association for:

Activity Fee

Candidates who have been approved for the Master's degree are required to purchase or rent from the College Book Store a Master's cap, gown and hood to be worn at the graduation exercises. The fee for these items is nominal.

Three bound copies of the Master's thesis or the research project must be submitted to the College. Additional copies may be bound for the students. Arrangements for binding must be made with the Graduate Office.

Transcripts of one's graduate work may be obtained by contacting the Registrar's Office. The fee for this service is \$1.00 per transcript; there is no charge for the first transcript.

REFUNDS

When a student registers he should be careful not to overload himself because refunds and credit are given only as indicated. Students who enroll for nine to fifteen credits will pay a full-time fee as shown under the Schedule of Fees. If part of the schedule is dropped, **NO CREDIT OR REFUND** will be given.

If a student withdraws from the college, or from individual courses, the following schedule of refunds and credit have been established:

Sixteen Week Course	
Withdrawal 1st and 2nd week	80% Refund
Withdrawal 3rd and 4th week	60% Refund
Withdrawal 5th and 6th week	40% Refund
Withdrawal after 6th week	0% Refund
Twelve Week Course	
Withdrawal 1st week	80% Refund
Withdrawal 2nd and 3rd week	60% Refund
Withdrawal 4th week	40% Refund
Withdrawal after 4th week	0% Refund
Six Week Course	
Withdrawal 1st week	80% Refund
Withdrawal 2nd week	60% Refund
Withdrawal after 2nd week	0% Refund
Three Week Course	
Withdrawal 1st week	80% Refund
After 1st week	0% Refund

The student desiring permission for withdrawal must complete the regular withdrawal forms which are available in the Graduate Office. Students who desire a refund must also write a letter to the President of California State College. If the money is to be credited to another semester, the letter to the President is not necessary.

SUMMER REFUNDS

If a student registers as a full-time student during the summer session, which includes the first and second five (5) week sessions, and should decide to withdraw from either session or individual classes in any session, no refund or credit is approved. Therefore, students should be sure that they will attend both sessions before final registration.

WITHDRAWAL REGULATIONS

Students who find it necessary to leave the college during a term should, before discontinuing attendance at classes, confer with the Dean of Graduate School. If after such conference it is found that the student should not continue, official withdrawal forms must be filed in the Graduate Office. Students who leave the college without following this routine, especially the processing of withdrawal cards, jeopardize their status.

Withdrawal forms must be properly completed by students who desire to discontinue part of their schedules. When students merely stop attending classes without officially withdrawing, F (failing) grades are recorded on the permanent records.

Withdrawal from Individual Courses:

Students are permitted to add courses the first week of a term after registration day. The permission is granted by the Dean of Graduate School or the Associate Dean of Graduate School.

Students may drop courses during the first six (6) weeks without penalty. Permission is granted by the Dean of Graduate School or the Associate Dean of Graduate School.

After the first six (6) weeks, withdrawals from individual courses are permitted with a grade of "WP" or "WF"; "WP" carries no penalty – "WF" carries penalty.

Complete Withdrawal:

Students are permitted to withdraw completely from college up to the week of the final examination. Permission is granted by the Dean of Graduate School or the Associate Dean of Graduate School. "WP" or "WF" grades are assigned for all courses.

All withdrawals are subject to the policy established for credit and refunds.

TIME LIMIT

All requirements for the Master's degree must be completed within six years after the date of initial registration for graduate studies at California State College.

SCHOLARSHIP REQUIREMENT

The graduate student will be required to maintain a "B" grade average in all work after receiving the bachelor's degree. Only grades of "A," "B," or "C" are acceptable toward a Master's degree. Marking system: Grade of "A," 4 quality points; "B," 3 quality points; "C," 2 quality points. An incomplete grade (I) is issued only if because of personal illness (covering two or more consecutive weeks) the student is unable to complete the requirements of the course at the end of the session. The incomplete grade is issued only when circumstances warrant it and when proper evidence is presented. Work for the incomplete grade must be completed during the academic year immediately following the semester when the grade was issued. After the lapse of one year, if the work is not satisfactorily completed, the incomplete grade automatically becomes an "F" grade, and it cannot be removed without repeating the course.

COMPREHENSIVE EXAMINATION

Each student who is a candidate for the Master's degree will be required to pass a comprehensive examination. The type of examination may vary in different departments. The purpose of the examination is to evaluate the student's ability to demonstrate the achievement of the objectives and/or competencies prescribed for the student's program.

THIRTY (30) OR THIRTY-SIX (36) CREDIT OPTION

Students have an option in certain degree programs to choose the thirty (30)-credit degree program, which includes the Research Project or Thesis, or the thirty-six (36)-credit program which permits the student to complete six (6) credits in research related courses in lieu of the Research Project or Thesis. For details concerning the options, the applicant is requested to communicate with the appropriate departments or with the Graduate Office.

RESEARCH REQUIREMENTS FOR OPTION I – Thirty (30) Credits

One of the requisites for fulfilling the requirements for Option I of the Master's degree at California State College is the preparation of a research project or thesis. The research project and the thesis may be distinguished in the following manner:

The research project should make a contribution to the graduate student; it should make him a more understanding and competent teacher.

The project may pertain to the teacher's own classroom situation or to some other type of limited research. The project needs the approval only of the adviser, but the adviser may request the meeting of a special committee who would also review and evaluate the proposed study. Two (2) credit hours are given for the research project.

The thesis should make a contribution to the student and to his field; it treats a problem to a deeper degree. Better controls, wider sampling, and further basic research techniques must be employed for a thesis. Before a research proposal can be accepted for a thesis, it must be approved by a committee of three graduate faculty members – the candidate's adviser, a faculty member of the candidate's department, and a member of another department. Four to six (4–6) credit hours are given for a thesis.

The research project and thesis may differ in the nature of research and in details, but they should follow the same format and regulations as prescribed in the bulletin, *Preparation of Theses and Research Projects*, which is available in the Graduate Office.

A research paper (1 credit) is another research option available to English majors.

A Manual for Writers of Term Papers, Theses, and Dissertations by Kate L. Turabian is the adopted style sheet for the graduate program at California State College except as special requirements of individual departments demand the use of another style sheet.

Any letters or questionnaires concerning the proposed research project or thesis which are sent for the purpose of seeking information and data from off-campus sources must be approved by the adviser and by the Graduate Office.

STEPS IN SATISFYING THE RESEARCH REQUIREMENT

1. Admission to Candidacy for the Master's degree.
2. Selection of an adviser.
3. Completion of the course, "Methods of Research."
4. Overview for the proposed research project or thesis.
5. Rough draft of the research project or thesis.
6. Final draft of the study.
7. Presentation of three copies of the final draft of the research study for committee's evaluation.
8. Oral examination on the research study.
9. Preparation of an abstract of the study.
10. Binding of the final approved copies of the study.

(The detailed procedures and deadline dates for the completion of the preceding steps are available in the Graduate Office.)

The Graduate Council reserves the right to modify the requirements for graduate study without notice.

NOTICE OF ANTICIPATION FOR GRADUATION

It is the responsibility of the student to check with the Graduate Office at least three months before the date of his anticipated graduation. The Graduate Office prepares a list of prospective graduates several months before each commencement. It is the student's responsibility to see that his name is included on the graduation list and to indicate the way his name should appear on the diploma. If the degree candidate fails to check with the Graduate Office and fails to complete the application for graduation, it will be necessary to postpone his graduation until the next regular commencement. The application for graduation must be signed by the student's adviser, indicating that all requirements have been completed.

UNDERGRADUATE CREDIT FOR GRADUATE COURSE

Undergraduate students may enroll in graduate courses for undergraduate credit if they meet the necessary requirements for those courses. Individual departments shall decide what the prerequisites for each course shall be. Graduate status may be a prerequisite for admission to some courses.

GRADUATE CREDIT FOR SENIORS

Undergraduate students in their last term *on campus* who have completed or are completing all the requirements for an undergraduate degree may enroll in graduate courses for graduate credit. With the exception of the undergraduate degree and teaching certificate requirements, they must meet all other Graduate School entrance requirements. There can be *no double counting of credits*.

HOUSING FACILITIES

Housing in the College dormitories is available to graduate students. Students desiring housing facilities are requested to write to the Director of Housing.

Housing fees which include room and board for the fall and spring semester is \$476.00 and for the summer term the fee is \$360.00. (Fees are subject to change).

Students living in the dormitory are required to eat in the Dining Hall. However, if they live off-campus, they purchase a separate meal ticket for \$210.00.

PERMANENT CERTIFICATION

A student may enroll in the graduate program and complete the required number of semester hours for permanent certification while concurrently pursuing the Master's degree.

THE LIBRARY

The J. Albert Reed Library currently houses a collection in excess of 392,000 volumes of which 181,800 are in microform, carefully selected to meet and support the needs of the graduate and undergraduate programs offered by the college. Currently, the library subscribes to over 2,000 periodical and serial titles.

Research potential is enhanced with the microform editions of both current and out-of-print material contained in the library's 557,700 unit microform collection. In addition to major sets of books in microform, the Micromedia Area encompasses the Educational Resources Information Center (ERIC) document collection of current resource and research material in education. The library also subscribes to the United States Government Document Collection of both depository and non-depository items which the library receives monthly in microform.

For convenience of students and faculty, photocopying machines and microform reader/printers have been installed in the library which provide copies at nominal cost to the students. Available for microform usage are 32 microform viewers to accommodate the microform collection including 4 portable microfiche readers for home and dormitory use.

The Curriculum Library in the Learning Research Center contains an excellent collection of some 21,700 books and over 17,500 non-print materials for use by students enrolled in the School of Education as well as student teachers involved in their professional laboratory experiences.

Library resources are interpreted to the academic community through a competent library faculty consisting of 3 Information Services Librarians; Liaison Librarians to the Schools of Education, Arts & Sciences, Science & Technology, and Graduate School; as well as librarians to coordinate the Micromedia Area, Periodicals Library, the Curriculum Library, Interlibrary Loan and Technical Services.

The library at California State College receives several benefits which are passed on to the academic community through membership in various cooperatives. Through membership in the Pittsburgh Regional Library Center, the college has access to the resources of some 35 academic, public and special libraries through interlibrary loan. This regional consortium includes major institutional libraries such as the University of Pittsburgh, Pennsylvania State University and the Carnegie Library of Pittsburgh.

Computerized cataloging services from the Ohio College Library Center in Columbus are utilized in Reed Library through participation in the Pittsburgh Regional Library Center.

The library at California is one of 6 academic libraries participating in the Western Pennsylvania Buhl Network (WEBNET). The purpose of this consortium is to provide cooperative acquisitions, cataloging, reference, and interlibrary loan services in the field of education.

Being a state-owned institution, California also has access to the material holdings of our 13 sister institutions as well as the State Library in Harrisburg.

A new library building is scheduled for construction within the next year at a cost of approximately 7 million dollars providing a facility of 130,000 square feet with a capacity for 500,000 book volumes and seating for over 2,000 students.

THE COMPUTER CENTER

Computer services are available for graduate students who are conducting research studies. A full-time staff member is employed to assist students in utilizing the computer facilities for educational purposes.

The computer center is open daily (Monday through Friday) from 7:00 a.m. to 11:00 p.m. but students who want staff assistance should make arrangements with the Director of the Data Center.

Students desiring special training in the fundamentals of the use of the computer may register for a graduate course, GEE 537 Computer Science.

GRADUATE ASSISTANTSHIPS

A limited number of graduate assistantships have been established by the Commonwealth of Pennsylvania. Assistants are awarded with the one-half (1/2) time or the one-fourth (1/4) time stipend plan. On the one-half (1/2) plan the assistant receives a stipend of \$2705 for the fall and spring semesters. On the one-fourth (1/4) plan the assistant receives a stipend of \$1352.50 for the two (2) semesters. Course fees are waived for graduate assistants. The maximum number of credits permitted for a graduate assistant is nine (9) or ten (10) credit hours. Students planning to carry less than six (6) credits must receive approval from the department concerned and the Graduate Office. The graduate assistant is expected to devote full time to his studies and to his work related to the assistantship. Recipients of graduate assistantships on the one-half (1/2) time plan will be required to assist in the department to which they are assigned for twenty (20) hours per week. Assistants on the one-fourth (1/4) time plan will be required to assist in the department to which they are assigned for ten (10) hours per week.

The graduate assistants are assigned to various offices and to regular faculty members to assist in research, instruction, and other professional duties. They work under the direct supervision of full-time faculty members.

Only full-time graduate students are eligible for assistantships. Applications and information concerning graduate assistantships are available in the Graduate Office.

VETERANS' AFFAIRS

The office of Veterans' Affairs is located in Room 205, second floor of the Student Union Building. Office hours are 8:00 a.m. to 4:00 p.m. daily Monday through Friday; evening hours are by appointment.

All matters pertaining to veterans and eligible persons entitled to veterans benefits are initially dealt with in this office. VA Forms and Enrollment Certifications for all eligible students applying for benefits are processed by the Director of Veterans' Affairs.

Additional services are provided veterans through the Veterans' Administration representative on Campus. The Veterans' Representative is on campus every Monday and Wednesday in Room 207 which adjoins the Veterans' Affairs Office. He provides guidance and assistance to veterans and eligible persons who have pay problems, complaints, or who desire information on the full range of Veterans' benefits.

All veterans/eligible persons applying for graduate school should contact Veterans' Affairs at an early date so that necessary VA paper work can be processed to assure timely payments of educational benefits.

Questions on financial matters and deferments may be discussed with the Directors of Veterans' Affairs prior to or at time of registration.

The Graduate Office welcomes all veterans for consultation on admission to the Graduate School and available programs of study.

CHANGE OF ADDRESS OR NAME

It is the responsibility of the graduate student to file with the graduate office the change of address or name. Appropriate forms are available in the graduate office.

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Mentally and/or Physically Handicapped
Political Science
Reading Specialist
Reading Supervisor
School Psychology
Social Science
Speech and Hearing



The Graduate Programs

INTRODUCTION

The Graduate Division of California State College offers three types of advanced degrees: Master of Education (M.Ed.), Master of Arts (M.A.), and Master of Science (M.S.).

The Master of Education Program is intended primarily for qualified in-service teachers and other applicants who meet the standards for graduate study which were established by the Graduate Council. The following Master of Education Programs are offered: Administration (Elementary Principal and Secondary Principal), Biology, Chemistry, Elementary Education, Guidance (Elementary and Secondary), English, Geography, Industrial Arts Education, Mathematics, Mentally and/or Physically Handicapped, Reading Specialist, Social Studies, and Speech and Hearing.

The areas of specialization for the Master of Arts Program are English, Geography, History, Mathematics, and Political Science. The Biology and Psychology Departments offer Master of Science programs.

The Master of Arts and the Master of Science degrees are offered for applicants who have a major or adequate background preparation in the area in which they wish to matriculate. The students have an opportunity to study in depth in their areas of specialization and become more proficient in their discipline.

In those graduate programs that lead to initial certification, individual departments will determine the competency of the student for certification. It should be noted that receiving a Master's degree is not synonymous with initial certification. The areas for which certification is given on the graduate level at California State College are: Administration (Elementary Principal and Secondary Principal), Counselor Education (Elementary Guidance and Secondary Guidance), Mentally and/or Physically Handicapped, Reading and School Psychology.

Graduate work at California is especially designed to include classroom, laboratory, clinical, and research experience that will add breadth and depth to the educational background of the students. The program for each person admitted to the graduate division will be planned in cooperation with the adviser and will be based upon the previous training and experience of the student.

A minimum of thirty (30) or thirty-six (36) semester hours is required of all degree students, depending on the option chosen by the student. The curriculum pattern differs for the various areas of specialization.

Since standards of proficiency described elsewhere must be met, it should be understood that the requirements listed in the preceding paragraph constitutes a minimum requirement and does not guarantee graduation.

The graduate program is not merely an extension of work at the undergraduate level. More vigorous standards are applied and a degree of independence in the pursuit of knowledge and special competencies is required. Special emphasis is placed on the cultivation of scholarly attitudes and methods of research.

ADMINISTRATION PROGRAM FOR PRINCIPALS

The Administration Program for Principals at California State College provides graduate students with an opportunity to obtain a Master's degree in elementary or secondary school administration and/or certification as an elementary or secondary school principal. The program is competency-based and utilizes a variety of instructional modes. Previous professional experience and academic background are assessed to prescribe the program of studies and field experiences.

The principal trainee will develop cognitive and affective competencies in the following generic areas:

Competency Credit Equivalent

Competency	Total Credit Assigned	Master's Degree Competency Credit	Certification Competency Credit
APP 701 Curriculum	8	8M*	8
APP 702 Child Growth	4		4
APP 703 Administration/Supervision	8	8M**	8
APP 704 Group Process	6*	6M**	6
APP 705 Rights, Responsibilities, Ethics	2***		2
APP 706 Laws/Regulations	3***		3
APP 707 School-Community	4***		4
APP 708 Related Disciplines	4***		4
APP 759 Research	4M	4M**	4
APP 711 Co-Curricular Activities	2***		<u>2</u>
	TOTAL	26 (required) 4 (elected)	45

*APP 741 Assessment/Orientation
(3 credits of Group Process)

**To be taken by all candidates

***Any four of these credits can be used for the Master's degree

In many ways the program is unique, and unlike the traditional course-oriented program because the modes of instruction consist pri-

marily of supervised field experiences, learning contracts, seminars and workshops, computer assisted instruction, independent study, learning activity packets, and case studies. Some courses may also be prescribed.

Admission Requirements to the Administration Program for Principals

In addition to the general admission requirements of the graduate school, students enrolled in the Administration Program for Principals must complete the following requirements:

1. All candidates must be approved for admission to the program by the Administration Program for Principals faculty committee.
2. Master's degree candidates must be approved for candidacy after receiving no less than six (6) credits and no more than twelve (12) credits at California State College.
3. Certification candidates must have completed:
 - a. a Master's degree from an accredited college or university that is accredited by the National Commission on Accreditation or the appropriate regional accrediting agency.
 - b. five (5) years of professional experience in Elementary and/or Secondary Schools.
 - c. the recommended program as prescribed by the Administration Program for Principals faculty.
4. Applicants who did not complete the Master's degree at California State College must submit the following:
 - a. a transcript for undergraduate and graduate degrees.
 - b. two letters of recommendation, one from school administrator in the school where the candidate is currently employed, or recently employed, and one from another school administrator.
 - c. a summary of purpose for seeking Certification for the Administration Program for Principals.

BIOLOGY

MASTER OF EDUCATION

The Master of Education degree is a professional one designed primarily to improve biology teaching in the public schools. In-service biology educators are encouraged to become more effective in their chosen profession by taking coursework and/or experiences in the graduate program of the Department of Biological Sciences and in several other

departments of the Graduate School. This program offers a broad variety of academic, pedagogical, and research opportunities for the biology teacher.

The graduate student, in close consultation with the department, graduate committee, and adviser, selects academic courses he feels will best broaden his scope of understanding in biology. Certain other courses are aimed at updating curriculum and instruction methodologies and are part of all students programs. Research opportunities are provided to all individuals, either in an academic or practical educational area.

The Department of Biological Sciences of California State College is housed in the Frich Biology Building, an ultra-modern, multi-million dollar teaching and research facility equipped with the latest in design, materials and instrumentation. Specialized areas for student and faculty research, a herbarium, a museum, live animal colonies, a greenhouse, an electron microscope and a radiation laboratory all complement this fine classroom-laboratory structure.

The student's record is reviewed by a departmental committee, who may require additional courses in biology or related fields to remedy deficiencies. After taking 9 to 12 credits with a 3.0 minimum Quality Point Average a comprehensive candidacy examination covering general biology must be passed.

At least one course in Organic Chemistry is required for the Master of Education program and deficiency must be remedied as undergraduate credit before the candidacy examination is taken.

Ancillary graduate level courses up to 6 credits in fields closely related to the major program may be substituted for biology courses upon approval of the adviser and a majority vote of the department faculty.

Three options are available under the M.Ed:

Option A Thirty credits, with thesis

Option B Thirty credits, with research project

Option C Thirty-six credits, with research-oriented courses.

After 20 credits are accumulated, a change in option requires permission of the department faculty.

I. PROFESSIONAL EDUCATION – 10 credits: Options A, B and C.

*EDP 600	Statistical Methods	2
*EDP 620	Curriculum and Methods of Teaching	
	Biology in High School	2
	Other courses in PE	6

*Required

II. BIOLOGICAL SCIENCE

Field of specialization: credits to be selected from the biology courses:

Option A 14 credits

Option B 16 credits

Option C 20 credits

BIO	700	Cellular Ultrastructure	3
BIO	705	Cellular Physiology	4
BIO	706	Bacteriology	4
BIO	707	Mycology	4
BIO	708	Microbial Ecology and Physiology	4
BIO	715	Tissue Culture	4
BIO	716	Cytogenetics	4
BIO	717	Population Genetics	3
BIO	718	Advanced Problems in Genetics	3-8
BIO	720	Human Genetics	3
BIO	721	Biochemistry I	4
BIO	722	Biochemistry II	4
BIO	725	Molecular Biology	4
BIO	730	Animal Systematics	4
BIO	735	Comparative Vertebrate Anatomy	4
BIO	736	Animal Development	3
BIO	737	Animal Behavior	3
BIO	738	Herpetology	3
BIO	740	Ornithology	4
BIO	745	Entomology	4
BIO	746	Parasitology	4
BIO	747	Limnology	4
BIO	750	Terrestrial Ecology	4
BIO	751	Plants and Man	4
BIO	755	Field Botany	4
BIO	756	Field and Laboratory Techniques	4
BIO	757	Plant Systematics	4
BIO	758	Plant Anatomy and Morphogenesis	4
BIO	760	Advanced Plant Physiology	3
BIO	766	Biometry	3
BIO	767	Lab Instrumentation for Biology	4
BIO	768	Techniques in Electron Microscopy	4
BIO	770	Conference on Electron Microscopy	4
BIO	775	Radiation Biology	4
BIO	776	Radioisotope Techniques	4
BIO	778	Organic Evolution in 20th Century	3
BIO	795	Seminar in Biology	2
MSC	700	Marine Science Consortium – Graduate Biology Courses	V/A

III. RESEARCH – 6 credits for Options A and C, 4 credits for Option B.

*Option A	BIO	800	Methods of Research in Science	2
	RES	849	Master's Thesis	4

			Electives from the Ancillary graduate level courses (maximum 6 credits) and from the Biological Science graduate courses	14
*Option B	BIO 800	Methods of Research in Science		2
	RES 829	Research Project		2
			Electives from the Ancillary graduate level courses (maximum 6 credits) and from the Biological Science graduate courses	16
*Option C	BIO 800	Methods of Research in Science		2
	BIO 795	Seminar in Biology		
		Statistics beyond EDP 600 or GEE 537		
		Computer Science		2
			Electives from the Ancillary graduate level courses (maximum 6 credits) and from the Biological Science graduate courses	20

*Each of the above three (3) options requires ten (10) credits in Professional Education.

*Required

BIOLOGY

MASTER OF SCIENCE

The Master of Science is a program designed for post baccalaureate students who desire more intensive training in specialized areas of biology and related sciences. A student entering this program is expected to have completed extensive coursework in biology, mathematics and the physical sciences. Once a student is admitted to the program, he/she is given the opportunity to select a faculty adviser and a research problem to meet his/her educational and professional needs. Students completing the program are prepared to enter biological careers in research, allied health, teaching as well as advanced degree programs.

The Department of Biological Sciences of California State College is housed in the Frich Biology Building, an ultra-modern, multi-million dollar teaching and research facility equipped with the latest in design, materials and instrumentation. Specialized areas for student and faculty research, a herbarium, a museum, live animal colonies, a greenhouse, an electron microscope and a radiation laboratory all complement this fine classroom-laboratory structure.

The student's record is reviewed by a departmental committee, who may require additional courses in biology or related fields to remedy deficiencies. After taking 9 to 12 credits with a 3.0 minimum Quality Point Average, a comprehensive candidacy examination covering general biology must be passed. Thirty credits and a thesis involving experimental work are required.

At least two courses in Organic Chemistry are required for the Master of Sciences program, and deficiency must be remedied as undergraduate credit before candidacy examination is taken.

Ancillary graduate level courses up to 6 credits in fields closely related to the major programs may be substituted for biology courses upon approval of the adviser and a majority vote of the department faculty.

