School of
GRADUATE STUDIES

1965 summer school
1965-1966 college year

WESTERN MICHIGAN UNIVERSITY
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CALENDAR OF EVENTS

Summer 1965

Final Registration ....................................................Saturday, June 19, 1965
Classes Begin ............................................................Tuesday, June 22, 1965
Diploma Applications Due ..............................................Friday, June 25, 1965
Final Day to Add Classes ..............................................Friday, June 25, 1965
English Entrance Exam .................................................Saturday, June 26, 1965

8:30 a.m.

Foreign Students’ Applications for Fall Semester
to Graduate School Due ...............................................Thursday, July 1, 1965
Final Day to Drop Classes ...........................................Friday, July 9, 1965
Theses Due ...............................................................Friday, July 16, 1965
English Entrance Exam ...............................................Wednesday, July 28, 1965

7:00 p.m.

Six-Week Session Ends ................................................Friday, July 30, 1965
Commencement ..........................................................Friday, July 30, 1965
Application for Admission for Fall Semester
to Graduate School Due ..........................................Monday, August 2, 1965
Final Registration for Post Session ................................Monday, August 2, 1965
Eight-Week Session Classes Close ................................Friday, August 13, 1965

Fall 1965

Final Registration ....................................................Saturday, August 28, 1965
Classes Begin ............................................................Tuesday, August 31, 1965
Labor Day Recess .........................................................Monday, September 6, 1965
Diploma Applications Due ..............................................Tuesday, September 7, 1965
Final Day to Add Classes ..............................................Tuesday, September 7, 1965
English Entrance Exam .................................................Saturday, September 11, 1965

8:30 a.m.

Homecoming ............................................................Saturday, October 16, 1965
Final Day to Drop Classes ...........................................Saturday, October 23, 1965
Foreign Students’ Applications for Winter Semester
for Graduate School Due ...........................................Monday, November 1, 1965
Thanksgiving Recess Begins .........................................Wednesday, November 24, 1965

12:00 noon

Classes Resume ..........................................................Monday, November 29, 1965
Application for Admission for Winter Semester
to Graduate School Due ..............................................Wednesday, December 1, 1965
Theses Due ...............................................................Saturday, December 4, 1965
Term Ends .................................................................Saturday, December 18, 1965
Commencement ..........................................................Saturday, December 18, 1965

3:00 p.m.
Winter 1966

Final Registration ............................. Monday, January 3, 1966
Classes Begin ..................................... Tuesday, January 4, 1966
English Entrance Exam ........................ .. Wednesday, January 5, 1966

7:00 p.m.

Final Day to Add Classes ..................... Tuesday, January 11, 1966
Diploma Applications Due ..................... Wednesday, January 12, 1966
Final Day to Drop Classes ..................... Saturday, February 26, 1966
Foreign Students' Applications for Spring Session
for Graduate School Due ....................... Tuesday, March 1, 1966
Application for Admission for Spring Session
to Graduate School Due ......................... Friday, April 1, 1966
Theses Due ....................................... Saturday, April 2, 1966
Term Ends ...................................... Saturday, April 16, 1966
Commencement .................................. Saturday, April 16, 1966

3:00 p.m.
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Fred W. Adams, Grosse Pointe
Alfred B. Connable, Kalamazoo
Dorothy Upjohn Dalton, Kalamazoo
John R. Dykema, Grosse Pointe Farms

Term Expires
December 31, 1966
December 31, 1966
December 31, 1968
December 31, 1968
December 31, 1970
December 31, 1970
December 31, 1972
December 31, 1972

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Alfred B. Connable, Vice Chairman
John J. Pruis, Secretary
Robert B. Wetnight, Treasurer
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An independent graduate program leading to the degree of Master of Arts in various curricula in the field of Education was first offered at Western Michigan University in the fall semester of 1952-53. Since then programs that lead to the Master of Arts degree in Biology, Blind Rehabilitation, Chemistry, Economics, English, Geography, History, Home Economics, Language, Librarianship, Mathematics, Music, Occupational Therapy, Physics, Political Science, Psychology, Sociology, and Speech Pathology have been developed. The Master of Business Administration degree is also offered.

A Specialist in Education degree is now offered for completion of a sixth-year program in School Administration; including Directors of Curriculum, Guidance, Special Education; and in School Psychological Examiner and in teaching of a number of subject matter areas.
SECTION 1

SCHOOL OF GRADUATE STUDIES
PROCEDURES AND REGULATIONS

Admission—Dates

Admission to the School of Graduate Studies is required for permission to register for graduate classes. Students planning to register for courses taught on campus must apply for admission no later than:

- June 1 (1965 only) ... Summer Session
- August 1 ... Fall Semester
- December 1 ... Winter Semester

Foreign students must apply for admission one month before the above dates.

Students planning to register for extension courses may delay applying for admission until the beginning of classes.

Admission—Types

1. Admission Without Reservations. This type of admission is awarded to the student whose previous academic record merits such consideration and who satisfactorily passes the English examination and meets the requirements for the curriculum selected. Acceptance to a definite program of study leading to a degree is dependent upon the approval of the unit in which the student plans to study. A grade-point average of at least 2.6 (A=4) for the last two years of undergraduate work is normally required for admission. A few students may be admitted by the Admissions and Standards Committee whose undergraduate record falls below that point. Students with an M. A. degree who wish to study in a second field for a second M. A. degree will ordinarily be admitted without reservation and without requiring an English examination. All other students must pass an English examination if they desire admission to a program before being granted admission without reservation.

2. Tentative Admission Pending Receipt of the Bachelor's Degree. A student may receive tentative admission during the final semester of his undergraduate work. Final admission will be determined when a transcript is submitted giving evidence of satisfactory completion of the Bachelor's degree. Such admission requires the completion of the English examination.
3. Dual Enrollment Admission. Senior students at Western Michigan University, who need six hours or less to complete the requirements for the Bachelor's degree, may seek admission to the School of Graduate Studies during the semester prior to graduation. If admission is granted, the student may elect graduate courses, in addition to those required at the undergraduate level to complete the Bachelor's degree, to encompass a full academic program. Such dual enrollment is permitted for one semester only. Graduate credit thus earned may not be used to meet undergraduate requirements.

1. Admission to Non-Degree Status. A student who does not desire to enroll in a degree program but wishes to enroll in courses may secure admission as a non-degree student. A transcript of his undergraduate work must be submitted. A non-degree student need not take the English examination. The School of Graduate Studies gives no assurance that work taken as a non-degree student will be counted toward graduation or that the student will be later accepted into a degree program.

5. Admission from a Non-Accredited College. A student who has received a Bachelor's degree from a non-accredited college, but who otherwise meets all the requirements for admission may be permitted to elect six hours of graduate work with the stipulation that his admission will be reviewed after the completion of the six hours. This admission will also require an English examination.

6. Admission as Guest Matriculant. A student who is already enrolled in the Graduate School of another college or university may enroll for courses at Western Michigan University as a Guest Matriculant. Application forms for such admission are available at the Graduate Office.

Admission—Procedures

Admission to the School of Graduate Studies is secured through the following steps:

1. Request the School of Graduate Studies to send an Application for Permission to Enroll.
2. Determine from Section I of the Bulletin the type of admission that is desired.
3. Select from Section II of the Bulletin the program of study that will be pursued.
4. Return the Application for Permission to Enroll six weeks before registration.
5. Request the Registrar of all colleges previously attended to send transcripts of credits to the School of Graduate Studies, Western Michigan University. Transcripts are also due six weeks before registration.
6. Take the English Entrance Exam at the time specified by the School of Graduate Studies after applying for admission.
7. Check the calendar of events listed in the Bulletin for the registration day of each semester or session.
Re-entry

Students who have once been admitted to the School of Graduate Studies need not file for re-entry so long as they attend classes on campus at least once during the past two years. Those who wish to register for classes should file for re-entry by notifying the Graduate Office of their intention three weeks before the date the student desires to register.

Students who have taken classes only by extension must file for admission to take courses on campus by notifying the Graduate Office of their intention three weeks before the date the student desires to register.

General Requirements for a Master's Degree

(Units may add other requirements)

(Requirements for Specialist Degree see Sixth-Year Program at end of Section II)

1. Admission
   a. Bachelor's degree
   b. Transcripts of all courses taken beyond high school
   c. An average grade of at least 2.6 (A=4) in the last two years of undergraduate work
   d. Approval of Application for Permission to Enroll
   e. Acceptance by a unit for a definite program of study
   f. Passing of the English Entrance Exam. A non-credit English course must be passed by students failing the English Entrance Exam

2. Candidacy
   a. An application for Candidacy for the Master's degree is required during the semester in which the tenth hour of graduate credit at Western Michigan University is being completed.
   b. Deficiencies indicated at the time of admission must be removed within the first ten hours of graduate study.
   c. An average grade of at least 3.0 (A=4) must be secured in courses taken on campus. A 3.0 overall average is also required.

3. Graduation
   a. Diploma Application
      A diploma application must be submitted no later than the final registration date of the semester in which the student expects to complete his work for the Master's degree.
   b. Minimum Credit Hours
      Completion of a program of study outlined by an adviser including a minimum of 30 hours of graduate credit. Only courses numbered 500
and above are acceptable for graduate credit. One-half of the credits earned must be in courses numbered 600 or above.

c. Residence Credit

Completion of a minimum of one full-time summer (5 semester hours minimum) or one semester (ten semester hours minimum) of residence on campus is required. Students who are employed over a twelve-month period may register for four consecutive semesters of on campus work in lieu of the five or ten hour requirement. Of the total of 30 semester hours, a minimum of 18 hours must be taken on the campus of Western Michigan University except for those students who study in an approved residence center of Western Michigan University. Such students may offer a maximum of 20 hours of off-campus work if all of that work is taken in the residence center. Work transferred from other institutions must be included within the 12 hours maximum off-campus work permitted, or in the case of the student studying in a residence center within the 20 hours of off-campus work permitted.

d. Grade Point Average

A 3.0 average (A=4) is required for courses taken on campus as well as an overall 3.0 average. Grades of Incomplete will become “E” unless completed within one calendar year. Students who seek an extension of time must notify the Graduate Office within the year indicating the circumstances that warrant such consideration. This ruling does not apply to the course, Thesis 700.

c. Hours After Candidacy

The election and completion of at least six hours is required after being approved for Candidacy.

f. Transfer Credit

Six hours of graduate credit may be transferred from other schools provided:

1) The credits were earned in institutions accredited for graduate study and are of B grade or better
2) The student’s adviser verifies that the credits contribute to the student’s program of study
3) The School of Graduate Studies approves the credits for transfer

g. Time Limit

All work accepted for the degree program must be elected within six years from the date of receipt of the graduate degree.

h. Thesis

Students writing a thesis should consult the most recent edition of Format for Master’s Theses, Specialist in Education Project, and Graduate Reports.

Graduate School News is a newsletter published once each semester to report on the activities of the School of Graduate Studies. The newsletter is
distributed to students who have an active enrollment status and to
their graduate advisers. It will include important information which
will supplement the information given above.

Registration, Student Load and Fees

Registration: Registration will be held on the dates listed in the
Calendar of Graduate Events on p. 3 of this bulletin. The hours of
registration are listed in the Schedule of Classes under the heading,
Procedure for Registration. The Schedule of Classes will be sent upon
request and should be consulted for details regarding the time and
place of meeting of graduate classes. Students who are permitted be-
cause of extraordinary circumstances to enroll after the final day
scheduled for registration are required to pay a late enrollment fee of
$5.00.

Changes in Enrollment: Any changes in graduate enrollment must
be made by the end of the fifth day of the summer session and by the
end of the first complete week of each semester. A student may drop
graduate courses through the third week of the summer session or the
sixth week of the fall or winter semester. The forms for requesting
such changes may be secured at the Graduate Office.

Student Load: The load for graduate students is governed by the
following regulations:

1. Part-time graduate students, if employed during the fall and
winter semesters as full-time teachers or school administrators, may
elect graduate courses granting not in excess of four hours of credit.
An exception to this rule is made with the course, Thesis 700, which
the student may elect during one semester for six hours of credit.
Students employed full time in other fields may be allowed to elect
a maximum of six hours of graduate credit with permission of the
Dean.