I. BIOLOGICAL SCIENCE – 24 credits, to select from the biology courses:

BIO	700	Cellular Ultrastructure	3
BIO	705	Cellular Physiology	4
BIO	706	Bacteriology	4
BIO	707	Mycology	4
BIO	708	Microbial Ecology and Physiology	4
BIO	715	Tissue Culture	4
BIO	716	Cytogenetics	4
BIO	717	Population Genetics	3
BIO	718	Advanced Problems in Genetics	3-8
BIO	720	Human Genetics	3
BIO	721	Biochemistry I	4
BIO	722	Biochemistry II	4
BIO	725	Molecular Biology	4
BIO	730	Animal Systematics	4
BIO	735	Comparative Vertebrate Anatomy	4
BIO	736	Animal Development	3
BIO	737	Animal Behavior	3
BIO	738	Herpetology	3
BIO	740	Ornithology	4
BIO	745	Entomology	4
BIO	746	Parasitology	4
BIO	747	Limnology	4
BIO	750	Terrestrial Ecology	4
BIO	751	Plants and Man	4
BIO	755	Field Botany	4
BIO	756	Field and Laboratory Techniques	4
BIO	757	Plant Systematics	4
BIO	758	Plant Anatomy and Morphogenesis	4
BIO	760	Advanced Plant Physiology	3
BIO	766	Biometry	3
BIO	767	Lab Instrumentation for Biology	4
BIO	768	Techniques in Electron Microscopy	4
BIO	770	Conference on Electron Microscopy	4
BIO	775	Radiation Biology	4
BIO	776	Radioisotope Techniques	4
BIO	778	Organic Evolution in 20th Century	3
BIO	795	Seminar in Biology	2
MSC	700	Marine Science Consortium – Graduate Biology Courses	V/A

II. RESEARCH — 6 credits

*BIO	800	Methods of Research in Science	2
*RES	849	Master's Thesis	4

*Required

CHEMISTRY

MASTER OF EDUCATION

The prospective graduate student should meet all the general requirements for admission to the graduate school. In order to complete a program of study leading to the Master of Education Degree, the student must apply for and be admitted to candidacy for the degree. The student must apply for candidacy for the Master's Degree immediately after completing six (6) hours of successful graduate work.

Successful completion of the program provides for an opportunity for those who wish to pursue advanced degrees in Science Education, to prepare for supervisory positions or for those who will consider the Master of Education as a terminal degree.

(30 Credit Option)

I. PROFESSIONAL EDUCATION — Eight to eleven (8–11) semester hours to be selected from the following courses: CHE 736, 737, 780 and EDP 600 are required.

*CHE	736	Foundations of Science Education	2
*CHE	737	Science in the School Curriculum	2
*CHE	780	Seminar in Science Education	2
*EDP	600	Educational Statistics	2
CHE	738	Junior High School Programs in Science	2
CHE	746	Supervision of School Science Programs	2
CHE	747	Supervision of Student Teachers in Science	2
CHE	790	Individual Studies in Science Education (May be repeated for a maximum of 3 credits)	1-3
EDP	605	Philosophy of Education	2
EDP	607	Advanced Educational Psychology	2
EDP	610	Educational Sociology	2
EDP	646	Contemporary Trends in Secondary Education	3
EDP	647	The Middle School	3
EDP	648	Legal Decisions Affecting Secondary Education	3
EDP	685	Seminar in Audio-Visual Techniques	2

II. CHEMISTRY AND COGNATE FIELDS — Fifteen to eighteen (15–18) semester hours to be selected from the following courses:

Two of four courses (CHE 701, 711, 721, 731) are required.

**CHE	701	Advanced Inorganic Chemistry I	3
**CHE	711	Advanced Analytical Chemistry I	3
**CHE	721	Advanced Organic Chemistry I	3
**CHE	731	Advanced Physical Chemistry I	3
CHE	702	Advanced Inorganic Chemistry II	3
CHE	703	Physical Chemistry I	3
CHE	704	Physical Chemistry II	3
CHE	705	Inorganic Preparations	2
CHE	712	Advanced Analytical Chemistry II	3
CHE	722	Advanced Organic Chemistry II	3
CHE	732	Advanced Physical Chemistry II	3
BIO	721	Biochemistry I	4
BIO	722	Biochemistry II	4
CHE	735	Quantum Mechanics	3
CHE	745	Mathematics for Chemists	3
CHE	748	Environmental Chemistry for Science Majors	2
CHE	754	Astronomy for Teachers	2
CHE	755	Physico-Chemical Principles	2
CHE	756	Basic Concepts of Physics	2
CHE	757	History of Chemistry	2
CHE	758	Literature of Chemistry	2
CHE	795	Individual Studies in Chemistry	1-3
CHE	796	Individual Studies in Physics	1-3

III. RESEARCH – Four to six (4–6) semester hours are required.

Research Project (RES 829) or Master's Thesis (RES 849) is required.

RES	800	Methods of Research	2
***RES	829	Research Project	2
***RES	849	Master's Thesis	4

*Required

**2 of 4 required

***Either required

(36 Credit Option)

I. PROFESSIONAL EDUCATION – Ten to thirteen (10–13) semester hours are to be selected from the following courses: CHE 736, 737, 780 are required.

*CHE	736	Foundations of Science Education	2
*CHE	737	Science in the School Curriculum	2
*CHE	780	Seminar in Science Education	2
CHE	738	Junior High School Programs in Science	2
CHE	746	Supervision of School Science Programs	2
CHE	747	Supervision of Student Teachers in Science	2
CHE	790	Individual Studies in Science Education (May be repeated for a maximum of 3 credits)	1-3

EDP 605	Philosophy of Education	2
EDP 607	Advanced Educational Psychology	2
EDP 610	Educational Sociology	2
EDP 645	Issues and Innovations in Secondary Education	2
EDP 646	Contemporary Trends in Secondary Education	2
EDP 648	Legal Decisions Affecting Secondary Education	3
EDP 647	The Middle School	3
EDP 685	Seminar in Audio-Visual Techniques	2

II. CHEMISTRY AND COGNATE FIELDS — Seventeen to twenty (17–20) semester hours are to be selected from the following courses: CHE 701, 711, 721, 731) are required.

**CHE 701	Advanced Inorganic Chemistry I	3
**CHE 711	Advanced Analytical Chemistry I	3
**CHE 721	Advanced Organic Chemistry I	3
**CHE 731	Advanced Physical Chemistry I	3
CHE 702	Advanced Inorganic Chemistry II	3
CHE 703	Physical Chemistry I	3
CHE 704	Physical Chemistry II	3
CHE 712	Advanced Analytical Chemistry II	3
BIO 721	Biochemistry I	4
BIO 722	Biochemistry II	4
CHE 722	Advanced Organic Chemistry II	3
CHE 732	Advanced Physical Chemistry II	3
CHE 735	Quantum Mechanics	3
CHE 745	Mathematics for Chemists	3
CHE 748	Environmental Chemistry for Science Majors	2
CHE 754	Astronomy for Teachers	2
CHE 755	Physico-chemical Principles	2
CHE 756	Basic Concepts of Physics	2
CHE 757	History of Chemistry	2
CHE 758	Literature of Chemistry	2
CHE 795	Individual Studies in Chemistry	1-3
CHE 796	Individual Studies in Physics	1-3

III. RESEARCH — Six (6) semester hours are required. RES 800 and EDP 600 are required.

*RES 800	Methods of Research	2
*EDP 600	Statistical Methods	2
EDP 656	Computer Oriented Research	2
GEE 537	Computer Science	2

*Required

**2 of 4 required

COUNSELOR EDUCATION

ELEMENTARY GUIDANCE

MASTER OF EDUCATION

In addition to the general requirements for admission to graduate studies, applicants who wish to be approved for admission to the Elementary Guidance Program must be certified in an educational area (elementary, secondary, art, music, public school nursing, etc.). Applicants who have an undergraduate degree in any related field (psychology, sociology, etc.) will also be considered.

Graduate study does not carry with it admission to candidacy for the Master's degree. The student entering the program must apply for candidacy for the Master's degree after completing not less than six (6) hours nor more than twelve (12) hours of graduate work at California State College. Within these twelve hours, the student must have successfully completed ELG 701 – Organization and Administration of Guidance in the Elementary School, ELG 702 – Counseling Theory, and be enrolled in or completed ELG 711 – Practicum I. Approval for admission to candidacy for the Master's degree will be determined by the Guidance Staff. A meeting with the Staff may be required.

The Elementary Guidance Program at California State College makes a distinction between the completion of the Master's Degree in Education and the approval for certification in Elementary Guidance. A Master's Degree connotes the assimilation and understanding of the didactic requirements of the Elementary Guidance Program. Certification in Elementary Guidance is based on the ability to demonstrate competence in counseling and consulting in the practicum requirements of the guidance program. Therefore, it is possible for a student in Elementary Guidance to obtain a Master's degree in Education without obtaining certification in Elementary Guidance.

The student majoring in Elementary Guidance has a choice of two options in obtaining the Master's Degree. Option A requires a minimum of thirty-two (32) hours of credit, with a research project or thesis required. Option B is a minimum of thirty-six (36) credit hours with no project or thesis required.

I. BEHAVIORAL SCIENCE AND ELEMENTARY EDUCATION –

Eight to ten (8–10) credit hours to be selected from the following:
Other courses may be taken with approval of your adviser.

Option A: Eight to ten (8–10) credit hours

Option B: Eight to ten (8–10) credit hours

GEE	535	Sociology of Family	2
EDP	617	Psychology of Growth and Development	2
EDP	625	Advanced Mental Hygiene	2
EDP	627	Early Childhood Education	2
EDP	628	Psychology of the Disadvantaged Child	2
EDP	638	Advanced Psychology of Learning	2
ANT	706	Cultural Institutions	2
EDE	705	Development and Organization of Curriculum for the Elementary School	3
EDE	708	Development Reading in the Elementary School	2
EDE	735	Psychology of the Exceptional Child	2
PSY	721	Tests and Measurements	2

II. COUNSELING – Sixteen to eighteen (16–18) credit hours to be selected from the following:

Option A: Sixteen to eighteen (16–18) credit hours

Option B: Sixteen to eighteen (16–18) credit hours

*ELG	701	Organization and Administration of Guidance in the Elementary School	2
*ELG	702	Counseling Theory	2
*ELG	703	Consulting Theory	2
*ELG	705	Developmental Group Counseling	2
ELG	709	Independent Study	2
*ELG	711	Practicum I	2
*ELG	712	Practicum II	2
*ELG	713	Practicum III	2
ELG	715	Advanced Counseling Theory	2
ELG	716	Advanced Consulting Theory	2
ELG	785	Research Seminar in Counselor Education	2
ELG	786	Seminar in Career Information	2

III. RESEARCH – Other courses may be taken with approval of your adviser.

Option A: Six to eight (6–8) credit hours.

Option B: Eight to ten (8–10) credit hours.

GEE	537	Computer Science	2
*EDP	600	Statistical Methods	2
EDE	706	Evaluation and Measurements	2
ELG	709	Independent Study	2
ELG	785	Research Seminar in Counselor Education	2
*RES	800	Methods of Research	2
**RES	829	Research Project	2
**RES	849	Master's Thesis	4

*Required

**Either Required

Total Credits Required: Option A – Thirty-two (32) credits
Option B – Thirty-six (36) credits

SECONDARY GUIDANCE *MASTER OF EDUCATION*

The Secondary Guidance program (36 credits) at California State College will provide graduate students with an opportunity to obtain a Master's degree in education and/or certification as a secondary school counselor. The program is competency-based and will utilize a variety of instructional modes. The modes of instruction will consist primarily of supervised field experiences, learning contracts, seminars and workshops, computer assisted instruction, independent study, learning activity packets and case studies.

The program is divided into five (5) generic competencies, which center around the following areas: counseling, consulting, child growth and development, research and evaluation, and career planning. Each competency must be completed satisfactorily before the credits will be awarded. The competencies may be completed through the various modes of instruction as stated above. The main emphasis, however, is on the demonstration of the knowledge and performance of each enabling competency.

Initial Phase – Assessment and Orientation: The candidate will enroll in an assessment and orientation seminar (3 credits) at the beginning of the program. During this seminar, the students and staff will assess the competencies already acquired through the experiences one has lived. These competencies will be documented and demonstrated by the students and the results kept in an "Individual Assessment and Prescription Folio." The staff and student, at the end of the seminar, will then be able to write a "prescription," based on competencies not achieved which will then become the plan to complete the remaining of the required competencies. The five generic competencies are as follows:

- (1) The Counselor-Trainee will demonstrate the ability to effectively counsel individuals and groups.
- (2) The Counselor-Trainee will demonstrate the ability to be an effective consultant.
- (3) The Counselor-Trainee will demonstrate an understanding of how children grow and learn.
- (4) The Counselor-Trainee will demonstrate a knowledge of research and evaluative procedures.

- (5) The Counselor-Trainee will have an understanding of our changing culture, particularly as it relates to career planning.

Competency Credit Equivalent

			Competency	Credits
SGU 741	Initial Phase		Assessment and Orientation	3
SGU 701	Generic #1		Counseling (Individual and Group)	7
SGU 702	Generic #2		Consulting	7
SGU 703	Generic #3		Child Growth and Development and Learning Theory	6
SGU 759	Generic #4		Research and Evaluation	6
SGU 704	Generic #5		Career Planning	7
TOTAL				36

ELEMENTARY EDUCATION

MASTER OF EDUCATION

The Master of Education Degree in Elementary Education provides the student with an opportunity to explore a broad spectrum of the elementary curriculum. Five categories broaden the student's opportunity to explore the facets of the Elementary Education Program. In order to complete a program of study leading to the Master of Education degree, the student must apply for and be admitted to candidacy for the degree. Admission to graduate study does not presume admission to candidacy for the Master's degree. The student entering the program must apply for candidacy for the Master's degree after completing not less than six (6) hours, nor more than twelve (12) hours of graduate work at California State College. The student must have successfully completed these hours within the professional Core and/or Cognate Areas. Prior to the completion of the program, the student must satisfactorily complete a written comprehensive examination. The student can select two options in working toward their degree: (1) A 30-credit graduate program including a research project or thesis. (2) A 36-credit graduate program without a research project or thesis but including six hours in research related courses.

- I. GENERAL AND PROFESSIONAL EDUCATION – Four to eight (4–8) semester hours to be selected from the following courses. (At least 2 credits from GE and at least 2 credits from PE)

GEE 500	Comparative Studies in Literature	2
GEE 505	Great Works in Drama	2

GEE 506	Philosophy and Philosophers	2
GEE 507	Comparative Music	2
GEE 508	Science and Technology	2
GEE 510	History of Mathematics	2
GEE 515	Science Biographies	2
GEE 516	World Resources and Population Problems	2
GEE 517	American Civilization	2
GEE 518	Comparative Institutions	2
GEE 520	Language in Society	2
GEE 525	Community Problems of Health and Safety	2
GEE 526	Mass Communications	2
GEE 527	Community Resource Problems	4
GEE 537	Computer Science	2
GEE 547	Moral Problems of Scientific Research and Behavior Change	2
GEE 588	Seminar on Creativity	2
EDP 600	Statistical Methods	2
EDP 606	General History of Education	2
EDP 605	Philosophy of Education	2
EDP 607	Advanced Educational Psychology	2
EDP 608	Comparative Education	2
EDP 610	Educational Sociology	2
EDP 616	Guidance and Counseling	2
EDP 617	Psychology of Growth and Development	2
EDP 618	Social Psychology	2
EDP 625	Advanced Mental Hygiene	2
EDP 627	Early Childhood Education	2
EDP 628	Psychology of the Disadvantaged Child	2
EDP 636	Advanced Psychology of Learning	2
EDP 638	Selection and Use of Instructional Materials in the Classroom	2
EDP 640	Perception and Motor Development in the Education of Children	2
EDP 685	Seminar in Audio-Visual Techniques	2

II. ELEMENTARY EDUCATION – Five to nine (5–9) semester hours
of course work to be selected from the following courses:

EDE 700	Historical Background of the Elementary School	2
EDE 706	Evaluation and Measurements in the Elementary School	2
EDE 707	Creative Activities in the Elementary School	2
EDE 708	Developmental Reading in the Elementary School	2
EDE 710	Teaching Reading in Content Subjects (Pre: EL 704)	2
EDE 717	Geography in the Modern Elementary School	2
EDE 718	Arithmetic in the Elementary School	2
EDE 720	Resource Materials in Elementary Science	2
EDE 725	The Creative Elementary Music Program	2

EDE	726	Art Education for the Elementary Grades	2
EDE	727	Guidance in the Elementary School	2
EDE	728	Problems in Health and Physical Education for the Elementary School	2
EDE	730	Teaching in Kindergarten and the Primary Grades	2
EDE	735	Psychology of the Exceptional Child	2
EDE	736	Organization and Administration of the Elementary School	2
EDE	738	Children's Literature and Reading	2
EDE	745	Topics in Algebra for the Elementary Mathematics Teacher	2
EDE	746	Topics in Geometry for the Elementary Mathematics Teacher	2
EDE	748	Materials, Recreational Mathematics and Evaluative Techniques in Elementary School Science	2
EDE	750	Classroom Diagnostic Procedures for Reading	2
EDE	755	Techniques in Diagnosis of Remedial Problems	2
EDE	780	Seminar in Reading and Language Arts	2
EDE	785	Seminar: Current Issues and Innovations in Elementary Education	2
EDE	787	Seminar in Elementary Art Education	2
EDE	790	Independent Study (Small Scale or Action Research)	1-3
IAR	703	Industrial Arts as a Teaching Method K-6	3

III. PROFESSIONAL CORE — A minimum of nine (9) hours to be selected from the following courses:

*EDE	705	Development and Organization of the Curriculum for the Elementary School	3
EDE	715	Recent Trends in Language Arts	3
EDE	716	Special Problems in Elementary Social Studies	3
EDE	740	Recent Trends in Elementary School Science	3
EDE	747	Trends and Current Research Findings in Elementary Mathematics	3

IV. COGNATE AREAS — A minimum of six (6) semester hours to be selected from the Graduate School Catalogue in consultation with the student's adviser.

V. RESEARCH — 36-credit requirement only — minimum of six (6) hours selected from the following:

*RES	800	Methods of Research	2
EDP	602	Statistical Methods	2
EDE	702	Evaluation and Measurement in Elementary School	2
GEE	537	Computer Science	2

RESEARCH — 30 credit requirement only — Four to six (4–6) hours to be selected from the following:

*RES 800	Methods of Research	2
RES 829	Research Project	2
RES 809	Research Project Seminar (prerequisite — Methods of Research)	2
RES 849	Master's Thesis	4

*Required

ENGLISH

MASTER OF ARTS

The applicant should present at least eighteen semester hours of superior work on the undergraduate level in English language and literature and submit evidence of having completed at least two years of college work in a foreign language. Applicants who have not had two years of a foreign language, but who otherwise have outstanding qualifications for graduate study, may apply.

Upon satisfactory completion of six hours of graduate work in the English department, the student may apply for admission to candidacy.

The candidate choosing to write a Master's Thesis will take a minimum of thirty (30) semester hours of credit, including twenty-six (26) in approved English courses and four (4) in the thesis.

The candidate electing the Thesis Option, a thoroughly researched paper of from 30–50 pages developed either from a graduate course or independently, will take a minimum of thirty-three (33) semester hours of credit, including thirty-two (32) in approved English courses, with one credit being given for the Research Paper.

All candidates should elect ENG 800, Methods of Research, in the first term of residence.

Information on the comprehensive examination is available from all graduate English advisers.

I. LINGUISTICS

ENG 705	Introduction to Old English	3
ENG 706	Middle English	3
ENG 707	Linguistics	3
ENG 708	Advanced Linguistics	3
ENG 710	History of the English Language	3

II. LITERATURE — Minimum of eighteen (18) semester hours to be selected from:

ENG 715	Chaucer	3
ENG 716	English Drama Before Shakespeare	3

ENG 717	Shakespeare	3
ENG 718	Sixteenth Century Non-Dramatic Literature	3
ENG 725	Non-Dramatic English Literature 1600–1660	3
ENG 726	Jacobean and Caroline Drama	3
ENG 727	Milton	3
ENG 735	English Literature 1660–1700	3
ENG 736	English Literature 1700–1744	3
ENG 737	English Literature 1744–1798	3
ENG 738	Eighteenth Century English Novel	3
ENG 745	Romantic Poetry	3
ENG 746	Victorian Poetry	3
ENG 747	Nineteenth Century Non-Fiction Prose	3
ENG 748	Nineteenth Century English Novel	3
ENG 755	Colonial American Literature	3
ENG 756	American Renaissance	3
ENG 757	Rise of Realism	3
ENG 758	Modern American Poetry	3
ENG 760	Cultural Backgrounds of American Literature	3
ENG 765	Modern American Novel	3
ENG 766	Modern British Novel	3
ENG 767	History of Literary Criticism	3
ENG 768	Modern British Poetry	3
ENG 770	Modern Drama	3
ENG 790	Seminar in Literary Criticism	3
ENG 795	Seminar in English Literature	3
ENG 796	Seminar in American Literature	3
ENG 797	Seminar in Communication	3
ENG 799	Independent Study	1-4

III. RESEARCH – From three to six (3–6) semester hours:

*ENG 800	Methods of Research in English	3
ENG 819	Research Paper	1
ENG 849	Thesis	3

*Required

ENGLISH

MASTER OF EDUCATION

In addition to the present requirement that a candidate for admission to the program have a certificate to teach English or Communication, he should present a transcript showing satisfactory completion of at least 12 semester hours in upper-division courses in English.

Upon satisfactory completion of six hours of graduate work in the English department, the student may apply for admission to candidacy.

The comprehensive examination for the Master of Education will be set on the individual's course work and will be on set texts; but since the

Master of Education candidate's interest will be pedagogical, the questions will relate to teaching as well as to literary history and criticism.

Apart from the sequence of two required courses in methodology and research (see below), no thesis or research project is required. The Master of Education degree requires a minimum of thirty-six (36) hours of credit.

The Master of Education program is very flexible; it is important, therefore, that a student's course selection be coherent. Consequently, he should, with an adviser, draw up a proposed course of study at the beginning of his graduate work and adhere to it as closely as possible.

I. RESEARCH — (See also V):

*ENG 800 Methods of Research in English 3

II. ENGLISH — Minimum of eighteen (18) semester hours to be distributed as follows:

A. Linguistics — Minimum of six (6) semester hours to be selected from:

ENG 705	Introduction to Old English	3
ENG 706	Middle English	3
ENG 707	Linguistics	3
ENG 708	Advanced Linguistics	3
ENG 710	History of the English Language	3

B. Literature — Minimum of twelve (12) semester hours to be selected from:

ENG 715	Chaucer (may be counted as either Linguistics or Language)	3
ENG 716	English Drama Before Shakespeare	3
ENG 717	Shakespeare	3
ENG 718	Sixteenth Century Non-Dramatic Literature	3
ENG 725	Non-Dramatic English Literature 1600—1660	3
ENG 726	Jacobean and Caroline Drama	3
ENG 727	Milton	3
ENG 735	English Literature 1660—1700	3
ENG 736	English Literature 1700—1744	3
ENG 737	English Literature 1744—1798	3
ENG 738	Eighteenth Century English Novel	3
ENG 745	Romantic Poetry	3
ENG 746	Victorian Poetry	3
ENG 747	Nineteenth Century Non-Fiction Prose	3
ENG 748	Nineteenth Century English Novel	3
ENG 755	Colonial American Literature	3
ENG 756	American Renaissance	3
ENG 757	Rise of Realism	3
ENG 758	Modern American Poetry	3
ENG 760	Cultural Backgrounds of American Literature	3

ENG 765	Modern American Novel	3
ENG 766	Modern British Novel	3
ENG 767	History of Literary Criticism	3
ENG 768	Modern British Poetry	3
ENG 770	Modern Drama	3
ENG 790	Seminar in Literary Criticism	3
ENG 795	Seminar in English Literature	3
ENG 796	Seminar in American Literature	3
ENG 797	Seminar in Communication	3
ENG 799	Independent Study	1-4

III. PROFESSIONAL EDUCATION – Minimum of six (6) semester hours to be selected from:

EDP 600	Statistical Methods	2
EDP 605	Philosophy of Education	2
EDP 606	General History of Education	2
EDP 607	Advanced Educational Psychology	2
EDP 608	Comparative Education	2
EDP 610	Educational Sociology	2
EDP 616	Guidance and Counseling	2
EDP 617	Psychology of Growth and Development	2
EDP 618	Social Psychology	2
EDP 685	Seminar in Audio-Visual Aids	2

IV. COGNATES – Minimum of six (6) semester hours in cognate fields (such as history, sociology, psychology); some or all of these may be chosen from II or III above.