2. With permission of the Dean, a student employed full time in a
field of education may elect graduate courses granting five hours of
credit provided such credit shall not involve more than two graduate
courses. Such an exception may be granted only once during the
work for the Master's degree. These restrictions apply to all gradu-
ate courses a student may elect during a semester whether taken
on campus, in extension and/or at some other institution.

3. A normal load for a graduate student devoting full time to
graduate study is twelve semester hours. With permission of the
Dean, a student may elect graduate courses granting not in excess
of fifteen credit hours.

4. The maximum load for graduate students is six hours during
a regular six-weeks summer session or eight hours during the eight-
weeks session. A student may elect a maximum of two hours of
graduate credit in a post-session workshop. Exceptions to this rule will not be made.

Student Fees: The following fees will be charged for graduate study:

**SEMMESTER AND SUMMER SESSION FEES**

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<th>SEMESTER</th>
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**SUMMER SESSION (1965)**

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**On-Campus Short Courses (except Field Services)**

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Policy for Refunds and Change of Credit Load. All changes in registration or complete withdrawal must be cleared with the Graduate Office. Student Fees will be refunded if proper application is made at the Business Office within the prescribed time limits and after the student has completed his official withdrawal or reduction in academic load. The refund date will be determined by the date of completion of official withdrawal. All refund requests must be accompanied by the student's final program card and activity ticket. A refund will not be granted for reducing the credit hour load after the final day for adding a course. Student Fees will be refunded according to the following schedule:

1. Seven calendar days or less after the last official registration day—90% of total.
2. No refunds are made after the seventh day of the summer session. More than seven calendar days and less than twenty-two days after the last official registration day of the semester—60% of total.
3. More than twenty-one calendar days and less than thirty-six days after the last official registration day—40% of total.

4. More than thirty-five calendar days and less than fifty days after the last official registration day—20% of total.

5. No refund will be granted if the student withdraws after the forty-ninth calendar day after the last official registration day.

6. No refund will be granted unless applied for by the fifty-sixth calendar day after the last official registration day of the semester in which the student withdraws.

7. No refund will be made to a student eligible for benefits under Act 245 of the Public Acts of 1935, as amended, unless request is made no more than one week after registration.

8. Refunds are not automatic but must be applied for at the Business Office within seven days after withdrawal.

9. The above refund policy does not apply to late enrollment fees.

Fee for Applied Music: A special departmental fee is charged for each registration in an Applied Music course. The fee for one hour per week of private instruction is $75 per semester or $30 for the summer session.

Audit Status: A graduate student may enroll as an auditor for a class for which he does not desire credit or a grade. Such auditors will pay the regular graduate fees. In order to have the course entered on the student’s permanent record with the designation “audit”, he must attend at least three-fourths of all class sessions and give evidence to the instructor that his role as an auditor has been satisfactory. No student may change from the audit status to regular enrollment or vice versa after the close of registration.

Fellowships, Awards and Loans

Graduate Fellowships: Fellowships valued at $2,000 for the academic year will be made available to selected students holding bachelor’s degrees from approved colleges and universities. These fellowships are granted on the basis of merit to persons planning to pursue full-time work on the campus leading to advanced degrees. Such persons must possess a combination of qualities indicating potential leadership in their respective fields with specific emphasis on high scholarship and desirable personal attributes.

Professional participation of about fifteen hours per week is required of fellows, consistent with their educational aims and objectives. Candidates may carry from eight to twelve semester hours of graduate work each of the two semesters. A stipend is provided for student fees. The application forms may be secured from the Graduate Office. All applications, transcripts, and letters of recommendation must be submitted by March 1.
Graduate Assistantships

Many of the departments provide graduate assistantships with stipends of approximately $2,000 to promising students. Students receiving an assistantship are expected to participate in approximately fifteen hours per week in professional service in the department and to adjust their academic load accordingly.

Elmer H. Wilds Graduate Award: Each calendar year the Graduate Council may select from among the outstanding graduate students, the one or more whose achievement and potential bear evidence of outstanding educational leadership. This student or students will be designated as the Elmer H. Wilds Scholar. In order to be eligible for the award, a student must have the following qualifications:

1. A point-hour ratio of at least 3.9 for the total graduate program including transferred credit
2. A high degree of integrity as revealed in the student's relationships with the faculty and reports of those who work with him
3. A high moral standard as revealed in the student's personal habits
4. Attention to personal appearance
5. A high degree of ability to communicate in class and in conversation

Loans: Graduate students who enroll for a minimum of 10 hours of on-campus credit in a semester may qualify for some type of student loan. Students desiring information regarding a student loan should contact the office of the Administrator of Scholarships and Loans.

University Services

Housing: All questions about room, board, and other living expenses should be addressed to the Dean of Men or Dean of Women. Graduate students are subject to the rules of the Dean of Men and the Dean of Women and to the other general regulations of Western Michigan University. Foreign students should contact the Foreign Student Adviser.

Placement Service Open to Graduate Students: Employing officials representing business, industry, governmental agencies, and educational institutions frequently have desirable positions for which they are seeking candidates with training beyond the Bachelor's degree. Any graduate students who wish to be considered for such positions when they are available should be on the active placement list.

Enrollment in the School of Graduate Studies entitles any student to free placement service whether or not his undergraduate work was taken at Western Michigan University. Students not already registered with the Placement Office are invited to do so. Those graduate students formerly enrolled with the Placement Office may reactivate their credentials by furnishing the office with current information concerning their employment and advanced study.

Complete information and registration materials may be secured in the Placement Office of Western Michigan University.
SECTION II

GRADUATE FIELDS AND PROGRAMS

General Requirements

Each degree candidate must choose a graduate program that is compatible with his professional objectives. The programs listed on the following pages have been developed to provide students with the basic experiences that implement these objectives. The programs are, however, sufficiently flexible to allow for the differing needs of individual students.