V. RESEARCH (see also I):

*ENG 802 Research Practicum/Research Project
(To be scheduled within the last nine hours) 3

*Required

GEOGRAPHY

MASTER OF ARTS DEGREE PROGRAM

A minimum of thirty semester hours are needed for graduation with a Master of Arts in Geography. This total includes a minimum of seventeen to eighteen (17–18) semester hours in Geography of which five to seven (5–7) are in research. The research offers a choice between a Master's Thesis or a Research Project. The remainder of semester hours can be taken within the department or in cognate areas. The graduate student along with the adviser can determine this direction. A comprehensive examination culminates the program.

The Master of Arts Degree in Geography is flexible and allows for diversity in goal development. It enables a graduate with this degree to pursue a professional career in geography as well as to branch into cognate areas such as government and industry. The program accepts students with varied backgrounds. It does not require applicants to have an undergraduate major in geography.

Interested students should make application with the graduate school. The Geography and Earth Science Department then judges the qualifications of the applicant for acceptance into the M. A. degree program.

CURRICULUM FOR THE MASTER OF ARTS DEGREE IN GEOGRAPHY

I. GEOGRAPHY — FIELD OF SPECIALIZATION — A minimum of 12 semester hours

A. Core Courses — Three semester hours

	*GEO 798 Seminar in Geography	3
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B. A minimum of 9 semester hours must be selected from the following Topical Areas:

CULTURAL:

	GEO 711 Population Analysis	3
	GEO 712 Geography and Urban Politics	3
	GEO 713 Urban Geography	3

ECONOMIC:

	GEO 731 Geography of Resources	3
	GEO 732 Industrial Geography	3
	GEO 733 Land Use Analysis	3
	GEO 734 Site Selection	3
	GEO 735 Marketing Geography	3
	GEO 736 Geographic Aspect of Planning	3

PHYSICAL:

	GEO 751 Geomorphology	3
	GEO 752 Climatology	3

REGIONAL:

	GEO 760 Regional Geography	3
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C. Tools and Techniques: (background deficiencies as determined by the department in Tools and Techniques requires course work from this area.)

	GEO 765 Field Methods	3
	GEO 766 Field Problems	3
	GEO 767 Advanced Cartography	3
	GEO 768 Map and Aerial Photo Interpretation	3
	EDP 600 Statistical Method	2

D. Philosophy and Independent Study

GEO 700	Philosophy of Geography	3
GEO 785	Readings in Geography	3
GEO 786	Research in Geography	3

II. RESEARCH — A minimum of five semester hours to be selected from the following.

*GEO 800	Methods of Geographic Research	3
**RES 849	Master's Thesis	4
**RES 829	Research Project	2

III. COGNATE COURSES — courses may be selected in cognate fields from the Graduate School Catalog in consultation with the student's adviser.

IV. COMPREHENSIVE EXAMINATION — The student is required to pass a comprehensive examination.

*Required

**Either required

GEOGRAPHY

MASTER OF EDUCATION

The Master of Education in Geography is intended for those who plan to make a career of teaching at the Elementary and Secondary levels of education.

The degree offers two options, Option A in which a Thesis or Project is required and Option B in which neither a Thesis or Project is required. Option A requires a minimum of 30 semester hours for graduation and Option B requires a minimum of 36 semester hours for graduation.

OPTION A — Option A requires a minimum of thirty (30) semester hours for graduation. This includes nine to eleven (9–11) semester hours of Professional education and seventeen to eighteen (17–18) semester hours in Geography of which five to seven (5–7) are in Research. The Research offers a choice of a Masters' Thesis or a Research Project.

OPTION B — Option B requires a minimum of thirty-six (36) semester hours for graduation. This includes nine to eleven (9–11) semester hours of Professional education and seventeen to eighteen (17–18) semester hours in Geography of which at least five (5) are in Research. No Thesis or Project is required.

CURRICULUM FOR THE MASTER OF EDUCATION DEGREE IN GEOGRAPHY

- I. PROFESSIONAL EDUCATION (Options A and B) – Nine to Eleven (9–11) semester hours
- | | | |
|----------|--|---|
| *EDP 655 | The Curriculum and Teaching of Geography | 3 |
|----------|--|---|
- Select one from the following:*
- | | | |
|---------|------------------------------|---|
| EDP 605 | Philosophy of Education | 2 |
| EDP 606 | General History of Education | 2 |
- Select one from the following:*
- | | | |
|---------|------------------------------------|---|
| EDP 636 | Advanced Psychology of Learning | 3 |
| EDP 685 | Seminar in Audio-visual Techniques | 2 |
- One additional Professional Education with the advice of the adviser in the Geography Department. 2-3
- II. GEOGRAPHY – FIELD OF SPECIALIZATION (Options A and B) – A minimum of twelve (12) semester hours to be selected from the same listing as for the Master of Arts degree.
- III. RESEARCH REQUIRED (Option A) – A minimum of five to seven semester hours to be selected from the following.
- | | | |
|-----------|--------------------------------|---|
| *GEO 800 | Methods of Geographic Research | 3 |
| **RES 829 | Research Project | 2 |
| **RES 849 | Master's Thesis | 4 |
- IV. RESEARCH REQUIRED (Option B) – Five (5) semester hours
- | | | |
|----------|--------------------------------|---|
| *GEO 800 | Methods of Geographic Research | 3 |
| EDP 600 | Statistical Methods | 2 |
| GEE 537 | Computer Science | 2 |
- V. COGNATE COURSES (Options A and B) – Courses may be selected in cognate fields from the graduate catalog with the advice and consent of the adviser.
- VI. COMPREHENSIVE EXAMINATION (Options A and B) – The student is required to pass a comprehensive examination.

*Required

**Either required

HISTORY

MASTER OF ARTS

In addition to the general requirements for admission to graduate studies, applicants who wish to be approved for admission to the History program must also meet the following requirements: (1) a major or

evidence of adequate undergraduate preparation in the field in which the applicant expects to pursue graduate work is required. The adequacy of preparation will be determined by the Graduate History faculty; (2) the applicant must have earned at least a "B" average in the appropriate undergraduate area of specialization. If the applicant is unable to meet this requirement, he or she must take the Miller Analogies Test.

There are two (2) plans for the Master of Arts in History. In Plan I (the 30-hour option), the student must successfully complete a thesis or a research project (2 hours) and Independent Studies (1 hour) in addition to nine (9) approved courses (three (3) each from the chronological and topical areas and one (1) from the non-United States area). Methods of Research and Historiography are required of all students. Plan II (the 36-hour option) consists of twelve (12) courses which include the course requirements in Plan I, except that four (4) courses are required in the two (2) major areas, and Quantitative Methods is a requirement.

Thirty (30) and Thirty-six (36) Credit Options

Three (3) options are available under the Master of Arts Program in History.

Option A Thirty (30) credits, with a thesis

Option B Thirty (30) credits, with a research project

Option C Thirty-six (36) credits, with emphasis on Research Methodology

I. REQUIRED COURSES – Nine (9) credits are required for Options A, B, and C from the following:

*HIS	800	Methods of Research	3
HIS	805	American Historiography	3
**HIS	829	Research Project	2
**HIS	849	Master's Thesis	4

*Required Courses (Option C)

**Either Required (Options A and B)

II. AMERICAN HISTORY, CHRONOLOGICAL AREAS

Option A and B Nine (9) credits minimum

Option C Twelve (12) credits minimum

HIS	700	The Colonial Era	3
HIS	705	The Revolution and Early National Period	3
HIS	706	The Middle Period in U.S. History, 1820–60	3
HIS	715	The Civil War and Reconstruction	3
HIS	716	The Era of Reform, 1873 until World War I	3
HIS	717	The 1930's in the United States	3
HIS	718	The United States Since World War II	3

III. AMERICAN HISTORY, TOPICAL AREAS

Options A and B Nine (9) credits minimum

Option C Twelve (12) credits minimum.

HIS	720	Studies in American Constitutional History	3
HIS	725	Studies of the Afro-American in American History	3
HIS	726	Studies in American Economic History	3
HIS	727	Studies in the Social and Intellectual History of the United States	3
HIS	728	Studies in American Labor History	3
HIS	735	Studies in American Diplomatic History	3
HIS	736	Studies in American Urban History	3
HIS	737	Studies in Pennsylvania History	3

IV. NON-AMERICAN – Three (3) credits are required for Options A, B, and C from the following:

HIS	755	Studies in the History of England	3
HIS	760	Studies in the History of Contemporary Europe	3
HIS	778	History of Russia – Road to Revolution	3

V. INDEPENDENT STUDY

HIS	779	Independent Studies in History	1-3
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INDUSTRIAL ARTS

MASTER OF EDUCATION

The applicant must meet all the general requirements for admission to the graduate school. The applicant should hold an Instructional I teaching certificate or its equivalent. The program provides opportunity for those with the qualifications to prepare for the industrial arts supervisory program, the master of education degree as a terminal degree, or as a program for those pursuing advanced degrees.

Students have the option of selecting one (1) or two (2) program plans leading to a Master of Education Degree in Industrial Arts Education. Plan (A) requires thirty (30) semester hours including a thesis or project and Plan (B) requires thirty-six (36) semester hours without a thesis or project.

Successful completion of all program and course work requirements plus a **satisfactory score** on a comprehensive examination are required for graduation.

Two options are available – please note under the various course areas.

PLAN A: Requires 30 semester hours and a thesis or project.

PLAN B: Requires 36 semester hours without a thesis or project.

I. GENERAL EDUCATION

PLAN A: Two to six (2–6) semester hours in the following courses.

PLAN B: Four to six (4–6) semester hours in the following courses.

GEE 500	Comparative Studies in Literature	2
GEE 505	Great Works in Drama	2
GEE 506	Philosophy and Philosophers	2
GEE 507	Comparative Music	2
GEE 508	Science and Technology	2
GEE 510	History of Mathematics	2
GEE 515	Science Biographies	2
GEE 516	World Resources & Population Problems	2
GEE 517	American Civilization	2
GEE 518	Comparative Institutions	2
GEE 520	Language in Society	2
GEE 525	Community Problems of Health & Safety	2
GEE 526	Mass Communications	2
GEE 527	Community Resource Problems	4
GEE 537	Computer Science	2
GEE 588	Seminar on Creativity	2

Other courses by approval of Department Chairman and Dean.

II. PROFESSIONAL EDUCATION

PLAN A: Two to six (2–6) semester hours in the following courses.

PLAN B: Four to six (4–6) semester hours in the following courses.

EDP 605	Philosophy of Education	2
EDP 606	General History of Education	2
EDP 607	Advanced Educational Psychology	2
EDP 608	Comparative Education	2
EDP 610	Educational Sociology	2
EDP 616	Guidance and Counseling	2
EDP 617	Psychology of Growth and Development	2
EDP 618	Social Psychology	2
EDP 625	Advanced Mental Hygiene	2
EDP 628	Psychology of the Disadvantaged Child	2
EDP 638	Selection & Use of Instructional Materials in the Classroom	2
EDP 685	Seminar in Audio-Visual Techniques	2

Other courses by approval of Department Chairman and Dean.

III. INDUSTRIAL ARTS – FIELD OF SPECIALIZATION

PLAN A: Sixteen to twenty-two (16 to 22) semester hours to be selected from the following areas.

PLAN B: Eighteen to twenty-two (18 to 22) semester hours to be selected from the following areas.

PROFESSIONAL AREA – INDUSTRIAL ARTS

PLAN A: Four to six (4–6) semester hours in the following courses.

PLAN B: Six to eight (6–8) semester hours in the following courses.

IAR 700	Organization & Administration of I.A. (Requires Plans A and B)	2
IAR 703	Industrial Arts as a Teaching Method for Grades K thru 6 (Service Course for Elementary and Special Education Majors)	3
IAR 706	Curriculum Development in Industrial Arts	2
IAR 707	History & Philosophy of I.A. Education	2
IAR 708	Planning the Industrial Arts Laboratory	2
IAR 715	Supervision of Industrial Arts Education	2

LABORATORY AREAS – INDUSTRIAL ARTS

PLAN A: Five to eleven (5–11) semester hours in the following courses.

PLAN B: Nine to sixteen (9–16) semester hours in the following courses.

INDUSTRIAL MATERIALS

IAR 718	Advanced Ceramics	3
IAR 720	Advanced Crafts	3
IAR 730	Research in the Problems of Woodworking	3
IAR 735	Studies in Industrial Patternmaking Techniques	3
IAR 740	Studies in Metal Technology	3
IAR 745	Research in Problems of Metal Machining	3
IAR 770	Industrial Plastics and Their Application to Industrial Arts	3
IAR 784	Industrial Materials Workshop	1-3

POWER

IAR 756	Adv. Studies in Transistor Circuit Theory and Applications	3
IAR 757	Design and Application in Radio and Television Circuits	3
IAR 758	Digital and Analog Computer Circuits as Applied to Industrial Arts Programs	3
IAR 785	Seminar in New Electrical Practices	2

VISUAL COMMUNICATIONS

IAR 705	History & Philosophy of Contemporary Industrial Design	2
IAR 710	Research in Technical Drawing Problems	3
IAR 711	Representational Drawing I	2
IAR 712	Representational Drawing II	2
IAR 716	Problems in Architectural Design	3
IAR 717	Problems in Industrial Arts Design	2
IAR 760	Research in and Development of Graphic Arts Techniques	3
IAR 765	Design Problems Relating to Graphic Arts Reproduction	2
IAR 766	Research in Photographic Techniques	3
IAR 767	Visual Communication Techniques	3

SPECIAL PROBLEMS AND WORKSHOPS – One to six (1–6) semester hours may be selected from the following, and count in the Industrial Arts Field of Specialization within the semester hours requirement.

IAR 709	Special Problem in Industrial Arts	1-2
IAR 786	Industrial Arts & Industrial Practices Workshop	2

IV. RESEARCH

PLAN A: Six to eight (6–8) semester hours to be selected from the following courses: EDP 600; RES 800; and either RES 829 or RES 849.

PLAN B: Six (6) semester hours to include the following courses: EDP 600; RES 800; and IAR 787.

*EDP 600	Statistical Methods	2
*RES 800	Methods of Research	2
IAR 787	Research Seminar in Industrial Arts Ed.	2
**RES 829	Research Project	2
**RES 849	Master's Thesis	4

*Required for both Plans A and B.

**Either required for Plan A.

SUPERVISORY CERTIFICATE IN INDUSTRIAL ARTS

The industrial arts supervisory certificate program extends beyond the Master of Education's degree. Applicants to the program need to hold an Instructional II certificate in industrial arts or its equivalent, and a Master of Education's degree from an accredited college or university. The student is required to apply for admission to the program by writing to the Dean of the Graduate School. The courses for the program are divided into two divisions.

Division One:

All students in the program will need the background provided by the following five courses. These courses may be taken in the Master of Education's degree program, or the student may present evidence of competence related to the course. If neither situation occurs, the student is required to take the course as part of his supervisory program.

IAR 700	Organization and Administration of Industrial Arts	2
IAR 706	Curriculum Development in Industrial Arts Education	2
IAR 707	History and Philosophy of Industrial Arts Education	2

IAR	708	Planning the Industrial Arts Laboratory	2
IAR	715	Supervision of Industrial Arts Education	2

Division Two:

The following courses (12 credits) are especially designed with purpose of increasing the competencies of the prospective supervisor and are required by all who desire the industrial Arts Supervisory Certificate.

EDP	680	Improvement of Instruction through Supervision	2
EDP	685	Group Dynamics	2
IAS	780	Developing Teaching Techniques and Curriculum Materials	2
IAS	785	Seminar in Industrial Arts Supervision	2
IAS	791	Practicum I – Industrial Arts Supervision	2
IAS	792	Practicum II – Industrial Arts Supervision	2

After completion of the courses the student will meet with a certification jury who will make final recommendations to the Dean of the Graduate School for the Supervision Certificate.

MATHEMATICS

MASTER OF ARTS

The applicant must meet all the requirements of the graduate school for admission. The applicant must present a record in mathematics showing evidence of good to superior work on the undergraduate level. There is no language requirement to be admitted to the program.

The Master of Arts Degree in Mathematics has two (2) options:

OPTION I – Has a minimum of 36 semester hours required with a minimum of six semester hours taken in each of the following 4 areas: Analysis, Algebra, Geometry and Applied. There is no thesis required in this option.

Upon satisfactory completion of nine (9) hours of graduate work in the Mathematics Department, the student will apply for candidacy for the Master of Arts degree in Mathematics. If the student is admitted to candidacy he will then be assigned an adviser, who will be responsible for directing the student in his program and if he elects Option II, the adviser will direct his thesis in the field of Mathematics.

OPTION II – Has a minimum of 30 semester hours required with a minimum of six semester hours taken in each of the following 4 areas: Analysis, Algebra, Geometry and Applied. A thesis will be required in this option.

Mathematics courses may be taken in the Master of Arts program and counted toward the requirements in the Master of Education program.

A student that is approved for candidacy will be assigned an adviser who will direct his program. If the student elects Option II and does a Thesis, this adviser will direct the student in this endeavor.

Option I

Minimum of thirty-six (36) semester hours. A minimum of six (6) semester hours from each of the following four (4) areas:

I. AREA OF ANALYSIS – minimum of six (6) semester hours from the following:

MAT 705	Partial Differential Equations	3
MAT 706	General Topology	3
MAT 707	Topics in Applied Analysis	3
MAT 711	Functions of a Real Variable I	3
MAT 712	Functions of a Real Variable II	3
MAT 713	Functions of a Complex Variable I	3
MAT 714	Functions of a Complex Variable II	3

II. AREA OF ALGEBRA – minimum of six (6) semester hours from the following:

MAT 722	Abstract Algebra II	3
MAT 724	Linear Algebra II	3
MAT 728	Group Theory	3
MAT 730	Advanced Topics in Algebra	3
MAT 736	Algebraic Topology	3

III. AREA OF GEOMETRY – minimum of six (6) semester hours from the following:

MAT 743	Projective Geometry I	3
MAT 744	Projective Geometry II	3
MAT 746	Differential Geometry	3
MAT 748	Algebraic Geometry	3
MAT 750	Linear Geometry	3

IV. AREA OF APPLIED MATHEMATICS – minimum of six (6) semester hours from the following:

MAT 762	Mathematical Statistics II	3
MAT 771	Computer and Information Science I	3
MAT 772	Computer and Information Science II	3
MAT 775	Distribution Theory	3
MAT 776	Stochastic Processes	3
MAT 777	Statistical Inference	3
MAT 780	Advanced Topics in Computer Science	3

It may be necessary for some students to take some course(s) in preparation for the above courses. Mathematics courses in the Master of Education degree program may be taken but not counted toward the required thirty-six (36) credits.

Option II

I. AREA OF ANALYSIS – minimum of six (6) semester hours from the following:

MAT 705	Partial Differential Equations	3
MAT 706	General Topology	3
MAT 707	Topics in Applied Analysis	3
MAT 711	Functions of a Real Variable I	3
MAT 712	Functions of a Real Variable II	3
MAT 713	Functions of a Complex Variable I	3
MAT 714	Functions of a Complex Variable II	3

II. AREA OF ALGEBRA – minimum of six (6) semester hours from the following:

MAT 722	Abstract Algebra II	3
MAT 724	Linear Algebra II	3
MAT 728	Group Theory	3
MAT 730	Advanced Topics in Algebra	3
MAT 736	Algebraic Topology	3

III. AREA OF GEOMETRY – minimum of six (6) semester hours from the following:

MAT 743	Projective Geometry I	3
MAT 744	Projective Geometry II	3
MAT 746	Differential Geometry	3
MAT 748	Algebraic Geometry	3
MAT 750	Linear Geometry	3

IV. AREA OF APPLIED MATHEMATICS – minimum of six (6) semester hours from the following:

MAT 762	Mathematical Statistics II	3
MAT 771	Computer and Information Science I	3
MAT 772	Computer and Information Science II	3
MAT 775	Distribution Theory	3
MAT 776	Stochastic Processes	3
MAT 777	Statistical Inference	3
MAT 780	Advanced Topics in Computer Science	3

V. RESEARCH – three (3) credit hours:

*RES 849 Master's Thesis 3-4

**Required

It may be necessary for some students to take some course(s) in preparation for the above courses. Mathematics courses in the Master of Education degree program may be taken but not counted toward the required 27 credits.

MATHEMATICS

MASTER OF EDUCATION

The applicant must meet all the requirements of the graduate school for admission. The applicant must present a record in mathematics showing evidence of good to superior work on the undergraduate level. There is no language requirement to be admitted to the program.

The Master of Education Degree in Mathematics has two (2) options:

OPTION I — Has a requirement of 36 semester hours as follows: 8 semester hours in Professional Education. A minimum of 22 semester hours in Mathematics with at least 4 semester hours taken in each of the following 4 areas: Analysis, Algebra, Geometry and Miscellaneous. Also a minimum of six semester hours in Research are required.

OPTION II — Has a requirement of 30 semester hours as follows: A requirement of 10 semester hours in Professional Education. A requirement of 16 semester hours in Mathematics with a minimum of four semester hours from each of the four areas of mathematics, Analysis, Algebra, Geometry and Miscellaneous. Also a requirement of 4 semester hours in the Area of Research.

Option I

I. PROFESSIONAL EDUCATION — minimum of eight (8) semester hours:

EDP	605	Philosophy of Education	2
EDP	607	Advanced Psychology of Learning	2
EDP	610	Educational Sociology	2
*EDP	626	Current Methods and Philosophy in Mathematics Education	2
EDP	636	Advanced Psychology of Learning	2
EDP	637	Development & Organization of the Curriculum for the Secondary School	2
EDP	638	Selection and Use of Instructional Materials in the Classroom	2
*EDP	680	Seminar in Mathematics Education	2

II. MATHEMATICS – FIELD OF SPECIALIZATION – minimum of twenty-two (22) semester hours. A minimum of four (4) semester hours from each of the four (4) areas.

AREA A: ANALYSIS

MAT 701	Mathematical Analysis I	2
MAT 702	Mathematical Analysis II	2
MAT 703	Differential Equations I	2
MAT 704	Differential Equations II	2

AREA B: ALGEBRA

MAT 721	Abstract Algebra I	2
MAT 723	Linear Algebra I	2
MAT 725	Theory of Numbers	2
MAT 727	Theory of Matrices	2

AREA C: GEOMETRY

MAT 741	Foundations of Geometry I	2
MAT 742	Foundations of Geometry II	2
MAT 745	Vector Geometry	2
MAT 747	Advanced Analytic Geometry	2

AREA D: MISCELLANEOUS

MAT 761	Mathematical Statistics I	2
MAT 765	Mathematical Logic	2
MAT 766	Set Theory	2
MAT 767	History of Mathematics	2
MAT 768	Theory of Arithmetic	2

III. RESEARCH – minimum of six (6) semester hours:

*RES 800	Methods of Mathematics Research	2
*EDP 600	Statistical Methods	2
*EDP 656	Computer Oriented Research	2

*Required

Mathematics courses taken from the Master of Arts Program may replace the courses listed in II above.

Option II

I. PROFESSIONAL EDUCATION – minimum of ten (10) semester hours:

*EDP 600	Statistical Methods	2
EDP 605	Philosophy of Education	2
EDP 607	Advanced Psychology of Learning	2
EDP 610	Educational Sociology	2
*EDP 626	Current Methods and Philosophy in Mathematics Education	2
EDP 636	Advanced Psychology of Learning	2

EDP 637	Development & Organization of the Curriculum for the Secondary School	2
EDP 638	Selection and Use of Instructional Materials in the Classroom	2
*EDP 680	Seminar in Mathematics Education	2

II. MATHEMATICS – FIELD OF SPECIALIZATION – minimum of sixteen (16) semester hours. A minimum of four (4) semester hours from each of the four (4) areas:

AREA A: ANALYSIS

MAT 701	Mathematical Analysis I	2
MAT 702	Mathematical Analysis II	2
MAT 703	Differential Equations I	2
MAT 704	Differential Equations II	2

AREA B: ALGEBRA

MAT 721	Abstract Algebra I	2
MAT 723	Linear Algebra I	2
MAT 725	Theory of Numbers	2
MAT 727	Theory of Matrices	2

AREA C: GEOMETRY

MAT 741	Foundations of Geometry I	2
MAT 742	Foundations of Geometry II	2
MAT 745	Vector Geometry	2
MAT 747	Advanced Analytic Geometry	2

AREA D: MISCELLANEOUS

MAT 761	Mathematical Statistics I	2
MAT 765	Mathematical Logic	2
MAT 766	Set Theory	2
MAT 767	History of Mathematics	2
MAT 768	Theory of Arithmetic	2

III. RESEARCH – minimum of four (4) semester hours:

*MAT 800	Methods of Mathematics Research	2
**RES 829	Research Project	2
**RES 849	Master's Thesis	4

*Required

**Either Required

Mathematics courses taken from the Master of Arts program may replace the courses listed above.