It is obvious that growth in personality and the development of professional abilities are aims of primary importance in graduate education. Hence, through the counseling process, graduate advisers will help the students choose courses, both cultural and professional, to meet their individual needs. Courses and experiences should be chosen so that the graduate student becomes a more mature and professionally proficient person—a person with greater professional skill, increased ability to analyze and interpret life situations, and greater insight into problems involved in professional leadership.

Many of the courses listed will not be offered every semester or Summer Session. By studying "Sections III and IV, Description of Courses," the student will find the session or sessions when the desired courses are available. Occasionally a student will find that some of the suggested courses are similar to those he has elected at the undergraduate level. In such cases, with the approval of the adviser, substitutes may be made provided the general requirements for the degree are satisfied.

BIOLOGY

Clarence J. Goodnight, Adviser

The master's degree in Biology provides a general background in the field with a limited amount of specialization in the area of the student's major interest. It is designed to meet the needs of people in teaching, research, laboratory and field work, and conservation. It may be used as a foundation for continued graduate work leading to a doctor's degree at another institution, or may be considered terminal.

To satisfy the requirements for the master's degree in Biology, a student must successfully complete a minimum of twenty-four hours of graduate work in Biology with the remaining six hours in a related field or fields. The choice of courses will be made with the recommendation of the student's advisory committee and must be related to the student's goals. Successful completion of a qualifying examination is required for admission to candidacy in the Biology program.
A thesis must be prepared under the direction of the advisory committee. The chairman of the student's advisory committee will be a member of the graduate faculty having competence in the area of the student's major interest. Specialization is permitted in any one of the following areas: botany, zoology, ecology, physiology, genetics, parasitology, public health, and the teaching of biology.

BUSINESS ADMINISTRATION

Leo Niemi, Chairman of Advisers

The Master of Business Administration degree program has been established to prepare men and women to operate effectively in executive and administrative positions in business and government. The degree is designed to meet the needs of students with baccalaureate degrees in business, liberal arts, science, engineering and related fields, who wish training in one or more areas of business administration. The participant is challenged to develop the judgment, discriminating capacity, knowledge and understandings that will permit him to work efficiently in administrative and other leadership roles. Under the guidance of the graduate staff of the School of Business, the participant is provided personal programming in the selection and arrangement of his courses.

Successful completion of a minimum of thirty hours of graduate credit is required for the Master of Business Administration degree. Additional work in the School of Business may be expected from students who have not taken courses in at least three of the areas of accounting, business law, management, marketing, finance, and statistics.

The requirements for the degree include (1) the selection of an area of concentration; (2) the completion of a minimum of twenty to twenty-four hours of business, which may include the thesis; (3) graduate work in economics and the behavioral sciences; (4) additional credit for fulfilling the degree requirements in subject-matter areas that meet the educational objectives of the student; and (5) the completion of courses, or demonstrated competence, in not less than three of the subject areas of accounting, finance, management, marketing, general business and, in addition, the required area of economics.

The Graduate Committee of the School of Business may require that tests be taken for entrance to, or graduation from, the MBA degree program. For the part-time student, residence requirements may be fulfilled by taking one or more courses during four consecutive semesters, excluding summer sessions.

CHEMISTRY

Lillian H. Meyer, Adviser

The master's degree in Chemistry is planned to provide a broad background in the various fields of chemistry with concentration in one.

Entrance requirements include admission to the School of Graduate Studies and the attainment of a satisfactory grade in qualifying examinations covering the fields of General, Analytical, Organic, and Physical Chemistry. These examinations may be taken on the following dates:
June 21, 1965 and April 23, 1966, 9:00 a.m. and 1:00 p.m.—any; August 30, 1965 or January 3, 1966—8:00 a.m.—General, 10:00 a.m.—Analytical; 1:00 p.m.—Organic, 3:00 p.m.—Physical. Deficiencies indicated by these examinations may be removed only by the completion of appropriate undergraduate courses with a minimum grade of B.

The student is required to elect a minimum of twenty to twenty-four hours in the field of Chemistry, including the thesis. A final oral examination by the student's graduate committee is a requirement for the degree. Course work will also include from six to ten hours in a related field or fields. The course sequence will include (if not previously elected):

2. 520 Advanced Analytical Chemistry.
3. 505 Chemical Literature.
4. 601 Graduate Seminar, to be elected for two semesters.
5. Thesis.

ECONOMICS

Robert S. Bowers, Adviser

In order to earn the Master of Arts degree in Economics, the following departmental requirements must be met:

1. For admission to candidacy, satisfactory completion, at the graduate and/or undergraduate levels, of a total of at least twenty-four hours in the social sciences with a minimum of ten hours in economics, or in equivalents approved by the graduate adviser.
2. For graduation, satisfactory completion of a minimum of twenty to twenty-four hours of graduate work in the field of economics and from six to ten hours in a related field or fields. Specific graduate requirements for the offerings in economics include (a) six hours of course work in economic thought and theory; (b) a minimum of six hours in one of the following areas of concentration; economic theory, labor economics, governmental economics and regulated industries; (c) a course in economic statistics and (d) a seminar in the area of concentration.
3. Upon recommendation of the major professor, the completion of a thesis.
4. Successful completion of an oral examination if required by the department.

EDUCATION

William P. Viall, Chairman of Advisers

The degree of Master of Arts in the field of Education is awarded in twenty-seven curricula, divided into the following general categories: 1) School Administration, 2) Guidance and Personnel Services, 3) School Psychologist, 4) Blind Rehabilitation, 5) Visiting Teacher, 6) Special
Education, 7) Teaching at the Junior College Level, and 8) Curricula in Teaching.

The first six of these categories are provided through the Department of School Services of the School of Education. Teaching at the Junior College Level and the Curricula in Teaching are provided by the Department of Teacher Education in cooperation with a number of departments in the schools of Applied Arts and Sciences, Business, and Liberal Arts and Sciences. These curricula are planned to provide professional preparation for students who are interested in teaching, administration, and certain specialized positions in elementary and secondary schools and junior colleges. The Guidance and Personnel Services curriculum may also be chosen by individuals interested in the ministry, business counseling and counseling positions in social service occupations. With the exception of those students who are interested in Guidance and Personnel Services and those students who plan to teach at the junior college level, all students applying for Candidacy in the curricula of the School of Education are expected to have completed a minimum of fifteen hours of undergraduate work in professional education. In some instances students may present equivalent preparation when such preparation is approved by the School of Education.