MENTALLY AND/OR PHYSICALLY HANDICAPPED

MASTER OF EDUCATION

The masters degree leading to certification in the area of mentally and/or physically handicapped consists of two tracks. Track A is designed

for students entering the program with elementary certification, secondary certification, speech pathology certification and school nurse certification. Track B is designed for students entering the program with single area certification in special education such as in mental retardation or emotional disturbance. Students in Track A will be required to take all courses listed. Students in Track B will not be required to take ESP 700, 701, and 702. In addition, a competency analysis will be undertaken with each Track B student to determine whether other required courses may be waived. In lieu of required courses, students in Track B will choose from a series of seminars with cross-categorical emphasis. Both tracks would require 33–36 for the masters degree.

TRACK A

MAJOR AREA (30 credits)

*ESP	700	Introduction to Exceptionality	3
*ESP	701	Introduction to Behavior Analysis	3
*ESP	702	Behavior Management and Techniques	3
*ESP	703	Education of Severely/Profoundly Handicapped	3
*ESP	704	Diagnostic Testing & Prescriptive Teaching	3
*ESP	705	Methods and Curriculum I	3
*ESP	706	Methods and Curriculum II	3
*ESP	707	Habilitation Training	3
*ESP	720	Internship	6

RESEARCH (3–6 credits)

*RES	800	Methods of Research	2
**RES	819	Research Paper	1
**RES	829	Research Project	2
**RES	849	Master's Thesis	4

*Required

**One Required

TRACK B

MAJOR AREA (30 credits)

ESP	703	Education Severely/Profoundly Handicapped	3
*ESP	704	Diagnostic Testing & Prescriptive Teaching	3
ESP	705	Methods and Curriculum I	3
ESP	706	Methods and Curriculum II	3
ESP	707	Habilitation Training	3
ESP	720	Internship	6

Remainder of 30 credits to be selected from following list of seminars

*ESP	730	Seminar in Advanced Behavioral Analysis and Design	3
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ESP	731	Seminar in Assessment & Prescription	3
ESP	732	Seminar in Special Education Administration and Supervision	3
ESP	733	Seminar on Educational Alternatives for Exceptional Children	3
ESP	734	Seminar in Counseling Parents of Exceptional Children	3
ESP	735	Seminar in Education of the Gifted	3
ESP	736	Seminar in Research Design and Statistics	3
ESP	737	Seminar in Legislation and Litigation Affecting Exceptional Children	3
ESP	738	Seminar on Teacher Behavior and Group Dynamics	3

RESEARCH (3–6 credits)

*RES	800	Research Methods	2
**RES	819	Research Paper	1
**RES	829	Research Project	2
**RES	849	Master's Thesis	4

*Required

**One required

Students in both Track A and Track B may choose an extended research credit option in lieu of a written master's requirement. Students would pursue the following research block:

RES	800	Methods of Research	2
EDP	600	Statistical Methods	2
GEE	537	Computer Science	2
EDP	656	Computer Oriented Research	2
SOS	808	Social Science Research Techniques	3

POLITICAL SCIENCE

MASTER OF ARTS

30 Hour Option

I. REQUIRED COURSES – Five (5) or nine (9) semester hours

POS	800	Methods of Political Science	3
*RES	829	Research Project	2
*POS	869	Master's Thesis	6

*Either required

- II. Twenty-one (21) or twenty-five (25) semester hours depending upon whether the student does a Master's Thesis or a Research Project. The student shall take one course at least in four of five areas A, B, C, D, E.

A. AREA STUDIES

POS 708	Politics of African Nationalism	3
POS 710	Comparative Communist Systems in Eastern Europe	3
POS 716	Problems of the Soviet Political System	3
POS 728	Politics of Underdeveloped Nations	3

B. DOMESTIC POLITICAL INSTITUTIONS

POS 745	The Legislative Process	3
POS 746	American Chief Executives	3
POS 747	Civil Liberties and Judicial Process	3
POS 748	Problems in Public Administration	3
POS 755	Urban Studies	3

C. INTERNATIONAL AFFAIRS

POS 717	Nationality Problems in the Soviet Union and Eastern Europe	3
POS 718	Problems in International Organization	3
POS 740	American Defense Policy	3

D. POLITICAL PARTIES AND INTEREST GROUPS

POS 756	Modern Political Parties	3
POS 757	The Political Process	3

E. THEORY

POS 705	History of Political Theory	3
POS 730	Comparative Government	3

F. INDEPENDENT STUDY

POS 779	Independent Studies in Political Science	1-3
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36 Hour Option

I. REQUIRED COURSE – Three (3) semester hours

POS 800	Methods of Political Science	3
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II. Minimum of thirty-three (33) semester hours. The student shall take one course at least in four of five areas A, B, C, D, E.

A. AREA STUDIES

POS 708	Politics of African Nationalism	3
POS 710	Comparative Communist Systems in Eastern Europe	3
POS 716	Problems of the Soviet Political System	3
POS 728	Politics of Underdeveloped Nations	3

B. DOMESTIC POLITICAL INSTITUTIONS

POS 745	The Legislative Process	3
POS 746	American Chief Executives	3
POS 747	Civil Liberties and Judicial Process	3
POS 748	Problems in Public Administration	3
POS 755	Urban Studies	3

C. INTERNATIONAL AFFAIRS

POS	717	Nationality Problems in the Soviet Union and Eastern Europe	3
POS	718	Problems in International Organization	3
POS	740	American Defense Policy	3

D. POLITICAL PARTIES AND INTEREST GROUPS

POS	756	Modern Political Parties	3
POS	757	The Political Process	3

E. THEORY

POS	705	History of Political Theory	3
POS	730	Comparative Government	3

F. INDEPENDENT STUDY

POS	779	Independent Studies in Political Science	1-3
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READING SPECIALIST

MASTER OF EDUCATION

Qualified teachers from all academic disciplines, as well as elementary teachers, may apply for admission to the program. The only certification requirement is that the applicant holds at least the college provisional or Instructional Level I Certificate.

A minimum of thirty (30) or thirty-six (36) graduate credits is required for the Master of Education degree as a reading specialist.

REQUIREMENTS FOR THE READING SPECIALIST – 30 HOURS

I. READING AND LANGUAGE ARTS – Fifteen (15) semester hours required:

REQUIREMENTS:

*R	701	Fundamentals of Reading Instruction (K-12)	2
*R	702	Diagnosis and Treatment of Reading Problems	3
*R	703	Practicum – Diagnostic Case Studies	3
*R	704	Practicum – Remedial Case Studies	3

ELECTIVES:

EL	715	Recent Trends in Language Arts	3
EL	738	Children's Literature and Reading	2
EL	780	Seminar in Reading and Language Arts	2
*R	730	Problems in Secondary Reading	2
R	739	Independent Study	1-3

II. EDUCATIONAL RESEARCH – Six (6) semester hours required:

EDP	600	Statistical Methods	2
EDE	706	Evaluation and Measurements	2
*RES	800	Methods of Research	2

**RES	829	Research Project	2
**RES	849	Master's Thesis	4

REQUIREMENTS FOR THE READING SPECIALIST – 36 HOURS

I. READING AND LANGUAGE ARTS – Twenty-one (21) semester hours required:

REQUIREMENTS:

*R	701	Fundamentals of Reading Instruction (K-12)	2
*R	702	Diagnosis and Treatment of Reading Problems	3
*R	703	Practicum – Diagnostic Case Studies	3
*R	704	Practicum – Remedial Case Studies	3
*EL	780	Seminar in Reading and Language Arts	2

ELECTIVES:

EL	715	Recent Trends in Language Arts	3
EL	738	Children's Literature and Reading	2
*R	730	Problems in Secondary Reading	2
R	739	Independent Study	1-3
EDP	650	Perception and Motor Development in Education of Children	2
EDE	750	Classroom Diagnostic Procedures for Reading	3

II. EDUCATIONAL RESEARCH – Six (6) semester hours required:

*EDP	600	Statistical Methods	2
*EDE	706	Evaluation and Measurements	2
*RES	800	Methods of Research	2

REQUIREMENTS FOR BOTH 30 AND 36 HOURS

III. RELATED COURSES – Five (5) semester hours required:

GEE	506	Philosophy and Philosophers	2
GEE	520	Language in Society	2
GEE	526	Mass Communications	2
GEE	588	Seminar in Creativity	2
EDP	605	Philosophy of Education	2
EDP	606	General History of Education	2
**EDP	637	Development and Organization of the Curriculum for the Secondary School	3
EDP	650	Perception and Motor Development in Education of Children	2
EDE	700	Historical Background of Elementary School	2
**EDE	705	Development and Organization of the Curriculum for the Elementary School	3

*Required

**Either required

NOTE: Research Project or Thesis will be done in Reading or in some other phase of Language Arts.

CURRICULUM REQUIREMENTS FOR READING SUPERVISORS PROGRAM

RSU	680	Improvement of Instruction through Supervision	2
RSU	685	Group Dynamics	2
RSP	731	Supervision and Administration of a Reading Program	2
RSP	732	Reading Curriculum and Instructional Materials	2
RSP	733	Reading Internship	4

SCHOOL PSYCHOLOGY

MASTER OF SCIENCE

ADMISSIONS

In addition to the regular requirements for admission to graduate study, applicants for the School Psychology Program must also meet the following requirements: (1) Applicants must have a Bachelor's Degree; (2) Applicants must have an adequate background in psychology, such as courses in General Psychology, Educational Psychology, and Child Psychology and others; (3) Adequacy will be determined by the admission committee of the Psychology Department. The applicant must have at least a 2.75 grade average in his undergraduate work and at least a "B" average in his psychology courses to be considered for admission to the graduate school Psychology Program; (4) Applicants who fail to satisfy the above-mentioned grade requirements may be required to take the Miller Analogies Test. Other applicants with less than a "B" grade average in their Psychology courses may at the discretion of the Psychology Department, be required to take the Miller Analogies Test; (5) Applicants for admission to graduate study will be required to be interviewed by members of the admission committee; (6) Student must file an information sheet to accompany the application.

CANDIDACY

Candidacy: (in addition to graduate school candidacy requirements): (1) Applicants will be required to submit two letters of recommendation; (2) Applicants will be required to write an autobiography; (3) Oral interview by a committee will be required.

A minimum of thirty (30) graduate credits will be required for the Master of Science Degree. A minimum of sixty (60) graduate credits will be required for certification as a School Psychologist.

I. PSYCHOLOGY AND EDUCATIONAL FOUNDATIONS – Minimum Credits – M.S. – (4). Minimum Credits – Certification (4)

A. CORE COURSES (Field of Specialization):

†*PSY	705	Seminar in Adv. General Psychology	2
*PSY	726	Adv. Developmental Psychology	2
EDP	636	Adv. Psychology of Learning	2
†PSY	750	Administration of Pupil Personnel Services	2
*PSY	747	Application of Psychological Principles in Schools	2

B. ELECTIVES:

PSY	701	Personality Theory	2
PSY	702	Psychopathology of Childhood	2
PSY	741	Theories of Counseling and Psychotherapy	2
*PSY	769	Independent Study	2
EDP	605	Philosophy of Education	2
EDP	606	General History of Education	2

*New course

†Required for Master's Degree

II. PSYCHOLOGICAL METHODS AND TECHNIQUES – Minimum Credits – M.S. – (7). Minimum Credits – Certification (9)

A. CORE COURSES (Field of Specialization):

†PSY	721	Adv. Tests & Measurements	2
†PSY	725	Group Testing with Practicum	2
†**PSY	722	Individual Psychological Evaluation I (Binet and Infant Scales)	2
PSY	723	Individual Psychological Evaluation II (Wechsler Scales)	2
PSY	724	Individual Psychological Evaluation III (Assessment of sensory, motor perceptual & language impairments in children)	2
‡PSY	742	Techniques of Counseling and Psychotherapy with Practicum	2
*PSY	755	Group Counseling Techniques & Consultation with Practicum	2
‡PSY	731	Projective Techniques I	2

B. ELECTIVES:

PSY	732	Projective Techniques II	2
*PSY	769	Independent Study	2-4

‡Required for Certification

*New course

**Old course redesigned to meet competencies

†Required for Master's Degree

III. SCHOOL PROGRAMS AND ORGANIZATION – Minimum Credit – M.S. (3). Minimum Credit – Certification (3)

A. CORE COURSES: (Field of Specialization):

**PSY	746	Psychology of Learning Disabilities & Prescriptive Techniques	2
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†EDP	705	Development & Organization of the Curriculum for Elementary Schools	3
ECM	700	Administration & Supervision of Special Education Programs	2

B. ELECTIVES:

EDP	637	Development & Organization of the Curriculum for Secondary Schools	3
ECM	705	Development & Organization of the Curriculum for the Mentally Retarded	2
PSY	795	Seminar in Behavior Modification with Practicum	2
PSY	745	Psychology of the Gifted Child	2
PSY	769	Independent Study	2-4
RSP	702	Diagnosis and Treatment of Reading Problems	2

*New course

**Old course redesigned to meet competencies

†Required for Master's Degree

**IV. RESEARCH METHODOLOGY – Minimum Credits – M.S. (4).
Minimum Credits – Certification (4)**

A. CORE COURSES (Field of Specialization):

†PSY	760	Experimental Methods in Psychology	2
†PSY	765	Psychological Statistics	2

B. ELECTIVES:

PSY	796	Seminar in Analysis of Research in School Psychology	2
*PSY	769	Independent Study	2

*New course

†Required for Master's Degree

**V. RESEARCH – Minimum Credits – M.S. (4). Minimum Credits –
Certification (4)**

A. CORE COURSES (Field of Specialization)

†PSY	849	Thesis	4
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**VI. CLINICAL PRACTICUM – INTERNSHIP Minimum Credits –
Certification – (14)**

A. CORE COURSES (Field of Specialization):

†PSY	772	Internship in School Psychology (minimum of 540 clock hours in supervised experience)	14-18
†PSY	797	Seminar in Problems in School Psychology	2

B. ELECTIVES:

PSY	771	Clinical Practicum	3-6
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†Required for Master's Degree

†Required for Certification

SOCIAL SCIENCE

MASTER OF EDUCATION

Thirty (30) and Thirty-six (36) Credit Options

Three (3) options are available under the Master of Education Program in Social Science

Option A Thirty (30) credits, with a thesis

Option B Thirty (30) credits, with a research project

Option C Thirty-six (36) credits, with research oriented courses

I. SOCIAL SCIENCE

Option A and B Nine (9) credits minimum

Option C Twelve (12) credits

*SOS	800	Social Science Research Techniques	3
SOS	716	Economic, Social, and Political Order	3
SOS	717	Analysis of Power Structure	3
SOS	785	Seminar in World Culture	3
ANT	706	Cultural Institutions	3
**RES	829	Research Project	2
OR			
**RES	849	Master's Thesis	4

*Prerequisite in all other courses in the program

**Either required

II. SOCIAL SCIENCE EDUCATION – Six (6) semester hours to be selected from the following:

(Applies to Options A, B, and C).

SOS	706	Psychological and Discipline Implications in Selecting and Organizing Teaching Materials	3
SOS	707	Philosophical Trends in Social Studies Curriculum	3
SOS	708	Social Studies in the Community	3

III. RESEARCH – Six (6) credits – Limited to Option C. Credits to be selected from the following courses:

*SOS	800	Social Science Research Techniques	3
GEE	537	Computer Science	2
EDP	600	Statistical Methods	2
HIS	801	Quantitative Methods	3
EDP	656	Computer Oriented Research	2

*Required course

IV. ELECTIVE – Twelve (12) credits

Option A and B Nine (9) credits

Option C Twelve (12) credits

GENERAL FIELD OF SOCIAL SCIENCE – Only six (6) of the hours may be taken in the same discipline and at least three (3) hours must be non-western world in orientation.

EDUCATION: Limited to Options A and B.

GEE	537	Computer Science	2
EDP	600	Statistical Methods	2
HIS	801	Quantitative Methods	3
EDP	656	Computer Oriented Research	2

ANTHROPOLOGY

ANT	705	Cultural Anthropology	2
GEE	536	Archaeology Field School	2-4
ANT	701	Archaeology Field School	3-6
ANT	755	18th and 19th Century Folk Crafts and Traditions	3
ANT	703	Living History: Story and Replications of Material Folk Culture	3

ECONOMICS

ECO	715	Economics for the Teachers	3
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HISTORY

HIS	700	Colonial American to 1763	3
HIS	705	The American Revolution and the Federal Period	3
HIS	706	The Middle Period in U.S. History 1820–1860	3
HIS	715	The Civil War and Reconstruction	3
HIS	716	The Era of Reform, 1873 to WWI	3
HIS	717	The 1930's in America	3
HIS	718	The United States since World War II	3
HIS	720	Studies in American Constitutional History	3
HIS	725	Studies of the Afro-American in American History	3
HIS	726	Studies in American Economic History	3
HIS	727	Studies in Social and Intellectual History of the United States	3
HIS	728	Studies in American Labor History	3
HIS	735	Studies in American Diplomatic History	3
HIS	736	Studies in American Urban History	3
HIS	737	Studies in Pennsylvania History	3
HIS	755	Studies in the History of England	3
HIS	760	Studies in the History of Contemporary Europe	3
HIS	778	History of Russia	3
HIS	779	Independent Studies in History	3

POLITICAL SCIENCE

POS	705	History of Political Theory	3
POS	708	Politics of African Nationalism	3
POS	710	Comparative Communist Systems in Eastern Europe	3
POS	716	Problems of the Soviet Political System	3

POS	717	Nationality Problems in the Soviet Union and Eastern Europe	3
POS	718	Problems in International Organization	3
POS	728	Politics of Undeveloped Nations	3
POS	730	Comparative Government	3
POS	740	American Defense Policy	3
POS	745	The Legislative Process	3
POS	746	American Chief Executives	3
POS	747	Civil Liberties and Judicial Process	3
POS	748	Problems in Public Administration	3
POS	755	Urban Studies	3
POS	756	Modern Political Parties	3
POS	757	The Political Process	3
POS	779	Independent Studies in Political Science	3

SPEECH AND HEARING

MASTER OF EDUCATION

Thirty (30) and Thirty-six (36) Credit Options

Three (3) options are available under the Master of Education Program in Speech and Hearing.

Option A Thirty (30) credits, with a thesis

Option B Thirty (30) credits, with a research project

Option C Thirty-six (36) credits, with research oriented courses.

I. GENERAL EDUCATION — Two (2) semester hours selected from the following: (Applies to Options A, B, and C).

GEE	506	Philosophy and Philosophers	2
GEE	520	Language in Society	2
GEE	526	Mass Communication	2
GEE	535	Sociology of the Family	2

II. PROFESSIONAL EDUCATION — Four (4) semester hours selected from the following: (Applies to Options A, B, and C).

*EDP	600	Statistical Methods	2
EDP	616	Guidance and Counseling	2
EDP	617	Psychology of Growth and Development	2
EDP	625	Advanced Mental Hygiene	2
EDP	628	Psychology of the Disadvantaged Child	2
EDP	630	Counseling Parents of Exceptional Children	2

III. FIELD OF SPECIALIZATION — SPEECH AND HEARING — A minimum of fifteen (15) semester hours selected from the following: (Applies to A, B, and C).

SPA	700	Aphasia and Cerebral Palsy	3
SPA	705	Organic Voice Disorders and Cleft Palate	3

SPA	706	Profound Language Disorders	3
SPA	707	Stuttering	3
SPA	708	Neuropathologies of Speech and Language	3
SPA	710	Advanced Clinical Methods	1-3
†SPA	715	Experimental Phonetics (A and B)	3
SPA	716	Administration of Clinical Procedures	3
SPA	720	Diagnostic Audiometrics	3
SPA	725	Bases of Aural Rehabilitation	3
†SPA	749	Independent Study and Research (A and B)	2
†SPA	759	Special Problems in Speech Pathology and Audiology (A and B)	2
SPA	785	Seminar in Speech Pathology	2
SPA	786	Seminar in Audiology	2

IV. COGNATE AREAS – Options A and B may select additional three (3) to five (5) semester hours in this category. Option C may select nine (9) semester hours in this category.

ECM	700	Administration and Supervision of Special Education Programs	2
ECM	717	Current Trends in Special Education	2
ESP	701	Introduction to Behavior Analysis	2
ESP	702	Techniques of Behavior Management and Modification	3
SEM	700	Psychopathology of Youth	2
SEM	701	Psychology of the Socially and Emotionally Maladjusted Child	3
SEM	702	Psycho-Educational Diagnosis of Learning Problems	3

V. RESEARCH – (Options A and B) Four (4) to six (6) semester hours selected from the following:

**SPA	800	Research Methodology	2
**RES	800	Methods of Research	2
***RES	829	Research Project	2
***RES	849	Master's Thesis	4

RESEARCH – (Option C) Six (6) semester hours selected from the following:

EDP	600	Statistical Methods	2
SPA	715	Experimental Phonetics	3
SPA	749	Independent Study and Research	2
SPA	759	Special Problems in Speech Pathology and Audiology	2
††SPA	800	Research Methodology	2
††RES	800	Methods of Research	2

*Required

**Either Required

***Either Required

†Applies to Options A and B

††Either Required (Option C)

V Course Description

General Education
Professional Education
Research
Administration
Biology
Chemistry
Counselor Education
Elementary Education
English
Geography
History
Industrial Arts
Industrial Arts Supervision
Mathematics
Mentally and/or Physically Handicapped
Political Science
Reading Specialist
Reading Supervisor
School Psychology
Social Science
Speech and Hearing



Course Description

GENERAL EDUCATION

GEE 500 COMPARATIVE STUDIES IN LITERATURE 2 cr.
From non-dramatic literary classics such as *The Divine Comedy*, *Don Quixote*, *Paradise Lost*, *The Brothers Karamazov*, *The Mahabaraata*, *The Iliad*, *Les Miserables*, a number will be chosen and studied in some detail both for the enduring values they offer in themselves and for the conclusions that may be drawn from them regarding their cultures, aesthetics, and philosophies.

GEE 505 GREAT WORKS IN DRAMA 2 cr.
Study and comparison of a number of plays by authors of various nationalities (for instance Aeschylus, Plautus, Calderon, Racine, Goethe, Ibsen, Chekhov, Shakespeare, Shaw, O'Neill) for the values they represent in themselves and also as a basis for comparisons in aesthetics, philosophy and culture.

GEE 506 PHILOSOPHY AND PHILOSOPHERS 2 cr.
This course proposes to consider the basic problems of philosophy through the writings of Plato, Aristotle, Kant, Schopenhauer, Bergson, James, Dewey and other thinkers. The guiding aim will be to present diverse views from primary sources. Lecture and discussion will be used. The techniques of the "Great Books" seminars will be used in discussion.

GEE 507 COMPARATIVE MUSIC 2 cr.
This course is designed to analyze music and its effect on our lives. Discussions will be devoted to such areas as Art and Life, why we like music, how we like music, music as an art, music as a humanity and the spiritual factor in music. Some technicalities will be entered into such as the composer's materials, instruments: the means for making music. Many listening experiences will be derived from records. Modern trends in music and our attitude toward "this modern stuff" will be discussed.

GEE 508 SCIENCE AND TECHNOLOGY 2 cr.
In a consideration of the interaction of technology with both the individual and the social institution, current socio-technological problems are used to introduce the major concepts of technology. The concepts include modeling, decision-making, feedback, stability and dynamics. Particular areas include energy, noise and health delivery with emphasis on the man-technology interaction. The major objective is to improve the technological literacy of the student — to give a broad understanding of modern technology (its capabilities, characteristics, and limitations) which is so important as we perform and cope with the problems of the interaction of technology and society.

GEE 510 HISTORY OF MATHEMATICS 2 cr.
A study of the origin and the development of our number system. The development of the fundamental operations of mathematics is stressed. The importance of mathematics to the various stages of civilization is emphasized.

GEE 515 SCIENCE BIOGRAPHIES 2 cr.
A selected series of projects involving the lives of the men of science and the nature of their contributions to science. Emphasis is placed upon the discoveries rather than the lives. Experiments duplicating the pioneer work are utilized wherever possible.

GEE 516 **WORLD RESOURCES AND POPULATION PROBLEMS** 2 cr.
A resume of the world's resources with emphasis upon soils, vegetation (particularly forests), waters, minerals, and human resources. The availability and possible development of these resources in relationship to the world's under-populated and over-populated areas. The availability of a reasonable standard of living in various regions as determined by potential resource development.

GEE 517 **AMERICAN CIVILIZATION** 2 cr.
A treatment of those elements in American life which have given direction to the unique development of the United States.

GEE 518 **COMPARATIVE INSTITUTIONS** 2 cr.
In this course some of the major institutions of a number of modern societies are compared in terms of philosophic defenses, organization, function, alleged outcomes, real outcomes, human costs, etc. Among the institutions examined are: family organization, economic systems, and governmental systems.

GEE 520 **LANGUAGE SOCIETY** 2 cr.
This course will view languages as inventions or creations of men. It is based on the premise that speakers of different languages view their words differently, and therefore, evaluate them differently. It assumes that thinking is relative to the languages learned. It emphasizes the point of view that development in many of the modern sciences has been accelerated by the creation of new systems of representations (languages). It considers also recent evidence that man's creative potential may be seriously impaired by the imposition of prejudices, rigidities, and certainties that are passed along through the languages of all cultures.

GEE 525 **COMMUNITY PROBLEMS OF HEALTH AND SAFETY** 2 cr.
An analysis of the program and problems of the community in health and safety. Dealing with the basic facts and principles of public or community health and safety at the local, state and national levels, including the relationships between public health departments, voluntary health agencies and the school's health and safety program.

GEE 526 **MASS COMMUNICATIONS** 2 cr.
The history, development, function and problems of mass media in America. The various theories of mass communication based on the organization of different societies: authoritarian, libertarian and communist. The social responsibility theory of each and the impact of each on their respective societies.

GEE 527 **COMMUNITY RESOURCE PROBLEMS** 4 cr.
To help elementary, junior, and senior high school teachers improve classroom instruction through the identification and proper utilization of community resources. Emphasis is upon the study of systematic ways for making new knowledge available through utilization of community resources in a form that can be readily integrated into the curriculum. To help the teachers gain a better understanding of the economics, cultural, and governmental life of their community. To help develop a functional relationship between education and other segments of community life. To produce teaching materials for use in the schools of the area.

GEE 535 **SOCIOLOGY OF THE FAMILY** 2 cr.
An analysis of marriage, the family, and kinship systems with the primary focus on the American culture. Cross-cultural patterns from a historical perspective will also be reviewed. Special attention will be paid to marital interaction and family disorganization.

- EDP 619 STUDENT TEACHING SUPERVISION 3 cr.**
 The course is intended for teachers presently acting as cooperating teachers and for those interested in serving in this capacity in the future. A prerequisite for admission to the workshop is three years of teaching experience. This course will provide the opportunity to strengthen clarify, re-think, and revitalize the approach to student teaching supervision.
- EDP 620 CURR. & METH. OF TEACHING BIOL. IN H.S. 2 cr.**
 The primary object of this course is to acquaint teachers-in-service with the thinking and philosophy which went into the building of the BSCS courses of study. The three versions will be studied, and an attempt to evaluate each version against the various school backgrounds will be made. Laboratory projects will be pursued which will serve as source material in the teacher's own classes. Two class hours and two lab hours per week. Prerequisite: Certification to teach biology.
- EDP 625 ADVANCED MENTAL HYGIENE 2 cr.**
 This course is concerned with study of disorders due to physic causes – whether the symptoms are somatic, psychic, or behavioral. Preventive and psychological adjustments of children in a deprived society are analyzed in order to improve their harmonious relationships in group improvement and development.
- EDP 626 CURRENT METHODS AND PHILOSOPHY IN
 MATHEMATICS EDUCATION 2 cr.**
 This course deals with the methods, materials and philosophy of two of the leading groups of modern mathematics. These two bodies have and will continue to influence textbook publications in modern mathematics in the secondary schools.
- EDP 627 EARLY CHILDHOOD EDUCATION 2 cr.**
 This course deals with the growth and development of early childhood education. The emphasis is placed on the child's behavior and how it affects his educative process. Physical, social, emotional, mental development and earlier deficiencies will be systematically observed, tested, and interpreted.
- EDP 628 PSYCHOLOGY OF THE DISADVANTAGED CHILD 2 cr.**
 Emphasis will be placed on insight into the psychology of disadvantaged children. Analysis of research, direct experimentation, and naturalistic observation will be utilized in this study. These tools will be used as methods for compensating earlier deficiencies in the child's environment.
- EDP 630 COUNSELING PARENTS OF EXCEPTIONAL CHILDREN 2 cr.**
 The family as a social system; parental reactions to the child who is defective whether mentally retarded, physically handicapped, sensorily handicapped, emotionally disturbed or gifted; the helping process including principles of interviewing; the initial interview, the terminal interview and the role of the special class teacher in helping the parent to a more realistic acceptance of the child's handicap.
- EDP 635 CBA AND CHEMISTRY MATERIALS 2 cr.**
 This course will cover the methods of chemical bond approach and chemical materials approach to the teaching of high-school chemistry.
- EDP 636 ADVANCED PSYCHOLOGY OF LEARNING 2 cr.**
 A treatment of selected, well known learning theories. These are related to the learning process, derived from rational and empirical source, with the object of showing relationships to teaching and clarifying the developmental processes in conceptual and perceptual areas.

- EDP 637 DEVELOPMENT & ORGANIZATION OF THE
CURRICULUM FOR THE SECONDARY SCHOOL 2 cr.**
Modern practices and procedures in curriculum development will be studied. The students will have opportunities to study objectives, methods, and materials designed to help the secondary teacher. Emphasis will be placed on practical day-to-day problems in the classroom and to long-range curriculum development.
- EDP 638 SELECTION AND USE OF INSTRUCTIONAL
MATERIALS IN THE CLASSROOM 2 cr.**
Designed for teachers, and for instructional materials specialists. Major emphasis is on the improvement of instruction through the informed selection and effective use of instructional materials and equipment. Deals with a broad range in the evaluation of materials including motion picture films, filmstrips, slides, transparencies, flat pictures, recordings, audio tapes, feltboard materials, and study displays.
- EDP 640 IMPROVEMENT OF INSTRUCTION THROUGH
SUPERVISION 2 cr.**
A study of the theory, research, practice and evolving concepts which have practical implications for supervision in the school environment. It views supervision as only a part of a larger entity . . . the operation of the educational system. Supervision is defined as a relationship in which supervisory personnel assist professional and para-professional employees within a specific department to develop effective practices which will improve the quality of instruction and result in individual pupil progress.
- EDP 645 ISSUES AND INNOVATIONS IN SECONDARY
EDUCATION 3 cr.**
The course will emphasize an analytical approach to current issues and innovations in Secondary Education. The major effort will focus on whether the innovations are possible for schools located in Western Pennsylvania. Innovations such as free electives, modular scheduling, open high school, pass-fail grading and career education will be analyzed. The seminar approach will be utilized and participants will be expected to do extensive reading in the above areas.
- EDP 646 CONTEMPORARY TRENDS IN SECONDARY
EDUCATION 3 cr.**
The purpose of the course is to survey the current curricular practices, trends and innovations in secondary education.
- EDP 647 THE MIDDLE SCHOOL; ITS PHILOSOPHY AND MODES
OF OPERATION 3 cr.**
The course will emphasize the differences between the philosophy of the Junior High School and the Middle School. The nature of the Middle School Program, types of students, expected teacher behavior and Middle School Physical Plants will be the major topics. Field trips to new middle schools and sessions with middle school principals will be arranged.
- EDP 648 LEGAL DECISIONS AFFECTING SECONDARY
EDUCATION 3 cr.**
The course will focus on court decisions, state and federal, which have brought about changes in the typical role of secondary school teachers. Student rights, teachers' rights, tenure problems, legality of negotiations and the related problems created by the issues will be the major topics.

- GEO 800 METHODS OF GEOGRAPHIC RESEARCH 3 cr.**
 Consideration of purpose, scope, and procedures of geographic research including problem sensing, data collection, and statistical analysis. Prerequisites: GEO 700; Recommended: GEO 790 and EDP 600.
- HIS 800 HISTORICAL METHODOLOGY 3 cr.**
 Basic methods of historical research are surveyed; proper use of sources, bibliography, annotation; brief analysis of the practical and technical approach of leading historical scientists.
- POS 800 METHODS OF POLITICAL SCIENCE 3 cr.**
 Basic methods of political science research are surveyed; proper use of sources, bibliography, annotation; brief analysis of the practical and technical approach of leading social scientists.
- SOS 800 METHODS IN SOCIAL SCIENCE 3 cr.**
 Basic methods of social science research are surveyed; proper use of sources, bibliography, annotation; brief analysis of the practical and technical approach of leading social scientists.
- RES 829 RESEARCH PROJECT 2 cr.**
 A written report of a scientific investigation is required. It is suggested that the report be based on an actual classroom problem. The report may cover the available literature in the field or it may be based on a classroom experiment. A knowledge of research techniques and scientific reporting is required.
- RES 849 MASTER'S THESIS 4 cr. (certain areas 6 cr.)**
 A thesis is the written report of an exhaustive research made to derive findings and arrive at conclusions in a specific field of investigation. The thesis subject must have the prior approval of a special graduate committee composed of the faculty adviser and two other professors recommended by the Dean of Graduate Studies. The student may expect special guidance in this work from his adviser and other members of his graduate committee.

ADMINISTRATION PROGRAM FOR PRINCIPALS

Since the programs for Elementary and Secondary Principals are competency-based, specific course descriptions for all generic competencies are not available. Most of the background and experiences for the ten (10) generic competencies will be obtained through special seminars, professional laboratory experiences, independent study projects, and field learning contracts. Some of the knowledge competencies will be fulfilled by enrolling in existing graduate courses, such as psychology, history and philosophy of education, and school curriculum.

BIOLOGY

- BIO 700 CELLULAR ULTRASTRUCTURE 3 cr. (lecture)**
 The fine structure of cellular organelles as revealed by the electron microscope is discussed in relation to organelle and cell function. Ultrafine structure of the cell membrane, cell wall, nucleus, mitochondria, Golgi apparatus, locomotor organelles, etc., are included. This course does not include instruction in the techniques of electron microscopy.

BIO 705 CELLULAR PHYSIOLOGY 4 cr. (3 hrs. lecture, 2 hrs. lab)

The physiology of the cell with emphasis on the relationship of cell structure and function. Includes physical and chemical aspects of cells, the relation of cells to their environment, energy conversions in cells, membrane permeability, photosynthesis, and enzyme action. Prerequisite: Organic Chemistry.

BIO 706 BACTERIOLOGY 4 cr. (3 hrs. lecture, 2 hrs. lab)

A critical analysis of the biology of the bacteria is undertaken, correlated with their role in public health, medicine, and industry where applicable. Physiological and biochemical properties of the bacteria are discussed and experimentally tested as a basis of the rationale of control. Staining techniques, isolating, culturing, counting, and identification are performed during the progression of these investigations. Prerequisite: Organic Chemistry.

BIO 707 MYCOLOGY 4 cr. (3 hrs. lecture, 2 hrs. lab)

An extensive examination of the fungi is undertaken with emphasis on the filamentous form. The cytology, physiology, and morphology of the fungi are studies to determine their place in nature. Techniques in isolating, culturing, counting, photographing, and identifying fungi will be pursued in the laboratory. Prerequisites: Botany I, Microbiology, and consent of instructor.

BIO 708 MICROBIAL ECOLOGY AND PHYSIOLOGY

4 cr. (3 hrs. lecture, 2 hrs. lab)

Detailed analyses of the anabolic and catabolic activities of bacteria, fungi, and algae are studied. The microbiological processes of nitrification, denitrification, chemosynthesis, bacterial and algal photosynthesis, fermentation, and antibiosis will be examined, with reference to ecological interactions with man and other organisms. Prerequisites: Microbiology and Organic Chemistry.

BIO 715 TISSUE CULTURE 4 cr. (3 hrs. lecture, 2 hrs. lab)

This course deals with methodology of cell and tissue culture. Basic cell structure, behavior of cells in culture; cells and their environment; media for culturing cells are discussed. Laboratory work also been practiced on preparation of apparatus, glassware, etc.; sterilization procedure and aseptic technique; primary explantation techniques; cell line establishment, trypsinization; preparation of culture media, solutions, chick plasma and embryo extracts; and chromosome preparation from tissue culture.

BIO 716 CYTOGENETICS 4 cr. (3 hrs. lecture, 2 hrs. lab)

This course aims at a comprehensive understanding of mitosis, meiosis, crossing over, chromosome morphology and karyotyping. Special emphasis also on human cytogenetics including sex determination, sex chromatin, congenital malformations associated with anomalies of autosomes and sex chromosomes, mutagenic effects of drugs, radiation, etc., and the most recent technique of chromosome banding and mapping.

BIO 717 POPULATION GENETICS 3 cr. (lecture)

This course is based upon the Hardy-Weinburg law of population genetics, the recent works of Theodosious Dobzhansky when at Columbia University and of Bruce Wallace of Cornell. The role of the Hardy-Weinburg formual in explaining trends in population and the significance of heterozygosity in the retention of unfavorable genes in the population will be emphasized. The algebra and statistics of genetics will be used to clarify evolutionary trends, including the Hardy-Weinburg equation, chi-square, probability, and analysis of variance. A class project will be run on Drosophila population studies. Prerequisite: Advanced Genetics.

BIO 718 ADVANCED PROBLEMS IN GENETICS 3 cr. (lecture)

This course is essentially molecular and microbial genetics. The topics covered will vary somewhat from year to year but will usually include protein structure, function, and structural determination, nucleic acids and protein synthesis, mutation rate and mechanisms, mechanism of recombination found in microbial transformation, transduction, and conjugation. Prerequisite: Genetics.

BIO 721 BIOCHEMISTRY I 4 cr. (3 hrs. lecture, 2 hrs. lab)
(taught in Chemistry Department)

A comprehensive survey of the properties of amino acids, elucidation of protein structure, protein biosynthesis, the Genetic Code, and carbohydrate metabolism. The laboratory will include methods of separation, such as dialysis, gel filtration, adsorption chromatography, ion-exchange chromatography, partition chromatography, thin-layer chromatography, electrophoresis, spectrophotometry, fluorimetry, and qualitative and quantitative determination of carbohydrates and proteins. Prerequisite: Organic Chemistry I and/or instructor's permission.

BIO 722 BIOCHEMISTRY II 4 cr. (3 hrs. lecture, 2 hrs. lab)
(taught in Chemistry Department)

A continuation of Biochemistry I and including fatty acid biosynthesis, fatty acid metabolism, photosynthesis, protein metabolism, vitamins, hormones and immunology. The laboratory will include qualitative and quantitative determination of fats and steroids, and work with nucleic acids, enzymes, vitamins, and hormones. Prerequisite: Biochemistry I and/or instructor's permission.

BIO 725 MOLECULAR BIOLOGY 4 cr. (3 hrs. lecture, 2 hrs. lab)

This course will go beyond the content of the biochemistry courses to emphasize macromolecular biological synthesis and function, enzymology, genetic and cellular control systems such as the operon and repressors, cyclic reaction systems such as electron transport, phosphorylations, pentose shunt, tricarboxylic acid cycle; special techniques such as reaction kinetics, cell fractionation, purifications, and assays for peptides, isoenzymes, DNA, cyclic AMP, NAD, vitamins, etc.; and the biochemistry of natural products, alkaloids, terpenes, pigments, hormones, pesticides, medicinals, and other classes of compounds. Prerequisites: Biochemistry I and II or consent of instructor.

BIO 730 ANIMAL SYSTEMATICS 4 cr. (3 hrs. lecture, 2 hrs. lab)

A general survey of the animal kingdom from the taxonomic point of view, with emphasis on morphology and phylogeny as bases for classification. Also, some attention to ecological and geographical distribution of animal life. Prerequisites 15 credit hours of Biology.

BIO 735 COMPARATIVE VERTEBRATE ANATOMY 4 cr. (3 hrs. lecture, 2 hrs. lab)

A comparative study of the Chordata from prochordates to mammals with emphasis on the evolution of the vertebrates, including man. Lectures and class discussions will be held in the laboratory, with selected specimens used for dissection for the purpose of making comparisons quickly and accurately. Prerequisite: Zoology II.

BIO 736 ANIMAL DEVELOPMENT 3 cr. (lecture)

A study of the development of the vertebrate embryo, emphasizing the frog, teleost, chick, and pig. Prerequisite: Zoology II.

BIO 737 ANIMAL BEHAVIOR 3 cr. (lecture)

Basic neuroanatomy, neurophysiology, and neurochemistry, plus a comparative

For students and teachers who wish to collect, save, and work with specimens available to them, but lack the information for preserving them. It encompasses field study, collection, preservation, and illustration of the major divisions of plant kingdom with consideration of the major habitats, the value of field notes and the tabulation of laboratory data.

BIO 757 PLANT SYSTEMATICS 4 cr. (3 hrs. lecture, 2 hrs lab)

A course designed to explore the history of plant classification and its culmination in present-day taxonomic practices, the evolution of the vascular plants, and a definitive study of their representative modern families. An extensive plant collection will be required of each student. Prerequisites: Botany I and II.

BIO 758 PLANT ANATOMY AND MORPHOGENESIS 4 cr. (3 hrs. lecture, 2 hrs lab)

A study of plant growth and descriptive experimental studies on cells and meristems. How plant correlation, polarity, symmetry, differentiation, regeneration, tissue mixtures and abnormal growth are involved in the distinctive phenomena of morphogenesis. Laboratory work will consist largely of the growth of representative plants from the seeds in the laboratory. Experiments will show the effects of light, temperature, water and various other physical factors together with chemical substances such as growth substances and the various genetic factors.

BIO 760 ADVANCED PLANT PHYSIOLOGY 3 cr. (lecture)

Advanced studies of plant processes — photosynthesis, respiration, mineral metabolism, water relations, plant growth substances, and environmental plant physiology, including recent advances in the field. Prerequisites: Elementary Plant Physiology or equivalent; also courses in general physics and organic chemistry.

BIO 766 BIOMETRY 3 cr. (lecture)

A study of statistical techniques, applied to experimental design and analysis of biological problems in the field and the laboratory, with emphasis on multivariate situations and on insuring validity of results. Prerequisites: College Algebra or Statistics.

BIO 767 LAB INSTRUMENTATION FOR BIOLOGY 4 cr. (3 hrs. lecture, 2 hrs. lab)

A consideration of both theoretical and practical aspects of laboratory instrumentation which apply to continuing study and research in biology. Subject areas include advanced optical microscopy such as phase, fluorescence, and photomicrography; various techniques of chromatography including gas, liquid, gel, thin layer, and paper; electrophoresis; spectrophotometry and colorimetry in the UV, visible, and IR regions; pH and buffering; cell disruption and fractionation techniques; ultracentrifugation, and special assays of interest to the student. Prerequisites: Analytical Chemistry or permission of instructor.

BIO 768 TECHNIQUES IN ELECTRON MICROSCOPY 4 cr. (3 hrs. lecture, 2 hrs. lab)

Detailed training in the operation and care of the electron microscope; techniques of specimen preparation for electron microscope visualization, including fixation, embedding, and ultrathin sectioning and special techniques such as replication and shadow casting. Prerequisites: BIO 762 and consent of instructor.

BIO 770 CONFERENCE ON ELECTRON MICROSCOPY 4 cr. (3 hrs. lecture, 2 hrs. lab)

Principles and techniques involved in electron microscopy, operation of the electron

CHEMISTRY

CHE 701	ADVANCED INORGANIC I	3 cr.
A study of the geometry of atoms and molecules as related to electronic structure and the relationship between chemical and physical properties electronic structure.		
CHE 702	ADVANCED INORGANIC II	3 cr.
A study of the nature and properties of coordination compounds.		
CHE 705	INORGANIC PREPARATIONS	2 cr.
Syntheses of selected inorganic compounds.		
CHE 711	ADVANCED ANALYTICAL I	3 cr.
Chemical and Physical methods of separation.		
CHE 712	ADVANCED ANALYTICAL II	3 cr.
Instrumental Analysis and Spectroscopy.		
CHE 721	ADVANCED ORGANIC I	3 cr.
A survey of the types of chemical bonds, resonance, radicals, carbenes, confirmation analysis, aromaticity and the reactions of some of the important types of organic compounds.		
CHE 722	ADVANCED ORGANIC II	3 cr.
A survey of the modern concepts of organic chemistry and their use in the interpretations of data in terms of mechanisms of organic reactions.		
CHE 731	ADVANCED PHYSICAL CHEMISTRY I	3 cr.
Classical and statistical thermodynamics as applied to chemical systems.		
CHE 732	ADVANCED PHYSICAL CHEMISTRY II	3 cr.
Kinetics and electrochemistry.		
CHE 735	QUANTUM MECHANICS	3 cr.
An introduction to the concepts of quantum mechanics with applications to chemical systems.		
CHE 736	FOUNDATIONS OF SCIENCE EDUCATION	2 cr.
An examination of the historical, philosophical, sociological, and psychological foundations of science education.		
CHE 737	SCIENCE IN THE SCHOOL CURRICULUM	2 cr.
Foundations for science curriculum methods of curriculum development, current developments, planning and evaluation procedures and research.		
CHE 745	MATHEMATICS FOR CHEMISTS	3 cr.
Differential equations, partial differential equations, boundary value problems, vector analysis, fourier analysis, matrix operations and complex variables with particular reference to specific chemical systems and problems in thermodynamics, statistical mechanics, kinetics and quantum mechanics.		
CHE 746	SUPERVISION OF SCHOOL SCIENCE PROGRAMS	2 cr.
This course is concerned with the supervision of the total science education program in public schools with an emphasis on secondary education. Some of the major topics include: principles of supervision, objectives, curriculum development, recent trends and evaluation of teaching.		

CHE 747 SUPERVISION OF SCIENCE TEACHERS 2 cr.
This course is designed to help those persons supervising the laboratory experience of student teachers and other teacher education students in science.

CHE 748 ENVIRONMENTAL CHEMISTRY FOR SCIENCE MAJORS 2 cr.
The course begins with basic chemical principles including the structure of atoms, molecules, chemical reactions, stoichiometry, organic molecules and functional groups; the second half of the course deals with various aspects of air pollution, water pollution, heavy metals contamination, pesticides and air and water pollution by radioactive substances.

CHE 754 ASTRONOMY FOR TEACHERS 2 cr.
This course is designed for teachers who wish to incorporate the science of astronomy and associated activities into their teaching environment. Activities within the course are highly individualized and will utilize our Celestron 10 and our 12.5 inch Criterion reflecting telescopes. Visits to nearby optical and radio observatories will be scheduled.

CHE 755 PHYSICO-CHEMICAL PRINCIPLES 2 cr.
The unprecedented importance of science requires intensive study of efficient methods for transmitting to our children the principal intellectual achievements of science, together with an understanding of how these achievements were, and are being obtained.

This course is based on the premise that the major principles of chemistry and physics can be viewed through "Big Ideas" or conceptual schemes, that will serve to summarize this vast body of knowledge. Thus the course will have a dual purpose:

1. To review major concepts in a unified manner.
2. To provide an alternative frame of reference for the science teacher in building the science curriculum.

The seven conceptual schemes as advanced by the National Science Teachers Association (NSTA), will serve as the basic framework for the course.

CHE 756 BASIC CONCEPTS OF PHYSICS 2 cr.
Basic concepts and principles of classical physics together with selected topics in contemporary physics. Designed to strengthen the physics background of science teachers.

CHE 757 HISTORY OF CHEMISTRY 2 cr.
The course begins with early man's ideas concerning the nature of things and his acquired knowledge of the properties of things through arts and crafts. The beginning and development of chemistry are then traced from alchemy through the phlogiston theory up to organic chemistry; finally, a look at the impact of instrumentation upon chemistry, and general directions taken by chemistry in the twentieth century.

CHE 758 LITERATURE OF CHEMISTRY 2 cr.
Chemical library usage for information retrieval and introduction to modern methods of chemical information handling.

CHE 780 SEMINAR IN SCIENCE EDUCATION 2 cr.
A course dealing with the problems arising out of the practice of science education in public schools. Problems will be common to the participants. Emphasis is on developing skills and understandings leading to problem solution.

CHE 790 INDIVIDUAL STUDIES IN SCIENCE EDUCATION 1-3 cr.
Designed to enable students to pursue areas of interest in science education with the help of a graduate faculty member. May be repeated to a maximum of 3 credits.

CHE 796 **INDIVIDUAL STUDIES IN PHYSICS** **1-3 cr.**
Designed to enable students to pursue areas of interest in physics with the help of a graduate faculty member. May be repeated to a maximum of 3 credits.