Curricula Provided by the Department of School Services

The degree of Master of Arts offered by the Department of School Services is awarded in eight curricula intended to prepare personnel for positions in educational leadership and services which are largely non-instructional in nature. In view of the fact that many students who complete this degree will wish to continue work toward further degrees, students who select such curricula should keep in mind the requirements of the advanced degree in selecting their Master's curriculum.

School Administration

The following curricula are offered in the general category of School Administration. Advisers for each program are also listed:

Curriculum Development and Coordination
Adviser: Dorothy McCuskey

Elementary School Administration and Supervision
Adviser: James Davenport

General School Administration and Supervision
Adviser: Harold Boles

Secondary School Administration and Supervision
Adviser: Donald Weaver

Students in all School Administration curricula are expected to have at least one year of teaching experience before Candidacy. All of these curricula have the same general requirements which include a minimum of thirty semester hours of graduate work in the following areas:
1. Twelve hours, consisting of three hours in each of the core courses; 601 Introduction to Educational Research; 602 Curriculum Principles; 603 Social and Philosophical Foundations of Education; 604 Psychological Foundations of Education; or equivalent as approved by the student's adviser.

2. Ten hours, to be selected by the student and his adviser, generally from the fields of Anthropology, Business, Economics, History, Librarianship, Political Science, Psychology, Sociology and Speech, although exceptions may be made.

3. Eight hours in the major field which must include Education 660, Principles of Educational Leadership, 3 hours; Education 667, Administration of School Personnel, 2 hours; and three hours in either Education 613, Elementary Administration and Supervision; Education 623, Supervision of Instruction; or Education 624, Secondary Administration and Supervision.

Guidance and Personnel Services


Prerequisite: A minimum of one year of teaching experience (or equivalent) before graduation, if the student intends to serve in an elementary or secondary school.

The curriculum for Guidance and Personnel Services requires the following:

1. Ten hours consisting of 601, 602, 680 (The Personnel Worker and his Role)

2. Minimum of eight hours consisting of two hours in 582, Information Service and Guidance, and a minimum of six hours of Sociology and Psychology.

3. Twelve hours in the major area, consisting of 681, Organization and Administration of Student Personnel Services, 4 hours, or 682, Research in Guidance and Personnel Services, 4 hours; and 683, Theory and Laboratory Practice in Counseling, 4 hours, and 684, Supervised Practicum and Professional Experiences, 4 hours.

School Psychologist

Adviser: Stanley Kuffel

Prerequisite: Michigan teaching certificate and major or minor in psychology to include courses deemed advisable by the Psychology Department. Two years of teaching experience required before graduation.

To satisfy the requirements in this curriculum the student must elect courses from the offerings in education and psychology as follows: Education 534, 585, 604, and 610; Psychology 560, 624, 650, 651, 661, 662, 680, 681, and 682. Substitutions may be made in certain cases with the consent of the graduate adviser.
The psychology courses deemed advisable for a background in this program include Abnormal Psychology, Psychology of Personality, Laboratory in Psychological Testing, Elementary Statistical Methods in Psychology, Mental Testing, Elementary Experimental Psychology, Learning and Memory, or their equivalents. They must be taken either at the undergraduate level or made up with additional graduate courses. A minimum of thirty hours in courses approved by the Psychology Department will qualify a student for a Master's degree in School Psychology.

Upon satisfactory completion of the School Psychologist program and of a 500 hour internship, the student may qualify for approval to work as a school diagnostician under the laws of the state of Michigan.

**Blind Rehabilitation**

Western Michigan University, in cooperation with the Vocational Rehabilitation Administration, Office of Health, Education, and Welfare, is offering the following graduate programs in Blind Rehabilitation:

**Orientation and Mobility Specialist**

*Advisers:* Donald Blasch, Stanley Suterko

The purpose of an Orientation and Mobility Specialists is to teach blind persons to move about effectively, efficiently, safely and gracefully in familiar and unfamiliar environments. An essential part of the re-education of the blind is to train them to utilize more effectively their senses that are still intact.

Students will be selected for this program on the basis of demonstrated mature judgment, emotional stability, leadership qualities, and good academic ability. They should have completed their bachelor's degree, preferably with some background in education, sociology and the biological sciences. They must be in good physical health and have normal or correctable vision to approximately 20/20.

The program requires three semesters for completion. The first two semesters are spent in residence at Western Michigan University in academic study, together with elementary and intermediate training in orientation and mobility on an individual basis. The third semester will involve an internship at Veterans Administration Hospital, Hines, Illinois, where the trainees will receive clinical training and practicum in orientation and mobility. The successful completion of 37 semester hours are required to receive the degree of Master of Arts.

**Home Teachers of the Adult Blind**

*Adviser:* Ruth Kaarlela

The clinical training of Home Teachers of the Adult Blind has been established to prepare men and women to teach blind adults in their homes and communities. Their purpose is to assist the blind individual to achieve his maximum degree of independence and personal and social fulfillment.

The prerequisite for admission is a bachelor's degree from an ac-
Special Education Advisers: Emotionally Disturbed, Kristen Juul; Mentally Handicapped, Joseph Eisenbach; Crippled and Homebound, Isadore Turansky

The Master of Arts degree in Special Education is awarded under three different circumstances:

1. Graduate students and teachers who already hold the Bachelor's degree in elementary or secondary education may take the courses required for the certification of teachers of the mentally handicapped, the emotionally disturbed, or the crippled and homebound. These courses may also be applied toward a Master of Arts degree.

2. A Master of Arts degree is granted to teachers who have their undergraduate training in some specific area of special education. The advanced degree is broadly designed to acquaint teachers with a variety of handicaps so that they have a more comprehensive understanding of the children with whom they work in view of the fact that most exceptional children have more than one handicap.