COUNSELOR EDUCATION ELEMENTARY GUIDANCE

ELG 701 **ORGANIZATION & ADMINISTRATION OF
GUIDANCE IN THE ELEMENTARY SCHOOL** **2 cr.**
The purpose of this course is to provide the guidance counselor with an overview of the necessary competencies for organizing, administering, and evaluating elementary guidance programs. The major function of an elementary school counselor is that of building a better learning climate for all children. In order to develop a program conducive to this end, the prospective counselor must become familiar with the developmental needs of the child as well as his own needs and values. Therefore, a major focus of this course is to increase individual self awareness.

ELG 702 **COUNSELING THEORY** **2 cr.**
This course deals with theories, objectives, principles, and practices of guidance and counseling concerning the child, the family, socioeconomic problems of the community institutions, and agencies.

ELG 703 **CONSULTING THEORY** **2 cr.**
The purpose of this course is to develop an understanding of education as a social institution. Social institutions will be viewed as a historical product of the particular cultural milieu that they develop in. An attempt will be made to create in the student an understanding of the elements, processes and conditions in learning and socio-educational systems that are optimal for human development.

ELG 705 **DEVELOPMENTAL GROUP COUNSELING** **2 cr.**
The meaning, functions, types, and principles of the group approach to elementary guidance and counseling; the dynamics of group interaction; the leadership of groups; role playing; personal development in groups; group guidance and counseling techniques; influence of group processes on individual development.

ELG 709 **INDEPENDENT STUDY** **1-2 cr.**
The student will have an opportunity to do independent study or research in elementary counseling. The student will be guided by a member of the elementary counseling staff. (By permission of adviser)

ELG 711 **PRACTICUM I** **2 cr.**
The practicum begins with a review of counseling theory and techniques, then moves to analysis of tape recordings, observations of actual counseling interviews, and counseling experiences. Practicum I should be completed within the first 12 credits of the student's program. Prerequisites: ELG 701 and ELG 702

ELG 712 **PRACTICUM II** **2 cr.**
This is a continuation of ELG 711 with emphasis on counseling and consulting with children, teachers, and parents in a local school district. Both individual and group counseling experiences will be developed. Prerequisite: ELG 711.

ELG 713 PRACTICUM III 2 cr.
This is a continuation of ELG 712. This course will serve as a culmination of practicum experiences. The course is flexible so it may meet individual needs of counselor trainees with varying degrees of skills while ensuring the minimum standards of competence in counseling. Prerequisite: ELG 712.

ELG 715 ADVANCED COUNSELING THEORY 2 cr.
The initial phase of the course will review with theories and the role that it plays in the counseling process. The second phase of the course deals with building around the various theoretical approaches to counseling. Counseling approaches that will be considered include: 1) rationale; 2) learning theory; 3) analytic; 4) phenomenological aid 5) existential.

The final aspect of the course involves students attempting to incorporate a counseling approach into their own personality and making an attempt to put into use this approach through role playing.

ELG 716 ADVANCED CONSULTING THEORY 2 cr.
This is a continuation of ELG 703 Consulting Theory. Therefore, a review of ELG 703 will be made. Central to the course will be looking at our educational systems in terms of policies, procedures and practices. The concepts of power and authority will be considered in terms of bringing about institutional change. The ultimate goal of this course is to have students aware of how changes are made in institutions and the roles that they can play in bringing about these changes.

ELG 785 RESEARCH SEMINAR IN COUNSELOR EDUCATION 2 cr.
This course is designed to give the student a comprehensive review of the research and current literature in counselor education. Critical study and evaluation of research findings from the literature (Personnel & Guidance Journals, Elementary School Guidance Journal, etc.) will be emphasized.

ELG 786 SEMINAR IN CAREER INFORMATION 2 cr.
This course is intended to provide counselors and other personnel workers with an introductory study of major theoretical thinking about vocational development and decision-making. It is intended to survey the world of work and the impact of its constantly changing nature on the individual. An opportunity to consider the rationale and applications of an information service, with attention to such issues as classifications of occupations, types and sources of information and their evaluation will be provided. An examination of the counseling process with regards to vocational development and choice theory, use of information, and specific counseling goals will be made.

ELG 787 INTEGRATED SEMINAR 2 cr.
This course is designed for graduate students in elementary counseling who have completed all course requirements. The purpose of the course is to culminate the students' graduate work by synthesizing previous course work and experiences in counseling.

SECONDARY GUIDANCE

Since the Secondary Guidance Program is competency-based, it is not course oriented. Therefore, prescriptions to fulfill the five (5) generic competencies will consist of such activities as special seminars and professional laboratory experiences.

ELEMENTARY EDUCATION

- EDE 700 HISTORICAL BACKGROUND OF THE ELEMENTARY SCHOOL** 2 cr.
 Emphasis is given to historical and philosophical backgrounds as they have been developed in the elementary school. In this course the student will have an opportunity to interpret modern educational issues as influenced by the past.
- EDE 705 DEVELOPMENT AND ORGANIZATION OF THE CURRICULUM FOR THE ELEMENTARY SCHOOL** 2 cr.
 The student has an opportunity to study the development of the school curriculum in relationship to the philosophy and objectives of the local school. Special emphasis is placed on recent trends in elementary curriculum development.
- EDE 706 EVALUATION AND MEASUREMENTS IN THE ELEMENTARY SCHOOL** 2 cr.
 This course is concerned with the assumptions, implications, principles, concepts and purposes of testing in the public school. Principles of test construction, validity, reliability and other criteria of evaluating instruments are studied. Major emphasis is on achievement testing; however, consideration is also given to the nature and measurement of intelligence, aptitude testing and disseminating and reporting test information and data.
- EDE 707 CREATIVE ACTIVITIES IN THE ELEMENTARY SCHOOL** 2 cr.
 In this course the student is acquainted with creative teaching techniques. The student is given opportunities to demonstrate his own creativity through various projects and special assignments, with emphasis on art, music, writing, and drama.
- EDE 708 DEVELOPMENTAL READING IN THE ELEMENTARY SCHOOL** 2 cr.
 Emphasis is placed on reading trends and various procedures for teaching reading. Through research findings, current literature and discussions the student will be able to organize, administer, and evaluate a developmental reading program.
- EDE 710 TEACHING READING IN CONTENT SUBJECTS** 2 cr.
 Developing the basic vocabularies and concepts needed in the fields of arithmetic, social studies, geography and science. Interpreting and using symbols, pictures, tables and graphic materials. Developing an awareness of and proficiency in the various reading skills needed in the selection, interpretation, organization, and presentation of data obtained through reading textbooks and resource materials in these fields.
- EDE 715 RECENT TRENDS IN LANGUAGE ARTS** 3 cr.
 A study of recent trends and research findings for teaching language arts in the elementary school is made. The students examine, use, and evaluate current textbooks and materials that are available in the Language Arts Field. Modern methods of teaching language arts are studied through laboratory techniques — observations and discussions.
- EDE 716 SPECIAL PROBLEMS IN ELEMENTARY SOCIAL STUDIES** 3 cr.
 This course is organized around current problems of teaching social studies — planning a social studies program, methods of teaching, available materials and textbooks. Opportunities for developing units of learning and making independent studies of trends in teaching Elementary Social Studies are presented.

EDE 717 **GEOGRAPHY IN THE MODERN ELEMENTARY SCHOOL** 2 cr.
The course emphasizes techniques and methods for teaching geography in the elementary school. Proper use of textbooks, maps, and other tools of learning used in teaching geography as studied. The student has an opportunity to work on individual classroom problems or programs. The student becomes acquainted with the various skills that are essential to the study of geography at each grade level.

EDE 718 **ARITHMETIC IN THE ELEMENTARY SCHOOL** 2 cr.
Emphasis is on understanding the child's perceptions and the child's cognitive development, especially as related to mathematics. Activities appropriate to the developmental and academic levels of elementary school children will be demonstrated. (As time permits, critical analyses of commercial arithmetic materials and texts, as well as recent trends and current curricular projects in arithmetic will be undertaken.)

EDE 720 **RESOURCE MATERIALS IN ELEMENTARY SCIENCE** 2 cr.
This course is designed to acquaint the student with the various resources which might be utilized to advantage in an elementary science program. The resources to be investigated and studied include plant and animal resources, soil and mineral resources, human resources, and the resources of business and industry. Emphasis is placed on the application of these resources to classroom situations.

EDE 725 **THE CREATIVE ELEMENTARY MUSIC PROGRAM** 2 cr.
This course is designed to show the elementary teacher how to guide the musical activities of his students. Through extensive activities in simulated classroom situations, the teacher learns how to integrate, simultaneously, all aspects of music into a song so that the children may realize a complete and challenging musical experience. These areas include creativeness, rhythmic activity, listening, reading, games, dances, and playing on instruments. Students have many opportunities throughout the course to analyze worthy song material and follow through by planning and teaching to the class appropriate activities in the aforementioned areas.

EDE 726 **ART EDUCATION FOR THE ELEMENTARY GRADES** 2 cr.
A course to provide students who expect to teach in the elementary grades with a basis for ever increasing spiritual and intellectual horizons through the study of art and its historical and contemporary significance as an important creative force in our society. A climate for research and analysis of art forms in the arts will be established to meet the individual needs of students.

EDE 727 **GUIDANCE IN THE ELEMENTARY SCHOOL** 2 cr.
Evaluate instruments and procedures used by the classroom teacher; creation of conditions for mental health; relation of guidance to other phases of instruction. Testing, case studies, and parent-teacher relations are stressed. Prerequisite: Educ. Psychology.

EDE 728 **PROBLEMS IN HEALTH AND PHYSICAL EDUCATION
FOR THE ELEMENTARY SCHOOL** 2 cr.
A survey of the problems and research concerning teachers' responsibilities for the health and physical activities of elementary school children.

EDE 730 **TEACHING IN KINDERGARTEN AND THE PRIMARY
GRADES** 2 cr.
Students discuss purpose, direction, curriculum development, methods materials and techniques for working with children in kindergarten and the primary grades.

EDE 735 **PSYCHOLOGY OF THE EXCEPTIONAL CHILD** 2 cr.
To provide an enlarged and more precise concept of the characteristics and needs of children who are in some respect exceptional. Basic principles of educational practice with systematic instruction in relation to exploratory charts, sociograms and case studies.

EDE 736 **ORGANIZATION AND ADMINISTRATION OF THE**
ELEMENTARY SCHOOL 3 cr.
A comprehensive view of the major aspects of organization and administration of the elementary school is presented. Recent trends including the open-classroom are given special emphasis. Wherever possible theoretical bases are related to specific administrative and organization practices. Particular attention is given to the various roles of the elementary principal in the school.

EDE 738 **CHILDREN'S LITERATURE AND READING** 2 cr.
This course is designed as a vital entity of the total reading program in the elementary school. Permeating all instruction in the course is the philosophy that children's growth in and through reading is dependent on developing lasting interests and skills in reading; on an understanding of the world and human relationships; and on an appreciation of fine literature which must have its roots enmeshed in the elementary reading program. The emphasis on ways in which teachers can use literature in the classroom to meet children's needs and interests, to deepen their insights, and to heighten their appreciations of an extensive range of prose and poetry of literary quality will be a prime focal point.

EDE 740 **RECENT TRENDS IN ELEMENTARY SCHOOL**
SCIENCE 2 cr.
This course is designed to acquaint elementary school teachers with representative samples of the newer elementary science curricula developed within the past ten years. Emphasis will be placed upon the inquiry approach to teaching science, which actively involves children with science materials. The philosophical foundations of such elementary science programs as the Science Curriculum Improvement Study, Science — A Process Approach, and the Elementary Science Study will be considered. The implications of the most modern psychological studies will be included in relation to the newer elementary science curricula. Teachers will engage in actual laboratory activities that exemplify these recent approaches to teaching elementary science.

EDE 745 **TOPICS IN ALGEBRA FOR THE ELEMENTARY**
MATHEMATICS TEACHER 2 cr.
A presentation of Algebraic Structures which will serve as a mathematical guide in the teaching of Arithmetic.

EDE 746 **TOPICS IN GEOMETRY FOR THE ELEMENTARY**
MATHEMATICS TEACHER 2 cr.
Geometry activities appropriate to the elementary school, such as geoboards, mirror cards, and curve stitching, are presented. Emphasis is also on an introduction to the axiomatic method, exemplified by finite geometries, and culminating with an historical discussion of Euclid's parallel postulate and the discovery of non-Euclidean geometries. The contributions of the Renaissance painters to the fields of projective geometry and perspective drawing will be briefly treated to motivate the notion of and the importance of the invariance of the cross-ratio. Certain intuitive notions of topology together with the child's perception of space and topology are considered.

- EDE 747 TRENDS AND CURRENT RESEARCH FINDINGS IN ELEMENTARY MATHEMATICS** 3 cr.
 A review of recent and current elementary school mathematics programs will be presented; a good point for departure is CURRICULUM DEVELOPMENT IN ELEMENTARY MATHEMATICS, written under theegis of the Far West Laboratory of Educational Research and Development. In this course, attention will be directed toward the differences between current curricular programs (many are activity oriented and child oriented) and the so called "new math" projects of the late 1950's and the early 1960's (most of which were content oriented). For those students who wish, the opportunity is available to work on individual projects or to contribute to or continue with on going research projects.
- EDE 748 MATERIALS, RECREATIONAL MATHEMATICS AND EVALUATIVE TECHNIQUES IN ELEMENTARY SCHOOL MATHEMATICS** 2 cr.
 To help in-service teachers: (1) become aware of, implementation of, and understanding of variety and quality of mathematics materials available; (2) to understand the need for, to appreciate mathematical concepts, and to become aware of sources of recreational mathematical materials; (3) to understand role of evaluation in mathematics to understand various methods of evaluation and types of tests available, and to develop proficiency in evaluating and interpreting test results.
- EDE 750 CLASSROOM DIAGNOSTIC PROCEDURES FOR READING** 3 cr.
 This course is designed to acquaint the regular classroom teacher with the causes of retardation in reading, to familiarize the teacher with diagnostic procedures, and to provide the teacher with the skills and techniques of remediation.
- EDE 755 TECHNIQUES IN DIAGNOSIS OF REMEDIAL PROBLEMS** 2 cr.
 The purpose of the course is to provide the guidance counselor and the elementary teacher with experiences in using and evaluating the various tests, tools, and techniques which may be utilized for diagnostic purposes.
- EDE 780 SEMINAR IN READING AND LANGUAGE ARTS** 2 cr.
 Investigation and discussion of problems related to current practices, research and trends in the reading-language arts area. Specific topics vary from semester to semester to meet student needs. Additionally, students are encouraged to pursue an individual problem in an area of special interest.
- EDE 785 SEMINAR: CURRENT ISSUES AND INNOVATIONS IN ELEMENTARY EDUCATION** 2 cr.
 This course is concerned with the perspectives of today's dynamic society. Pertinent issues and innovations in elementary education will be discussed, investigated, and analyzed.
- EDE 787 SEMINAR IN ELEMENTARY ART EDUCATION** 2 cr.
 A course dealing with tools, materials, techniques, and processes suitable for elementary children.
- EDE 790 INDEPENDENT STUDY** 1-3 cr.
 This course is designed to provide the student with a multiplicity of options that lend themselves to individual investigation and/or design. The student may register for 1, 2 or 3 credits.

EDE 809 RESEARCH PROJECT SEMINAR 2 cr.
The purpose of this course is to help the student relate the ideas of Elementary Education and his role as a teacher to specific educational interests. At the conclusion of the course the student will submit three copies of his research project to the graduate office.

ENGLISH

ENG 705 INTRODUCTION TO OLD ENGLISH 3 cr.
This course has been designed to enable the student to read the literature in Old English and to understand and learn the grammar and vocabulary of Old English to facilitate that reading. The course (1) provides an introduction to the phonology and morphology; (2) utilizes phonetics by means of related texts (e.g., Clark); (3) introduces the grammar; (4) introduces the literature in the original; and (5) provides an introduction to the bibliography of Old English language and literature.

ENG 706 MIDDLE ENGLISH 3 cr.
This course is an introduction to a variety of Middle English literary texts and types, and to the principal Middle English dialects. Since the course satisfies part of the requirement for the study of the English language and is therefore not simply a course in literature, the texts are inspected very closely for matters of detail in Middle English vocabulary, phonology, morphology, and syntax; but some attention is paid to literary history.

ENG 707 LINGUISTICS 3 cr.
This course will use modern, standard, spoken, American English to illustrate and define topics in the general field of synchronic linguistics. The areas surveyed will include articulatory phonetics, phonemic analysis, patterns of intonation and stress, morphemics, inflectional categories, immediate-constituent theory, tagmemics, language typology, and linguistic universals. The topics discussed should provide a broad foundation for further study in terms of linguistic problems, terminology, proposed solutions, and useful results.

ENG 708 ADVANCED LINGUISTICS 3 cr.
This course provides a rapid overview of traditional grammatical theory from the anomaly-analogy disputes of the Hellenistic Greeks to the Latin-oriented systems of fairly recent scholars. Then it will survey the emergence and advance of American structural linguistics as represented by its acclaimed proponents: Bloomfield, Fries, Trager, Smith, Francis, Hill, and Sledd. Finally, the analytic approach of Harris and the generative proposals of Chomsky will be discussed. The major emphasis in the course will be placed on the theory and practice of generative-transformational grammar.

ENG 710 HISTORY OF THE ENGLISH LANGUAGE 3 cr.
The purpose of this course is to give the graduate student of English a basic knowledge of modern linguistic procedures, necessarily structural. These procedures once mastered, the student applies them to English 700-1100; 1100-1500; 1500 to the present. The student is thus given a view of change in sounds, forms, syntax (grammar); the structural changes from 700 A.D. to the present. He is also introduced to the change in vocabulary and its meanings. The problem of a standard dialect, then and now is introduced; this is the element of dialect geography. Finally, from the beginning of the course to the end, the details of the use of the Latin alphabet to record English (theory and nature of spelling) is emphasized so that the student can actually read the evidence from earlier periods and understand the problems of the present. He is introduced to the major political-historical events which affected the growth and structure of British and American English.

- ENG 715 CHAUCER 3 cr.
This course will survey the works of Geoffrey Chaucer, from *The Book of the Duchess* through the *Canterbury Tales*, but most of the course will be devoted to *Troilus and Criseyde*. Some attention will be given to the phonology, morphology, and syntax of Chaucer's English, but principally the goal of the course will be literary understanding.
- ENG 716 ENGLISH DRAMA BEFORE SHAKESPEARE 3 cr.
This course is designed to introduce the student to the drama of the Middle Ages and Early Renaissance in England and at the same time to acquaint him with its international character. The liturgical drama precedes the scriptural cycles; then the morality play and interlude follow. Evolution and continuity of development are carefully shown so that the student may see the vital nature of the early drama.
- ENG 717 SHAKESPEARE 3 cr.
This course will provide for the careful examination of three or four of Shakespeare's plays and will include the careful consideration of recent trends in Shakespeare criticism.
- ENG 718 SIXTEENTH CENTURY NON-DRAMATIC LITERATURE 3 cr.
A study of the literary and intellectual traditions in non-dramatic English Literature from 1485–1603. Among the authors and works studied will be: Skelton, More, Ascham, Elyot, Wyatt, Surrey, Tottel's *Miscellany*, *Mirror for Magistrates*, Foxe, Hooker, the Courtly Makers, Sidney, Gascoigne, Nashe, Lyly, Lodge, the Sonneteers, Spenser.
- ENG 725 NON-DRAMATIC ENGLISH LITERATURE 1600–1660 3 cr.
The primary purpose of Seventeenth-Century English Literature is to provide the student with a representative survey of the non-dramatic literature of the century. The course is intended to provide representative works not merely of literary art, but of the full written expression of the political, religious, and scientific thought of the century. The course is also intended to provide for the student literary representations contributing to the development of the prose and poetry of the century.
- ENG 726 JACOBEAN AND CAROLINE DRAMA 3 cr.
The methods and types of the drama (exclusive of Shakespeare) from 1590 to the closing of the theaters in 1642. Plays will be selected from among those by the following authors: Lyly, Jonson, Dekker, Beaumont and Fletcher, Massinger, Chapman, Webster, Middleton, Ford, Marston, Shirley, Tourneur.
- ENG 727 MILTON 3 cr.
This course is designed to be a comprehensive study of John Milton's poetry and to survey the major prose works. Special emphasis will be directed to the major poems, *Paradise Lost*, *Paradise Regained*, and *Samson Agonistes*, and to the major criticism relevant to these works.
- ENG 735 ENGLISH LITERATURE 1660–1700 3 cr.
The course will stress the cultural attitudes and developments that continue into the eighteenth century: the doctrine of correctness, stress upon manners and wit, rejection of emotion in both art and religion, and the dominance of rationalism. The works of major figures (Dryden, Milton, Bunyan, Locke, and the playwrights) as well as minor figures (Butler, Pepys, Marvell, Shadwell, and Behn) will be examined.
- ENG 736 ENGLISH LITERATURE 1700–1744 3 cr.
The course will undertake to make understandable some of the appellations usually applied to the eighteenth century, such as "The Age of Reason" and "The Century of

Enlightenment." In the works of Pope, Swift, Gay, and Fielding, the student will see the triumph of reason, while Addison and Steele, Shaftesbury, and the followers of Locke reveal a trend toward greater liberality in political and religious thought. Finally, Defoe, Farquhar, Steele, Lillo, and Young will illustrate the new emphasis on morality and sentimentalism.

ENG 737 ENGLISH LITERATURE 1744–1798 3 cr.
The rise of the novel as an art form, the prominence of Johnson and his group, and the eventual domination of sentiment and sensibility all require attention. Some of the authors to be examined are: Thomson, Gray, Collins, Cowper, Burns, Chatterton, Smart, Crabbe, Goldsmith, Sheridan, the Warton, Burke, Gibbon, and, of course, Boswell.

ENG 738 EIGHTEENTH CENTURY ENGLISH NOVEL 3 cr.
The evolution of the novel in eighteenth century England will be traced through the examination of representative works of Defoe, Richardson, Fielding, Sterne, Smollett, the Gothic novelists, Lewis, Austen, and others.

ENG 745 ROMANTIC POETRY 3 cr.
An intensive study of the work of the major poets of the Romantic Period — this course will attempt to acquaint the student with both the poetry itself and the critical reaction to that poetry over the last century. Introductory lectures will introduce the critical milieu in which the Romantic poets were spawned, and discuss their eighteenth-century forerunners, the Pre-Romantics. The discussion of each of the major poets will focus on the poetry as a representation of those characteristics which are traditionally associated with Romanticism, as well as those qualities peculiar to that specific poet under discussion. Finally, an attempt will be made to evaluate the effect of these poets on the critical attitudes of the nineteenth and twentieth centuries, through an examination of the work of such men as J. S. Mill, Matthew Arnold, Irving Babbitt, Paul Elmer More, T. S. Eliot and others.

ENG 746 VICTORIAN POETRY 3 cr.
This course will attempt an intensive study of the poetry of the Victorian period. Emphasis will be placed on such major figures as Tennyson, Browning, Arnold, Rossetti, Morris, Swinburne, Hopkins, Houseman, and Hardy. The literary contributions of each of these poets will be evaluated through selected readings and against the background of their own lives and the times in which they lived. Discussion will focus on the attempt of each of the poets to deal with those problems particularly relevant to the nineteenth century — the Romantic inheritance, the role of the poet, the function of art — in order to isolate common characteristics which might be helpful in evolving a definition of 'Victorianism.' The literary and aesthetic criticism of the period — notably the prose of Arnold, Ruskin, Swinburne, and Pater — will be used to provide a detailed analysis of each of the particular problems. Significant work by minor poets will be considered insofar as it sheds light on these problems or on the work of any of the major figures.

ENG 747 NINETEENTH CENTURY NON-FICTION PROSE 3 cr.
This course will survey the major prose writers of the nineteenth century and emphasize the intellectual and social backgrounds of their ideas as well as the rhetorical analysis of representative samples of their work. Authors to be studied will include: Macaulay, Carlyle, Newman, Mill, Ruskin, Arnold, Pater, Huxley, and Butler.

ENG 748 NINETEENTH CENTURY ENGLISH NOVEL 3 cr.
The Victorian novel will be examined both in its relation to the general developments of the novel as a genre and in its viability as a vehicle for the expression of those

themes and ideas peculiarly relevant to the nineteenth century. Individuals, novels, and novelists will be discussed in terms of their place in the general tradition of the novel — their dependence on the work of the 18th century novelists, their attempts at experimentation and innovation, their foreshadowing of the interests and techniques of the modern novelists. Secondly, the novels will be discussed in terms of their growing relevance as a commentary on the problems of the times, and as such, and important manifestation of the great aesthetic problem of the 19th century, the relationship between art and society.

ENG 755 COLONIAL AMERICAN LITERATURE 3 cr.
Colonial Literature — an intensive investigation of the developing literature of the American Colonies 1607–1789. Emphasis on the intellectual, political, religious, social and economic forces shaping that literature. Primary readings for the course include large portions of the works of the Mathers, Taylor, Edwards, Franklin, Jefferson, and the Federalists; equal emphasis is placed on works of intellectual history that deal with the period.

ENG 756 AMERICAN RENAISSANCE 3 cr.
The American Renaissance — an investigation of American Transcendentalism and the Literature related to it, with emphasis on the development of a definition of American Romanticism. Careful study of the works of Emerson, Thoreau, Hawthorne, Melville, and Whitman; Cooper and Poe at the instructor's option.

ENG 757 THE RISE OF REALISM 3 cr.
A critical analysis of literary trends in America from the time of the Civil War to the post-World War I era, with attention to a reasonable representation of the works of both major and secondary writers.

ENG 758 MODERN AMERICAN POETRY 3 cr.
A course designed to study the nature of poetry and to place within this context an examination of the trends of the twentieth century. Special emphasis put on Pound, Frost, Eliot, Stevens, Jeffers, and Cummings.

ENG 760 CULTURAL BACKGROUNDS OF AMERICAN LITERATURE 3 cr.
An examination of movements and patterns of thought in American intellectual history that have been influential on the mind and art of the American literary artist, with emphasis on developments particularly germane to the emergence of periods and styles on the American literary scene. The impact of such developments will be studied by treating representative works of literature that bear the imprint of their intellectual-social milieu. Studies treating such subjects as the influence on American Literature of Freud, the teachings of Marx and developments in science, the novel of protest, and the political novel will be examined.

ENG 765 MODERN AMERICAN NOVEL 3 cr.
The course will cover the period from the end of WWI to the present, but with emphasis on the fiction of the 20's, 30's, and 40's. Individual representative works will be selected from among such authors as: Anderson, Hemingway, Lewis, Dos Passos, Cather, Fitzgerald, Faulkner, Steinbeck, Updike, O'Connor, Styron, Malamud, and Bellow.

ENG 766 MODERN BRITISH NOVEL 3 cr.
Experiments both in style and in subject matter abound in the 20th century British novel. Although novelists expand the language beyond all prior limits as no age has done since the 16th and 17th centuries, they also explore new realms within the conscious and unconscious worlds they inhabit. The course will trace these

experiments through the works of such artists as Joyce, Lawrence, Conrad, Ford, Woolf, Chesterton, Beckett, Cary, Bowen, Orwell, Greene, Durrell, Lowry, Golding, and Fowles.

ENG 767 HISTORY OF LITERARY CRITICISM 3 cr.

This course will be both historical and practical in its concerns. It will be necessary to review the large critical trends important to English and American Literature; and it will be necessary to provide students with an opportunity for exercises in practical criticism.

ENG 768 MODERN BRITISH POETRY 3 cr.

This course will consider the struggle of the British poet to hold his place in a world where "things," including his empire, "fall apart," where twice the "blood-dimmed tide is loosed," where "innocence" on both personal and national levels "is drowned." Among those poets studied will be: Yeats, Lawrence, Graves, Owen, Auden, Betjeman, Thomas, Larkin, Kinsella, Gunn, and Hughes.

ENG 770 MODERN DRAMA 3 cr.

The 20th century is an age of unprecedented innovation and technical development in the theater. It is also an age in which two basic themes, alienation of the individual and illusion vs. reality, hold the stage above all others. These innovations and themes will be found and examined in the works of such playwrights as Strindberg, Jarry, Ibsen, Maeterlinck, Gorki, Shaw, Yeats, Pirandello, Lorca, O'Neill, Brecht, Odets, Williams, Beckett, Genet, Ionesco, Pinter, Albee, Bolt, and Weiss.

ENG 790 SEMINAR IN LITERARY CRITICISM 3 cr.

The study in detail of a particular critical theory, its history and development, and of those critics who in practice best exemplify this tradition. Opportunity will be given the student to show his ability to examine literary texts in the light of his study of the theory.

ENG 795 SEMINAR IN ENGLISH LITERATURE 3 cr.

This seminar course has been designed to have the student pursue in depth a major figure, movement, or genre in English literature (such as the life and writings of W. B. Yeats). Following the intent of a seminar course, the student must confer with his instructor three or four times during the term. Emphasis is on a highly specific area of independent research. As such, the course is determined by research and writing performance.

ENG 796 SEMINAR IN AMERICAN LITERATURE 3 cr.

Attention centers on the works of major American authors. In recent years the works of Hawthorne, Melville, and Twain have been carefully examined in individual seminars.

ENG 797 SEMINAR IN COMMUNICATION 3 cr.

The Seminar in Communication will deal with subject matter not normally addressed in traditional literature or linguistics courses, including such possible topics as: Literature into Film, The Teaching of Writing, and The Oral Tradition in American Literature. The course will be offered on an irregular basis, and seminar topics will be published in advance.

ENG 799 INDEPENDENT STUDIES IN ENGLISH 1-4 cr.

The course presents an opportunity for the student to do independent reading or research in English. The student will be advised by a member of the English Department faculty. The nature and scope of the study and the assigned credit hours will be determined on an individual basis.

- ENG 800 METHODS OF RESEARCH IN ENGLISH 3 cr.**
 Basically, this course is an introduction to the graduate study of English and to methods of bibliographical research (in the sense of acquaintance with the basic reference sources of literary history). The aim of the course is not merely to acquaint the student with the standard reference books in the field but to give him a brief overview of some of the principal methods and preoccupations of the literary critic and scholar and the teacher of English.
- ENG 802 RESEARCH PRACTICUM/RESEARCH PROJECT 3 cr.**
 The purpose of the course is to help the student relate the ideas and content of the over-all M.Ed. program to his role as a teacher and to offer guidance in completing a project relevant to the student's specific pedagogical interests. The course will be conducted in the fashion of a seminar.

GEOGRAPHY

- GEO 700 PHILOSOPHY OF GEOGRAPHY 3 cr.**
 Classical and contemporary development of the principal concepts which define geography as an academic discipline.
- GEO 711 POPULATION ANALYSIS 3 cr.**
 An analysis of demographic processes, current situations, and consequences of population trends as they relate to urban and rural distributions.
- GEO 712 GEOGRAPHY AND URBAN POLITICS 3 cr.**
 This course will emphasize the role of the political process in the development of the American urban environment. Stressing, locational influences and political behavior as it relates to housing, neighborhoods, transportation, poverty, voting, and the law.
- GEO 713 URBAN GEOGRAPHY 3 cr.**
 An investigation and analysis of cities in selected regions as to their location, distribution, classification, function, growth, types and patterns of land use. Geography in urban planning will also be included.
- GEO 731 GEOGRAPHY OF RESOURCES 3 cr.**
 A geographic analysis of the factors involved in the production, distribution and consumption of resources. Local and world patterns of mineral fuels, metals, chemicals and construction materials are emphasized.
- GEO 732 INDUSTRIAL GEOGRAPHY 3 cr.**
 A geographic analysis of the factors involved in the production and distribution of economic goods. Local and world patterns of industry and their spatial integration are emphasized.
- GEO 733 LAND USE ANALYSIS 3 cr.**
 An analysis of the structure of urban and rural areas with particular emphasis on the description, patterns and trends in land use. Methods for defining, representing and evaluating land use are developed. Explanations of land use patterns through models is incorporated.
- GEO 734 SITE SELECTION 3 cr.**
 The effects of physical features and spatial economic organization upon the selection of locations for industrial and commercial activities. Attention is given both to regional position and to local site.

HISTORY

- HIS 700 THE COLONIAL ERA 3 cr.**
Topics concerning the exploration and settlement of America, and the social, political, economic and intellectual life of the American colonies before the Revolution.
- HIS 705 THE REVOLUTION AND EARLY NATIONAL PERIOD 3 cr.**
Topics in the social, political, economic and intellectual life of the American people to 1820.
- HIS 706 THE MIDDLE PERIOD IN U. S. HISTORY, 1820-60 3 cr.**
The year of Jacksonian nationalism and two-party politics; internal economic developments, territorial expansion and the rise of sectionalism, slavery and the emergence of the Republican party; the sectional controversies of the 1850's and the coming of the Civil War.
- HIS 715 THE CIVIL WAR AND RECONSTRUCTION 3 cr.**
Causes of the Civil War; the political crisis of 1860-1861; military, political, economic and diplomatic analysis of the war; presidential and congressional reconstruction; social, political and economic developments; the erosion of reconstruction and the Compromise of 1877; long-range results of the Civil War and Reconstruction era.
- HIS 716 THE ERA OF REFORM, 1873 UNTIL WORLD WAR I 3 cr.**
A detailed examination of certain key groups and events which influenced America's response to a rapidly industrializing and urbanizing society. The particular focus will be upon the ideology and activities of such groups as the populists, mugwumps, utopian reformers, the new clergy and the progressives.
- HIS 717 THE 1930's IN THE UNITED STATES 3 cr.**
A comprehensive examination of the cultural, constitutional, political, diplomatic, literary and economic developments of the 1930's which have made that decade a watershed in American history. Special attention will focus on the New Deal, the political leadership of Franklin D. Roosevelt, the role of the United States Supreme Court, social and cultural aspects of the times, such as music and the "radical" literature of the period, the end of isolation, the coming of World War II, and the varied interpretations that historians have drawn from the thirties in America.
- HIS 718 THE UNITED STATES SINCE WORLD WAR II 3 cr.**
A consideration of the major events, problems and trends in the American experience since the Second World War; domestic and foreign problems will be given equal treatment. Heavy emphasis may be placed on the revolutions in civil rights, space and learning, while special attention might focus on the importance of the United States as a major world power.
- HIS 720 STUDIES IN AMERICAN CONSTITUTIONAL HISTORY 3 cr.**
Topics in the formation of the Constitution and its development through amendment, interpretation and practice.
- HIS 725 STUDIES OF THE AFRO-AMERICAN IN AMERICAN HISTORY 3 cr.**
Selected topics concerning the Afro-American from the origins of the slave trade through emancipation, "Jim-Crowism," the urban experience, to the Black Revolution of the 1960's. Special emphasis might be given to economic, social or cultural aspects of the black experience in any chronological era.

- HIS 726 STUDIES IN AMERICAN ECONOMIC HISTORY 3 cr.**
Selected topics concerned with the evolution of American economic institutions. Emphasis will be given to major sources of economic history and specialized research techniques required in this field.
- HIS 727 STUDIES IN THE SOCIAL AND INTELLECTUAL 3 cr.**
HISTORY OF THE UNITED STATES
Selected aspects of the social and intellectual thought and their contributions to American civilization will be investigated. Emphasis will be placed on the early evolution of American institutions and on the recent impact of the city on American social and intellectual thought and institutions.
- HIS 728 STUDIES IN AMERICAN LABOR HISTORY 3 cr.**
A detailed examination of particular issues in the history of the American labor movement. Special emphasis will be placed on the emergence of industrial unionism and its relation to American politics.
- HIS 735 STUDIES IN AMERICAN DIPLOMATIC HISTORY 3 cr.**
A program of major themes in the history of American foreign relations, a single topic to be selected for class investigation at the beginning of the semester. Primary and secondary sources bearing on the chosen subject and of general prominence in the diplomatic field are studied by the class under the guidance of the instructor.
- HIS 736 STUDIES IN AMERICAN URBAN HISTORY 3 cr.**
Selected topics on the historical development of urbanism in American life, such as urban demography, ethnic group acculturation, urban politics, the impact of industrialization on urban development and the effect of the city on American thought and social development in a particular period of the nation's history.
- HIS 737 STUDIES IN PENNSYLVANIA HISTORY 3 cr.**
Selected topics in the transition from the "Holy Experiment" to the Keystone State. Emphasis may be placed on the frontier role of Western Pennsylvania, the racial origins, compositions and movements of the population, or the unique economic, political and social development of Western Pennsylvania.
- HIS 755 STUDIES IN THE HISTORY OF ENGLAND 3 cr.**
Selected topics concerned with the types of, and changes in English social, legal and governmental institutions in relation to political and economic development from the Norman conquest to the present era.
- HIS 760 STUDIES IN THE HISTORY OF CONTEMPORARY 3 cr.**
EUROPE
Major themes concerned with the evolution of Twentieth Century Europe; problems of stability and change within the European state system, Europe as part of the global system of nation-states; the growth of economic and political community and the countermovements of revitalized Gaullist and Soviet Bloc nationalism.
- HIS 778 RUSSIA THE ROAD TO REVOLUTION 3 cr.**
Nineteenth century Russia – a prelude to revolution. A study of the historical, political, economic and social trends and forces which contributed to the outbreak of the Russian Revolution of 1917.
- HIS 779 INDEPENDENT STUDIES IN HISTORY 1-2 cr.**
An opportunity for the student to do independent reading or research in history; the student will be advised by a member of the history department; the nature and scope of the study and the assigned credit hours will be decided on an individual basis.

IAE 706 CURRICULUM DEVELOPMENT IN INDUSTRIAL ARTS 2 cr.

An investigation is made into the significant aspects of our culture which affect the curriculum. Key concepts in curriculum study are related to practice in establishing a curriculum consistent with accepted educational objectives and philosophies. The study of the variety of industrial arts programs in the nation, as well as, the state plan and the development of behavioral objects for a program constitutes a major part of the course.

IAE 707 HISTORY AND PHILOSOPHY OF INDUSTRIAL ARTS EDUCATION 2 cr.

A study of the evolution and development of industrial education from primitive times to the present is pursued. The establishment of the early European systems of the Renaissance of the development of sloyd, manual training, and eventually industrial arts in this country, represent the major divisions of the course. The educational philosophies and methods of such leaders as Comenius, Locke, Rousseau, Pestalozzi, Froebel, Dewey, and Woodward are contrasted to current philosophies, methods, and objectives of industrial arts education.

IAE 708 PLANNING THE INDUSTRIAL ARTS LABORATORY 2 cr.

Design experience is provided in laboratory planning in which the most recent developments in building materials and fixtures are used. Principles of school plant design are utilized to establish a relationship between the industrial arts laboratory and the total school plant. Consideration is given to the problem of statutory demands and limitations, architectural techniques, acoustics, machine utilization, area planning, storage, and planning methods.

IAE 709 SPECIAL PROBLEM IN I. A. 1-2 cr.

Original investigations in the field of industrial arts. The nature of the problem will determine the class and laboratory hours. The course is expected to provide evidence of the ability of the student to make independent studies into the materials, methods, and principles of industrial arts as well as the ability of the student to report his findings effectively.

IAE 710 RESEARCH IN TECHNICAL DRAWING PROBLEMS 3 cr.

Research is conducted to determine current and proposed technical advances in industrial drafting methods and techniques and their possible assimilation into secondary school and college drafting courses. Pilot courses are developed utilizing new concepts and techniques developed in industry.

IAE 711 REPRESENTATIONAL DRAWING I 2 cr.

Refinement in the technique of rendering the essential appearance of an actual or imaginary product is stressed. Freehand sketching in a variety of media, including pastels, pen and ink, and wash drawing is explored.

IAE 712 REPRESENTATIONAL DRAWING II 2 cr.

Emphasis is placed on experiencing more advanced graphic media in the technique of freehand sketching. Extensive experience is provided in air brush rendering. Experimentation in the use of graphic media is encouraged in order to achieve unusual but effective visual effects in representational drawing.

IAE 715 SUPERVISION OF INDUSTRIAL ARTS EDUCATION 2 cr.

This course is designed to develop an awareness of the duties, techniques and methods of supervision. The following areas will be studied: educational structure and personnel, principles of supervision, staff improvement of instruction, school and community relations and the role of the supervisor. This course is a prerequisite for those who plan to complete the Supervision Program.

IAR 716 PROBLEMS IN ARCHITECTURAL DESIGN 3 cr.
Emphasis is placed on new concepts and techniques in architectural design and drafting. Current developments in building materials and fabrication methods are applied to residence, commercial and industrial structures. The organic approach to architectural design is utilized to evolve functional designs in the various types of structures.

IAR 717 PROBLEMS IN INDUSTRIAL ARTS DESIGN 2 cr.
A problem solving approach to design is emphasized. Students completely plan and develop products that are original in conception and aesthetic in appearance. The individual is encouraged to work experimentally and independently. Final products are crystallized with the aid of representational drawings, working drawings, and detailed plans.

IAR 718 ADVANCED CERAMICS 2 cr.
Advanced techniques in the art and craft of ceramics is provided in this course. Experiences in three and four piece mold making, glaze experimentation, and advanced work on the potter's wheel are included. The technology of ceramics is presented through the process of individual research on some phase of the ceramic industry. A three-credit undergraduate course in ceramics is a prerequisite to this course. The prerequisite IAR 348, may be waived by successful performance on an examination.

IAR 720 ADVANCED CRAFTS 2 cr.
This course develops a considerable depth and breadth of technique and overall design ability for those who wish to pursue any major craft media. Creative and aesthetic design coupled with technical refinement is stressed. Research in a particular craft medium accompanies the laboratory experience. The undergraduate course in crafts, IAR 350 is a prerequisite to this course.

IAR 730 RESEARCH IN THE PROBLEMS OF WOODWORKING 3 cr.
Research experiences are provided in current industrial developments in the woodworking industries. Emphasis is placed upon research techniques and finding in such areas as wood finishing, production, methods, wood chemistry, machinery maintenance, and safety programming. Special problems relating to wood storage, requisitioning, inventories and budgeting procedures are also presented.

IAR 735 STUDIES IN INDUSTRIAL PATTERNMAKING TECHNIQUES 3 cr.
Modern industrial patternmaking practices are explored. Practice is provided in the application of various materials such as wood, wax, ceramics, and metals to pattern fabrication. Patterns applicable to secondary school industrial arts programs are designed and constructed.

IAR 740 STUDIES IN METAL TECHNOLOGY 3 cr.
Provides for study of industrial metalworking techniques and processes through research and field trips. Basic study into physical metal testing and metallurgy designed for introduction into public school programs.

IAR 745 RESEARCH IN THE PROBLEMS OF METAL MACHINING 3 cr.
Special problems relating to secondary school metal machining programs such as product design, operational sequences, personnel organization, instructional sequences, special jigs and fixtures, and new industrial machining methods are studied. Individual research on a selected metal machining problem is required.

operations directly related to the working of plastics, the student will design, construct and use various tools, forms and molds. Laboratory experimentation will be encouraged while curriculum development for local school use will be required.

IAR 785 SEMINAR IN NEW ELECTRICAL PRACTICES 2 cr.
The latest commercial electrical equipment and technical methods are presented by local power companies, manufacturers, and other agencies related to the electrical industry. This cooperative venture is designed to bring the student abreast of current practices, trends, and research in the electricity-electronics area.

IAR 786 INDUSTRIAL ARTS AND INDUSTRIAL PRACTICES WORKSHOPS 2 cr.
This course is designed to keep students abreast with current educational-industrial practices in the areas of Industrial Materials, Graphic Communications, and Power. Workshops and/or field trips are provided in these areas to provide various teaching-learning experiences according to the needs of students.

IAR 787 RESEARCH SEMINAR IN INDUSTRIAL ARTS EDUCATION 2 cr.
An investigation and discussion of problems related to current issues, evaluations and research in industrial arts education. Specific topics will be selected by the class or the individual and the research design will be critiqued. Each student will be required to prepare a written review of research in an area mutually agreeable to the student and the instructor.

This course is required for the 36-hour program. Prerequisites: EDP 600 Statistical Methods and RES 800 Methods of Research.

INDUSTRIAL ARTS SUPERVISION

IAS 780 DEVELOPING TEACHING TECHNIQUES AND CURRICULUM MATERIALS 2 cr.
The writing and development of new materials to be utilized in the improvement of industrial arts programs. The structuring and demonstration of modern teaching techniques for industrial arts. The potential supervisor will need to take into consideration the many new teaching methods and techniques. Experiences will be provided so that these materials can be utilized in actual instructional situations. Prerequisite: IA 706.

IAS 785 SEMINAR IN INDUSTRIAL ARTS SUPERVISION 2 cr.
Directed intensive study, investigation, or research in selected problems and new techniques related to supervision of Industrial Arts. Reports and other presentations by members will be subject to constructive criticism by the seminar group. (Prerequisite: 6 courses in Supervision Courses and 8 credits in Industrial Arts professional courses.)

IAS 791 PRACTICUM I – INDUSTRIAL ARTS SUPERVISION 2 cr.
Supervised school experiences that will provide the prospective supervisor with the opportunity to observe such duties, learn about school organization and procedures essential for successful supervision. The prospective supervisor will perform functions in association with teacher interviewing, budget planning, teacher and student scheduling, evaluation of industrial arts facilities and programs. (Practicum I may be scheduled when initial enrollment is made in the supervisory program.)

IAS 792 PRACTICUM II – INDUSTRIAL ARTS SUPERVISION 2 cr.
A continuation of supervisory experiences from Practicum I with more emphasis placed on the supervisory candidate playing the role of an industrial arts supervisor. The candidate will need to demonstrate supervisory competencies through the development, planning, and conducting of an in-service program for industrial arts teachers; public relation activities in terms of news releases and industrial relations; and to participate in inner-city or rural school experiences. (Prerequisite: Admission to Candidacy for the Supervisory Certificate and IAS 791.)

MATHEMATICS

MAT 701, 702 MATH. ANALYSIS I AND II 2 cr. each
These courses develop those ideas which are considered foundations to analysis. These ideas will include limits, continuity, functions of several variables, the calculus of curves and surfaces, and infinite series.

MAT 703, 704 DIFFERENTIAL EQUATIONS I AND II 2 cr. each
These courses involve mainly the solution of differential equations of first and second orders with emphasis upon transforms. Applications of these types of equations will be considered.

MAT 705 PARTIAL DIFFERENTIAL EQUATIONS 3 cr.
This course deals primarily with solution of differential equation of higher order and degree by power series, solution of partial differential equations, more discussion on Laplace Transforms and Fourier Series.

MAT 706 TOPOLOGY 3 cr.
This course shall include point-set theory, properties of metric spaces, properties of topological spaces and properties of topological transformations.

MAT 707 TOPICS IN APPLIED ANALYSIS I 3 cr.
Introduction to linear spaces; distributions in one dimension; operators in Hilbert space and spectrum of operators; Green's functions; orthogonal expansions and regular boundary value problems. Linear integral equations with Hilbert-Schmidt kernels; Eigenfunction expansions; Rayleigh-Ritz Procedure; singular boundary value problems.

MAT 711, 712 FUNCTIONS OF A REAL VARIABLE I AND II 3 cr. each
These courses will provide a development of modern analysis. The topics to be covered will be theory of sets, the real number system, limits, continuity, convergence and derivatives of a function, and a comparative study of integration by Riemann, Lebbsgue and Stieltjes.

MAT 713, 714 FUNCTIONS OF A COMPLEX VARIABLE I AND II 3 cr. each
These courses include a study of the properties and theory of the differential and integral calculus of elementary and analytic functions. Topics such as Cauchy-Goursat Theorem, Power Series, Residues and Poles, Conformal Mapping, Schwarz-Christoffel Transformation, and Analytic Continuation.

MAT 721, 722 ABSTRACT ALGEBRA I AND II 2, 3 cr.
The material covered in these courses will be a continuation and a more intensive study of the material covered in the undergraduate course such as theory of groups, rings, and fields.