3. A Master of Arts degree in the Education of Emotionally Disturbed and Mentally Handicapped Children is awarded to teachers who have already received their Bachelor's degree and completed an undergraduate major in these fields. The objectives of the courses are to give the students a deeper awareness of the organic, accredited college or university with a major in the behavioral sciences. Successful completion of 40 semester hours of graduate credit is required for the Master's degree. Twenty-eight semester hours will be earned during two semesters of academic study in residence at Western Michigan University. Twelve semester hours will be earned during two additional semesters of internship and residency in field placements at accredited agencies for the blind. A professional paper is also required.

Visiting Teacher

Advisers: Nellie Reid, Frank Heger

The program for the preparation of Visiting Teachers is designed to meet the requirements for full approval by the Department of Public Instruction for students enrolling in this curriculum. Thirty hours of graduate work in Education, Psychology, and Social Work are required.

The Visiting Teacher Curriculum has developed as a cooperative program with the School of Social Work at the University of Michigan. From sixteen to eighteen hours of course work is taken at Western Michigan University and from twelve to fourteen hours at the University of Michigan.

Other requirements:

1. Candidates must possess a valid teaching certificate
2. Candidates must have three years of teaching experience or equivalent experiences with children and youth
3. Candidates must spend at least one semester or summer session at the University of Michigan

Special Education

Advisers: Emotionally Disturbed, Kristen Juul; Mentally Handicapped, Joseph Eisenbach; Crippled and Homebound, Isadore Turansky

The Master of Arts degree in Special Education is awarded under three different circumstances:

1. Graduate students and teachers who already hold the Bachelor's degree in elementary or secondary education may take the courses required for the certification of teachers of the mentally handicapped, the emotionally disturbed, or the crippled and homebound. These courses may also be applied toward a Master of Arts degree.

2. A Master of Arts degree is granted to teachers who have their undergraduate training in some specific area of special education. The advanced degree is broadly designed to acquaint teachers with a variety of handicaps so that they have a more comprehensive understanding of the children with whom they work in view of the fact that most exceptional children have more than one handicap.

3. A Master of Arts degree in the Education of Emotionally Disturbed and Mentally Handicapped Children is awarded to teachers who have already received their Bachelor's degree and completed an undergraduate major in these fields. The objectives of the courses are to give the students a deeper awareness of the organic,
emotional, cultural and other dynamics involved in the behavior and learning problems of handicapped children. Remedial skills and procedures are also stressed.

All students who receive a degree in the field of Special Education must complete the following requirements:
1. A minimum of 30 hours of graduate level work of which 15 must be in Special Education
2. Three of four core courses in Education required of student who complete degrees in education or their equivalent if approved by the student's adviser.
3. Six hours of work in courses offered by the departments outside the School of Education

**Curricula Provided by the Department of Teacher Education and Cooperating Departments**

Graduate programs are offered in fifteen curricula intended to prepare teachers for superior classroom performance and a deeper understanding of their roles as teachers in the American system of education.

**Teaching at the Junior College Level**

*Advisor:* Cameron Lambe

The requirements for this curriculum including a minimum of thirty hours of graduate level work courses in professional education and in the student’s major and minor fields are distributed as follows:
1. Seven hours made up of the following professional courses: Education 601, Introduction to Research, 650, Growth and Development in Later Adolescence, and 690, The Community College.
2. A minimum of sixteen hours in the student’s major. It is assumed that the student will also have completed an undergraduate major in this field.
3. A maximum of seven hours may be elected from the student’s minor area or cognate courses related to the major field.

**Curricula in Teaching**

The following teaching curricula have the same general requirements for completion of the thirty graduate hours for the Master of Arts degree. These requirements include:
1. Nine hours selected from the four three-hour courses in the Education core:
   a) 601 Introduction to Educational Research
   b) 602 School Curriculum
   c) 603 Social and Philosophical Foundations of Education
   d) 604 Psychological Foundations of Education
2. Fifteen hours in the major or related academic fields
3. Six hours of electives, some or all of which may be professional education courses.

The Curricula in Teaching, the graduate advisers and the prerequisites, for admission, in addition to the fifteen hours of undergraduate work in professional education or the equivalent, are listed below:

**Teaching in the Elementary School**
*Adviser:* Vern Farrow, Louis Govatos, Sara Swickard

**Teaching in the Junior High School**
*Adviser:* Clara Chiara

**Teaching of Art**
*Adviser:* Harry Hefner
*Prerequisite:* Twenty-five hours in art or the equivalent

**Teaching of Business Education**
*Advisers:* E. L. Marietta, Max O. McKitrick
*Prerequisite:* Minor in business or the equivalent

**Teaching of Distributive Education**
*Adviser:* Adrian Trimpe
*Prerequisite:* Must qualify for a vocational certificate as a coordinator

**Teaching of Home Economics**
*Adviser:* Eunice E. Herald
*Prerequisite:* Minor in Home Economics

**Teaching of Industrial Education**
*Adviser:* Charles G. Risher
*Prerequisite:* Minor in Industrial Education

**Teaching of Literature and Languages**
*Adviser:* David F. Sadler
*Prerequisite:* Minor in English

**Teaching of Music**
*Adviser:* Elwyn F. Carter, Charles Osborne
*Prerequisite:* Major in Music

**Teaching of Physical Education**
*Adviser:* George G. Dales
*Prerequisite:* Minor in Physical Education

**Teaching of Science**
*Adviser:* Edwin B. Steen
*Prerequisite:* Minor in one department of the science division
Teaching of Mathematics
Adviser: Robert C. Seber
Prerequisite: Minor in mathematics

Teaching of Social Sciences
Adviser: William V. Weber
Prerequisite: Twenty-five hours in combined fields of economics, history, philosophy, political science and sociology

Teaching of Speech Correction
Adviser: Robert J. Erickson
Prerequisite: Nine hours of undergraduate speech correction before or in conjunction with graduate work and consent of adviser

Teaching of General Speech
Adviser: Zack York
Prerequisite: Minor in speech with suitable cognates.

The master's degree program in English is designed to improve the student's proficiency in criticism and writing and to increase his understanding of literature and language. Requirements for the degree are these:

1. An acceptable undergraduate major in English or some other preparation accepted as the equivalent by the English Department.
2. Completion of twenty to twenty-four semester hours of graduate work in English, including 668 Literary Criticism, 674 Structure of Modern English, 660 Methods of Research in English and 661 Seminar in English.
3. Completion of six to ten semester hours of graduate work in appropriate cognate fields.