- MAT 723, 724 LINEAR ALGEBRA I AND II** 2, 3 cr.
 These courses are a continuation and a more intensive study of the undergraduate course, including topics of vector spaces and transformations polynomials, determinants, invariant direct-sum decompositions, rational and Jordan Forms, Inner product spaces and bilinear forms.
- MAT 725 THEORY OF NUMBERS** 2 cr.
 A presentation of topics necessary to gain understanding of the theory of numbers. The topics included are: properties of integers, divisibility, Euclidean Algorithm, prime numbers, congruences, residues of powers, quadratic residues, and Diophantine problems.
- MAT 727 THEORY OF MATRICES** 2 cr.
 Topics included are: matrix algebra, rank and equivalence, linear dependence, vector spaces and transformations, unitary and orthogonal transformations, and characteristic equation of a matrix.
- MAT 728 GROUP THEORY** 3 cr.
 Review of the elements of group properties, fundamental theorems of general groups, abelian groups, prime-power groups, permutation groups, groups of linear transformations.
- MAT 730 ADVANCED TOPICS IN ALGEBRA** 3 cr.
 Introduction to topics such as commutativity and non-commutativity of certain algebraic structures, extensions of algebraic structures and related theorems, Homological Algebra.
- MAT 736 ALGEBRAIC TOPOLOGY** 3 cr.
 This course will consider topology from an algebraic point of view. An investigation of properties that are algebraic topological invariants, various theories such as homotopy, homology and cohomology will be studied.
- MAT 741 FOUNDATIONS OF GEOMETRY I** 2 cr.
 This course is a Birkhoff axiomatic treatment of Euclidean Geometry.
- MAT 742 FOUNDATIONS OF GEOMETRY II** 2 cr.
 Two approaches to geometry will be considered: studying a body of theorems deduced from a set of axioms, and studying Invariant theory of a Transformation Group.
- MAT 743, 744 PROJECTIVE GEOMETRY I AND II** 3 cr. each
 A synthetic and analytic treatment of projective geometry including topics: duality, projection, section, perspectivity, projectivity, harmonic constructions, fundamental theorem of projective geometry, Theorems of Desargue, Pappas, Pascal and Brianchon, conic sections, projective coordinate systems of one, two and three dimensions, and transformations.
- MAT 745 VECTOR GEOMETRY** 2 cr.
 This course is primarily a vector space approach to geometry. Topics are: vector algebra, vector spaces, length, angle, area, volume, and matrices of linear and affine transformations.
- MAT 746 DIFFERENTIAL GEOMETRY I** 3 cr.
 This course includes Differentiable Properties and their invariant of different

MAT 777 STATISTICAL INFERENCE 3 cr.
Decision Theory; properties of estimators; confidence intervals and tests of hypothesis.

MAT 780 ADVANCED TOPICS IN COMPUTER SCIENCE I 3 cr.
Introduction to assembly language, numerical integration, curve-fitting, interpolation, differentiation, numerical solution of ordinary differential equations, monte-carlo techniques, introduction to operations-research, linear-programming, simulation.

MENTALLY AND/OR PHYSICALLY HANDICAPPED

The courses for the new program for the Mentally and/or Physically Handicapped will be available in the course description supplement which will soon be available.

POLITICAL SCIENCE

POS 705 HISTORY OF POLITICAL THEORY 3 cr.
A study of early and modern political theories; their development and application as controlling factors in the growth of western civilization and American democracy.

POS 708 POLITICS OF AFRICAN NATIONALISM 3 cr.
A comparative analysis of the government and politics of the independent nations of Africa; their international relations and foreign policies, traditional and contemporary forms of political behavior, and the impact of foreign ideologies.

POS 710 COMPARATIVE COMMUNIST SYSTEMS IN EASTERN EUROPE 3 cr.
A comparative study of Eastern European states under communist party domination; internal politics; intra-bloc relations; integrative and disintegrative tendencies.

POS 716 PROBLEMS OF THE SOVIET POLITICAL SYSTEM 3 cr.
The development of the Communist Party and the Soviet regime are thoroughly examined with emphasis on the functions, social composition and internal relations of the Party as well as the relations between the Party and other Soviet power structures.

POS 717 NATIONALITY PROBLEMS IN THE SOVIET UNION AND EASTERN EUROPE 3 cr.
An analysis of political and cultural problems of different nationalities in Eastern Europe and the Soviet Union.

POS 718 PROBLEMS IN INTERNATIONAL ORGANIZATION 3 cr.
Methods and materials of research in international organizations; special topics such as disarmament, security, procedural problems in the United Nations, economic and social problems, amendment and revision of the Charter.

POS 728 POLITICS OF UNDERDEVELOPED NATIONS 3 cr.
A comparative study of emerging political systems of their attempts to achieve modernity.

POS 730 COMPARATIVE GOVERNMENT 3 cr.
A comparative analysis of political systems their institutional structures.

POS 740	AMERICAN DEFENSE POLICY	3 cr.
An analysis of the forces influencing decision making in the quest for American security.		
POS 745	THE LEGISLATIVE PROCESS	3 cr.
An analysis of policy determination in the American legislative system.		
POS 746	AMERICAN CHIEF EXECUTIVES	3 cr.
The role of the Presidency in policy determination in both domestic and foreign affairs.		
POS 747	CIVIL LIBERTIES AND JUDICIAL PROCESS	3 cr.
The study of the Supreme Court as the principal guardian of libertarian principles.		
POS 748	PROBLEMS IN PUBLIC ADMINISTRATION	3 cr.
Selected studies in bureaucratic organization in both federal and state governments.		
POS 755	URBAN STUDIES	3 cr.
This course will focus on the formulation of policy in urban government as well as on administrative operations.		
POS 756	MODERN POLITICAL PARTIES	3 cr.
A comparative study of the aggregative function of political parties.		
POS 757	THE POLITICAL PROCESS	3 cr.
The study of interest articulation in the political system.		
POS 779	INDEPENDENT STUDIES IN POLITICAL SCIENCE	1-3 cr.
The student will have an opportunity to do independent study or research in political science. The student will be guided and advised by a member of the political science department. The nature of the research study and the assigned credit hours will be decided on an individual basis.		

READING

RSP 701	FUNDAMENTALS OF READING INSTRUCTION	2 cr.
This course is designed to provide the students with various instructional strategies that will enable them to make functional use of the basic reading skills.		
RSP 702	DIAGNOSIS AND TREATMENT OF READING PROBLEMS	3 cr.
This course will initiate the student to the causes of retardation in reading. It will explore the gap between the reading expectancy level and the actual reading level. Theories of causes of retardation will be offered, introduction to the sophisticated diagnostic techniques will be presented and techniques for prevention of further remedial cases will be given. (Pre: RSP 701)		
RSP 703	PRACTICUM – DIAGNOSTIC CASE STUDIES	3 cr.
Major emphasis is placed on presenting and discussing the techniques for determining reading difficulties of elementary school children. Practical use of testing devices and their application to individual diagnosis of reading difficulties are emphasized. The case study technique is utilized. (Pre: RSP 702)		

- RSP 704 PRACTICUM – REMEDIAL CASE STUDIES 3 cr.**
The student becomes familiar with the many materials and varied methods to be employed in the correction of reading problems through their applications with a retarded reader in a clinical situation. (Pre: RSP 703)
- RSP 730 PROBLEMS IN SECONDARY READING 2 cr.**
This course is designed to investigate the aspects of reading that influence learning at the secondary level. The sequential development of reading, reading programs, materials, reading disorders as well as other problems related to reading in the content fields are studied. Discussions of problems concerning the bright and gifted, the disadvantaged, the slow learner, and adolescent interests clarify the nature and scope of the reading process.
- RSP 731 SUPERVISION AND ADMINISTRATION OF A READING PROGRAM 2 cr.**
Common problems in the administration and supervision of reading programs are developed and analyzed. These problems tend to include (1) problems of method and materials, (2) problems of administrative grouping, (3) problems of evaluation, and (4) problems of personnel. Emphasis is also placed on the recruitment of qualified teachers; promotion policies; teaching schedules; administering tests and evaluating the results; safeguarding the pupil during the reading program; and reporting student progress.
- RSP 732 READING CURRICULUM AND INSTRUCTIONAL MATERIALS 2 cr.**
This course includes the introduction, selection and evaluation of Reading Curriculum and Instructional Materials K through 12. The developmental sequence of materials throughout the curriculum will be explored. The implementation of those materials will be discussed for strength, weaknesses, and limitations.
- RSP 733 READING INTERNSHIP 4 cr.**
The student is provided with an opportunity for supervised clinical and school experiences in a reading program. The student is provided with actual supervision experiences.
- RSP 739 INDEPENDENT STUDY 2 cr.**
The student will have an opportunity to do independent study or research in Reading. The student will be guided by a member of the Reading staff.
- RSU 680 IMPROVEMENT OF INSTRUCTION THROUGH SUPERVISION 2 cr.**
The purpose of this course is to prepare the holder of a permanent or a Level II Instructional Certificate for a supervisory capacity in specialized areas of the curriculum. It is a requirement for all working toward a supervisory certificate. It deals with theory, research, practice and evolving concepts which have practical implications for supervision in the school environment. It views supervision as only a part of a larger entity . . . the operation of the educational system. Supervision is defined in relationship as to how supervisory personnel assist professional and para-professional employees within a specific department to develop effective practices which will improve the quality of instruction and result in individual pupil progress . . . The course content will cover basic competencies in the areas of: Authority of the supervisor (development of duties and areas of responsibilities); Relationships with other supervisors; Specific techniques for cooperating with teachers; Developing sound research practices which yield valid data; Direct supervision of actual procedures, i.e., classroom visitations, observations and

evaluations; Instruments of evaluation; Evaluation of new materials and programs; In-service programs; Conference techniques; Departmental relationships, i.e., meetings, selecting department heads, selection and assignment of personnel, developing goals and interpreting needs to achieve goals, recognizing inter-departmental conflict; Role playing and simulation; contacts with other facets of the school and community and establishing learning outcomes.

RSU 685 GROUP DYNAMICS 2 cr.

The course is designed to bring together the recent research on teacher behavior with the theories and research of social psychology and group dynamics. It aims to give the student some understanding of group processes and some personal experience helpful in developing a repertoire of ideas and behaviors that will be pertinent in supervision and in the classroom.

SCHOOL PSYCHOLOGY

PSY 701 PERSONALITY THEORY 2 cr.

A course designed to provide the student with an understanding of the development of personality from various theoretical points of view. (The course will draw comparisons between various theories. It will contrast the dynamic approach to personality with the static approaches). The role of personality, as it affects behavior of children, adolescents, and adults will be explored. This course is seen as a fundamental course in Psychology which may become the basis for further development of the student in applied courses and to assist the student perform his function as a consultant.

PSY 702 PSYCHOPATHOLOGY OF CHILDHOOD 2 cr.

A comprehensive study of behavior disorders of children and their clinical manifestations. Various concepts of "normality" and "abnormality" will be used to demonstrate to the student the approaches available for determining behavioral disorders. Attention will be given to understanding and identifying a variety of emotional and social disturbances in children. The student will become acquainted with the implications of such disorders for the schools and for methods of reeducation and treatment.

This course is designed to assist the student in identifying problems of children and preparing them for making decisions about the proper method of handling such problems in the school or by referral outside the schools.

PSY 705 SEMINAR IN ADVANCED GENERAL PSYCHOLOGY 2 cr.

This course is designed to provide a general background in the Psychology of perception, motivation, sensation, physiological psychology, theories of numbers and measurement and an overall view of psychological concepts and theories at an advanced level. It will assist in the development of the knowledge and understanding of the field of Psychology to prepare the student to perform as a consultant to school officials, teachers, and others on the varied aspects of Psychology.

PSY 721 ADVANCED TESTS AND MEASUREMENTS 2 cr.

This course is designed to provide the student with an understanding of the use of tests for diagnostic studies of children and adolescents. It will explore the way in which tests are constructed, the questions of validity, reliability, objectivity, standardized conditions, test administration requirements, normative data, limitations of tests, and the uses to which testing may ethically be put. The course will provide a survey of some representative tests of achievement, aptitude, intelligence and interests. In this survey, the student will be assisted in learning to evaluate the various tests in terms of their usefulness in typical testing situations.

- PSY 722 INDIVIDUAL PSYCHOLOGICAL EVALUATION I (BINET AND INFANT SCALES) 2 cr.**
Emphasizes theory and competence in the administration, scoring, and interpretation of the Revised Stanford-Binet Scales. Practical experiences in the administration and clinical interpretation of the tests with school age children will be provided. Some familiarity with other infant and child measures intelligence such as the Cattell and Merrill-Palmer Scales included. Psychological Report Writing.
- PSY 723 INDIVIDUAL PSYCHOLOGICAL EVALUATION II (WECHSLER SCALES) 2 cr.**
Emphasizes theory and competence in the administration, scoring, and interpretation of the Wechsler Scales: WPPSI, WISC, and WAIS. Attention is directed to the use of the Wechsler Scales both in evaluating intelligence and in clinical personality appraisal. Psychological Report Writing.
- PSY 724 INDIVIDUAL PSYCHOLOGICAL EVALUATION III 2 cr.**
Stresses the development of clinical skills in the assessment of sensory, motor, perceptual, and language impairment in children. Tests such as the Pender-Gestalt, Human Figure Drawings, ITPA, and other special clinical tests will be covered. Psychological Report Writing.
- PSY 725 GROUP TESTS AND PRACTICUM 2 cr.**
A study of commonly used group tests in the school setting is reviewed and evaluated. The student is given an opportunity to administer, score and interpret many of these group tests under supervision. Reports of results of the test will be written and reviewed by the professor. Student reports will aid the student to develop skills in writing reports of diagnostic studies.
- PSY 726 ADVANCED DEVELOPMENTAL PSYCHOLOGY 2 cr.**
This course is designed to assist the student to understand at a more advanced level the development of childhood and adolescence in the realm of their cognitive development, personality development, social development and the dynamics of behavior. The student should be able to appreciate what is considered to be normal development and to utilize norms as a measurement of each child's development in the various phases of growing and developing. In addition, the student will learn to appreciate the range of normal development and to evaluate deviations from the norms in terms of "normal deviation" versus abnormalities of development. Integrated into the course will be information drawn from Anthropology, Sociology, and Physiology.
- PSY 731 PROJECTIVE TECHNIQUES I 2 cr.**
An introduction to the theory of projective technique methods of the study of personality, motivation, "abnormality", and dynamics of behavior. Experience is given to the student in the administration, scoring, and interpretation of some of the more widely used projective tests such as the Sentence Completion, TAT, CAT, and other picture story tests. Particular attention is given to the use of such tests in understanding personality disorders.
- PSY 732 PROJECTIVE TECHNIQUES II 2 cr.**
A course on the theoretical rationale, administration, scoring, and interpretation of the Rorschach test as a method of personality assessment. Supervised experience is provided in its use.
- PSY 741 THEORIES OF COUNSELING AND PSYCHOTHERAPY 2 cr.**
A study of some major theoretical positions on the conduct of counseling and psychotherapy. The course will examine the psychological basis for each of the

theories studied as well as the implications for each approach to treatment of behavior disorders.

This course is designed to prepare the student to take more advanced work in counseling and therapeutic techniques. In addition, it is intended to give the student the broad view of how individual cases might require different approaches to the remediation of adjustment problems and suggest possible modifications of the environment which might aid in the prevention of possible adjustment problems in children.

PSY 742 TECHNIQUES OF COUNSELING AND PSYCHOTHERAPY 2 cr.
WITH PRACTICUM

This course is intended to assist the student to recognize the need on the part of the student for psychological counseling services and to provide a basic skill in engaging in short-term counseling with students who require such services. It seeks to help the student understand the relationship between theory and actual practice in the counseling situation. The course will explore the initial phase of counseling, an understanding of the limitations of the ability of the School Psychologist to conduct long-term, indepth counseling, and the need for referral to outside sources. Goals of the counseling situation in the school environment are explored and the ethical problems of counseling are examined. Additionally, the student will be expected to write and to orally present appropriate information about the case.

PSY 745 PSYCHOLOGY OF THE GIFTED CHILD 2 cr.

This course is designed as a study of the intellectual, social, and emotional development and learning of the gifted child and his adjustment to school and life. Principles of development and learning of the gifted child and their implications for educational programming and curriculum development are explored. The student will be expected to determine state requirements for placement of children, identify the gifted child and formulate in-service programs for school personnel in such areas as mental health concepts, theories and practices of child development.

PSY 746 PSYCHOLOGY OF LEARNING DISABILITIES AND 2 cr.
PRESCRIPTIVE TECHNIQUES

This course is designed to acquaint the student in School Psychology with an understanding of the common types of learning disabilities. Included are considerations of cases of brain damage, dyslexia, the perceptually handicapped and perceptual motor factors in learning disabilities. The course explores potential causes and the results in terms of behavioral manifestations of such learning disabilities. In addition, the course introduces the student to some types of approaches to deal with children with learning disabilities and to develop prescriptions for such remedial treatment.

PSY 747 APPLICATION OF PSYCHOLOGICAL PRINCIPLES 2 cr.
IN SCHOOLS

This course is designed to assist the student in understanding how concepts, knowledge, theories, skills, and professional techniques in the discipline of Psychology may be used in the school environment. The course will seek to assist the student or transfer his previous Psychological background into useful and meaningful approaches to consultation, remediation, program planning, and in assisting individual students to adjust more effectively to the school situation.

PSY 750 ADMINISTRATION OF PUPIL PERSONNEL SERVICES 2 cr.

This course is designed to acquaint the student with the roles of the personnel involved in the Pupil Personnel Services. It explores the administrative structure of typical Departments of Pupil Personnel Services and explores the role of the School Psychologist as a member of a team providing services to children in the school. In

addition, the course considers the possible development of the School Psychologist as an administrative leader in the Pupil Personnel Services.

Attention is given to the role of the School Psychologist in the school with particular attention to legal, ethical and professional standards of the School Psychologist. Students in this course participate in research on the ways School Psychologists function in various school systems and in various states.

**PSY 755 GROUP COUNSELING TECHNIQUES AND
CONSULTATION WITH PRACTICUM 2 cr.**

The course is intended to acquaint the student with common methods of group processes used in counseling and in improvement of adjustment. Included will be consideration of the T group, encounter methods, group therapy, group dynamics, and problem solving groups. This course is intended to broaden the scope of the School Psychologist in dealing with types of problems in the schools which do not require traditional counseling or psychotherapeutic procedures. Students will receive an opportunity to engage in all types of counseling and group processes under the supervision of the professor.

The course will also explore the relationship between counseling techniques and group processes with the role of the consultant to parent, teachers, administrators, other specialists and members of the community at large. The student will be given an opportunity to explore the meaning and effect of their role on others and how to handle situations in which they are giving information and advice.

PSY 760 EXPERIMENTAL METHODS IN PSYCHOLOGY 2 cr.

This course is intended to assist the student to understand how to design, implement and analyze the results of research. Considerations will be given to the use of published literature as a source of ideas about research problems and the student will be assisted in the development of such problems into an appropriate proposal for research study. This course will assist the student in conducting research, consulting with others about research problems, and provide a resource for the interpretation of existing research in the literature.

PSY 765 PSYCHOLOGICAL STATISTICS 2 cr.

This course will teach the student the fundamentals of statistical design of experiments, statistical analysis of results of experiments and the use of statistics as a model in understanding the types of inference to be drawn from published literature. The power and the limitations of various statistical methods will be explored.

PSY 769 INDEPENDENT STUDY 2-4 cr.

This provides the student an opportunity to receive credit for existing competencies and to demonstrate those competencies through appropriate evaluational procedures. In addition, students may be permitted to explore additional work in School Psychology not provided by the courses and experiences designed in the program. This course provides a flexibility to the program in meeting the individual needs of students.

PSY 771 CLINICAL PRACTICUM 3-6 cr.

This practicum provides an opportunity for the student to develop and/or demonstrate competencies in the clinical environment.

PSY 772 INTERNSHIP IN SCHOOL PSYCHOLOGY 12-18 cr.

This is a practicum experience consisting of no less than 540 clock hours of practicum work in a school environment under close supervision. The student is expected to demonstrate all of the competencies of the practicing School Psychologist in this setting.

PSY 795 SEMINAR IN BEHAVIOR MODIFICATION AND 2 cr.
PRACTICUM

This course seeks to establish an initial repertoire of skills which are required for the successful conceptualization, design, implementation and evaluation of behavioral change programs or procedures used in public school contexts. Students will be expected to design and implement a program of behavioral change through a practicum experience.

PSY 796 SEMINAR IN THE ANALYSIS OF RESEARCH IN 2 cr.
SCHOOL PSYCHOLOGY

This course will consist of a review of available literature and of current research in School Psychology. Critical study and evaluation of research findings applicable to the school age child and classroom learning situations will be undertaken. The student will develop skills in finding pertinent research, critically analyzing the research, and be able to present in a clear and detailed manner the data from existing research.

PSY 797 SEMINAR IN PROBLEMS IN SCHOOL PSYCHOLOGY 2 cr.

This course in conjunction with the internship is intended to assist the student better understand the role of the School Psychologist and to deal with the problems which arise during the internship experience. In addition, the student will receive a review of such topics as the history and trends in the growth of School Psychology, the preparation and training of the School Psychologist, the right to education and due process law of 1972, the evaluation of children, psychological and educational assessment, the professional responsibilities, ethics and professional affiliations, community responsibilities, agencies, program and services and the consultant concept of the School Psychologist.

PSY 849 THESIS 4 cr.

The student will demonstrate his ability to conduct an independent, original research study and to write it up in appropriate professional style.

SOCIAL SCIENCE

SOS 706 PSYCHOLOGICAL AND DISCIPLINE IMPLICATIONS 3 cr.
IN SELECTING AND ORGANIZING TEACHING 3 cr.
MATERIALS

This will be a laboratory course devoted to familiarization with social studies resource material.

SOS 707 PHILOSOPHICAL TRENDS IN SOCIAL STUDIES 3 cr.
CURRICULUM

The philosophies of various social studies educators are examined together with application of their ideas. The course will include visitation by scholars subscribing to these ideas as well as classroom observations of the application of the philosophies.

SOS 708 SOCIAL STUDIES AND THE COMMUNITY 3 cr.

The importance of the relationship of the social studies to the community is stressed.

SOS 716 ECONOMIC, SOCIAL, AND POLITICAL ORDER 3 cr.

Analysis of the enormous diversity of the actual social institutions which guide and shape the economic process. Special emphasis will be given to the major types of systems which enable mankind to solve its economic challenge. Several of the more recent rapid growth economics are used as models.

SPA 716	ADMINISTRATION OF CLINICAL PROCEDURES A seminar involving related disciplines and allied professions.	3 cr.
SPA 720	DIAGNOSTIC AUDIOMETRICS A study of various audiometric and speech reception tests outlining the dimensions of hearing; experience in test administration and interpretation of tests.	3 cr.
SPA 725	BASES OF AURAL REHABILITATION Study of perceptive and behavioral problems of the aurally handicapped in society and methods of alleviation and compensation for hearing losses.	3 cr.
SPA 749	INDEPENDENT STUDY AND RESEARCH Open to graduate students in either speech or hearing for pursuing independent interest areas and/or research.	2 cr.
SPA 759	SPECIAL PROBLEMS IN SPEECH PATHOLOGY OR AUDIOLOGY Closely directed study of special problems in Speech Pathology or Audiology.	2 cr.
SPA 785	SEMINAR IN SPEECH PATHOLOGY The role of the Speech Pathologist as a diagnostician and therapist in interdisciplinary investigations including counseling procedures and organization of programs for various pathologies of speech.	2 cr.
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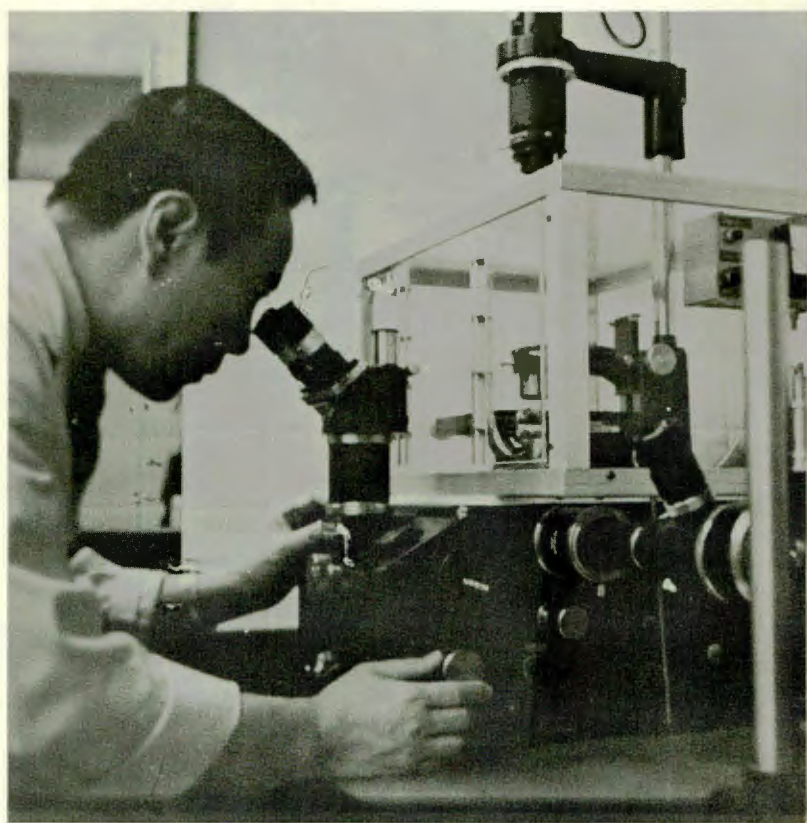
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