GEOGRAPHY

In order to earn a master's degree in Geography, a student must satisfy the following departmental requirements:

1. An undergraduate major in Geography or its equivalent.
2. Thirty hours of graduate credit in Geography and cognate fields with at least twenty hours in Geography.
3. An acceptable thesis and/or field assignment, or two approved research papers.
4. Demonstrated competence in:
   a. Field procedures
   b. Documentary analysis
   c. Cartographic and statistical presentation of data
   d. General physical and cultural patterns
   e. Philosophy of Geography
5. Completion of required courses: Geography 661 and 664.
6. Completion of a minimum of 5 hours in at least two of the four following areas of concentration: Regional; Economic and Urban; Cultural, Historical and Political; or Physical Geography.
7. An oral examination.

**HISTORY**

Edward O. Elsasser, Adviser

In order to earn the Master of Arts degree in History, a student must satisfy the following departmental requirements:

1. For admission to candidacy, either (a) completion of thirty hours of undergraduate credit in the social sciences and closely related subjects, including at least fifteen hours of History, or (b) possession of other preparation accepted as the equivalent by the departmental committee.

2. Completion of a minimum of twenty to twenty-four hours of work in history, including 592 (The Literature of History) or 593 (The Philosophy of History), 690 (Historical Method), and one seminar. From six to ten hours will be required from the offerings of related departments.

3. The preparation of an acceptable thesis for which six hours of credit will be awarded. Under certain conditions, the department may waive this requirement.

4. Distribution of credit among the following fields of history in such manner that, together with his credits in advanced undergraduate courses, the candidate shall have earned not less than eight hours in each of three fields, including one European and one United States: (a) United States to 1865 and contemporary Latin America; (b) United States since 1865 and contemporary Latin America; (c) Ancient and Medieval; (d) Modern Europe, 1500-1815; (e) Modern Europe, 1815 to the present; (f) Russia and the U.S.S.R.; (g) Far East.

5. Satisfactory completion of comprehensive examinations administered by the department.

**HOME ECONOMICS**

Eunice E. Herald, Adviser

The degree of Master of Arts in Home Economics is designed for the person with a Bachelor of Science or Arts in Home Economics. The Master's degree is planned to provide a general program of studies in the whole area of Home Economics for the person who may have specialized in Foods and Nutrition, Textiles and Clothing, Family Relationships or Home Economics Education at the undergraduate level. A general program of studies in three areas of Home Economics is included: a) Foods and Nutrition, b) Textiles and Clothing, and c) Family Relationships. The student may or may not have specialized in one of these areas but will have had the foundation courses to pursue them at the
graduate level and could broaden the scope and depth of understanding in one of the three areas. The degree may be used as a foundation for continued graduate work leading to a Doctor’s degree at another institution.

In addition to the Graduate School admission requirements, the student must:

1. Choose 8 - 10 hours in a minimum of 3 courses in the basic courses selected from

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>500 Advanced Textiles</td>
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<td>510 Advanced Nutrition</td>
<td>3</td>
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<td>518 Advanced Foods and Experimental Foods</td>
<td>4</td>
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<td>600 Clothing Techniques</td>
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<td>650 Advanced Home Management</td>
<td>2</td>
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<td>652 Family Life Education</td>
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2. Complete a total of twenty (20) hours of work in Home Economics at the Graduate level including a minimum of 2 hours of Seminar credit;

3. Complete a minimum of ten (10) hours of work at the Graduate level in allied areas e.g. Sociology, Psychology, Economics, Biology, Chemistry, Education, Art.

This program is planned for the following students:

1. Dietitians working toward a Master’s degree or who have been out of the field and membership in the American Dietetics Association has been dropped and now are required to take a minimum of five hours of academic work to be reinstated;

2. The Home Economist in Business who may need extra work in specific areas;

3. The Home Economist in Extension;

4. The School Lunch Manager;

5. The Teacher of Home Economics who may have been employed and desires to bring herself up-to-date in Home Economics subject matter for College or Junior College teaching.

**LANGUAGE**

Wayne Wonderley, Chairman of Advisers

The Master of Arts degree in Language (French, German, or Spanish) stresses improving the candidate’s competence in the subject language and literature. Requirements are:

1. Undergraduate major of 30 hours or equivalent in Foreign Language.

2. Completion of thirty semester hours of graduate study of which twenty to twenty-four are in the Department of Language. Six hours toward the requirement in Language study may be satisfied at the option of the Department by the presentation of an acceptable thesis. Furthermore, a maximum of ten hours of graduate study may be applied in appropriate cognate fields. Selection of cognate
courses is made by the adviser after determination of the candidate's specific needs and interests.

3. Oral examination over the candidate's area of concentration.

LIBRARIANSHIP

The Department of Librarianship is accredited by the American Library Association and is a member of the Association of American Library Schools. The purpose of the Librarianship curriculum is to prepare qualified college graduates for the library profession. The Librarianship curriculum involves a basic general program of studies at the graduate level in the five major areas of library science: (1) history, philosophy and background of libraries in society; (2) technical processes; (3) library resources; (4) library clientele; (5) library organization and administration. The program prepares candidates for the differentiated services in college or university, school, public and special libraries. In addition to the general admission requirements, the student must:

1. Evidence ability, on the basis of his scholastic record and personal characteristics, to do graduate work in library science.

2. Present a reading knowledge of at least one modern foreign language. This requirement may be met either by completing one academic year of study at the college level or by passing a proficiency examination.

In order to earn the Master of Arts degree in Librarianship, a student must satisfy the following departmental requirements:

1. Successfully complete thirty to thirty-four hours of approved graduate courses with a minimum of twenty semester hours in library science at the graduate level. The program is developed in conference with his graduate adviser.

Candidates without previous training in library science will need to take the Required Courses as specified in the following list plus Elective Courses in the fields of their special interest to total thirty-four semester hours.

2. Submit a satisfactory research paper required as partial fulfillment of a course requirement or, with the consent of the graduate adviser, complete a thesis for six semester hours of credit.

3. One semester of resident study or the equivalent in summer sessions.

Specialization is available in various types of library service, e.g. school libraries, and special departments in public libraries such as those serving children, the adult reader, and the young adult. Programs may also be arranged for candidates who wish to specialize in college, university or special library service such as industrial, art or music, etc.

Candidates preparing for school library service must meet the teacher certification requirements in the state in which they wish to be employed.

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Colloquium. Regular series of lectures, discussions, field trips and film demonstrations by eminent librarians, members of the staff and leaders in fields related to library interests. Required both semesters for full-time graduate students. Part-time graduate students are expected to arrange for attendance at least one semester. (No credit)

NOTE: Students who have an undergraduate minor in Librarianship may elect courses from other departments for a total of six to eight semester hours. The total number of hours required for these students is thirty instead of the thirty-four required for those with no previous library science courses.

Required Courses: Lib. 510, 512, 530 or 531, 600 and 629 or Ed. 601.

Course descriptions and courses to be chosen as electives in Library Science will be found under the listings for the Department of Librarianship on pages 135-140.

At the time of application for candidacy, the student must have completed at least two of the following courses: Lib. 510, 512 and 530.

Graduate Program for the Instructional Materials Center Specialist

Because of the increasing demand for school personnel with training in the administration of school libraries and also in the administration of audio-visual materials and equipment, the Department of Librarianship now offers a graduate curriculum for preparation of the Instructional Materials Center Specialist.

Prerequisite: Teaching certificate and one year of experience in classroom or in school library.

MATHEMATICS

The degree of Master of Arts in Mathematics extends the student's knowledge in the areas of algebra, analysis, applications, geometry, and statistics. The program permits specialization in preparing for advanced study and provides additional training for teachers of mathematics and students seeking employment in industry.

In addition to the general admission requirements, the student in the field of Mathematics must satisfy the following:

1. Complete with satisfactory grades an undergraduate major in Mathematics. If the student's undergraduate program in Mathematics does not meet approved standards, he may be required to elect additional courses or otherwise satisfy the requirements of the department.

2. Complete twenty to twenty-four hours of approved course work in Mathematics to include 630 Abstract Algebra I and 670 Real Analysis I.

3. Prepare an acceptable thesis if required by his graduate advisor and committee.

4. Present six to ten hours of credit from other related departments.
5. Present credits in at least two mathematics seminars.
6. Pass a final oral examination in his field.

MEDIEVAL STUDIES

John R. Sommerfeldt, Adviser

The degree of Master of Arts in Medieval Studies is designed to provide a broad background in medieval history, languages, literatures, philosophy and theology. The program is available to students with undergraduate majors in history, art, philosophy, music, English, German, French, Spanish, Italian, or Latin, or other preparation accepted as the equivalent by the Graduate Committee.

The requirements for the degree are as follows:
1. Before admission to candidacy, the student is expected to present (a) an elementary reading knowledge of Latin and either German or French, (b) a survey course in medieval history, and (c) course work in philosophy or religion.
2. The course work includes (a) three courses of medieval history, (b) a minimum of two courses of medieval philosophy and theology, (c) two courses of medieval literature, and (d) a course in research methods. Courses taken as an undergraduate can be counted toward these area requirements. The student must complete a minimum of 30 semester hours of graduate work.
3. The preparation of an acceptable thesis.

MASTER OF MUSIC DEGREE

Charles Osborne, Adviser

The Master of Music degree is designed for professional advancement as well as for cultural attainment. This program is an extension of the Bachelor of Music curriculum and is planned to enhance the teaching and performing ability of the student. The degree Master of Music may be obtained in any one of three areas of concentration: 1) Applied Music, 2) Theory-Composition, or 3) Music Education; i.e., the student may obtain a Master of Music degree in Applied Music, etc.

The student must successfully complete 14 semester hours in the major area in which he wishes to concentrate. In addition to a major area, a student will choose two minors from among 1) Music Education, 2) Music Literature, 3) Theory, and 4) Applied Music. The minors will consist of six semester hours each. To complete the necessary 30 semester hours of graduate credit the student will select, in consultation with his adviser, four semester hours outside of the field of music.

A comprehensive examination will be administered to the student upon entering the curriculum. The results of this test will be used to give direction to the student’s course of study. The areas in which the student will be examined are: 1) music literature and history, 2) theory, 3) applied music, 4) piano proficiency, and 5) conducting. The student’s adviser will work closely with him in regard to planning and implementing the curriculum in order that the full value and depth of the program will be realized. The right is reserved to withhold the recommendation
of a candidate for a degree if the student has not demonstrated sufficient maturation and musicianship. The student must have successfully completed the following levels or their equivalents in order to receive graduate credit in the Applied Music concentration of the Master of Music degree: Piano, H51; Voice, H95; Strings, Z31; Woodwinds, Z69; Brass, Z49; Organ, H74. The students minoring in Applied Music in the Music Education and Theory-Composition curricula must first achieve the following levels of proficiencies in order to receive graduate credit: Piano, H45; Voice, H83; Strings, Z24; Woodwinds, Z66; Brass, Z46; Organ, H74; Percussion, Z86.

The Master of Music degree curriculum is open to students with the Bachelor of Music degree or its equivalent.

**OCCUPATIONAL THERAPY**

Dean R. Tyndall, Adviser

The master's degree program in Occupational Therapy is designed to prepare students for administrative and supervisory positions in the field. In addition to meeting the general admission requirements, the candidate must have completed a bachelor's degree in Occupational Therapy or in a related field with a certificate in Occupational Therapy. A year of experience between undergraduate and graduate studies is recommended.

In order to qualify for a master's degree the student must successfully complete thirty semester hours of approved graduate courses according to the following pattern:

1. Ten hours selected from basic courses related to Occupational Therapy, i.e., Biology, Education, Psychology and Sociology. The course, Education 601, Introduction to Research in Education, is requirement in this group.

2. Fourteen hours from the following courses in Occupational Therapy: 632 Supervision of Occupational Therapy, 633 Administration of Occupational Therapy, 712 Professional Field Experience (in Organization and Administration of Occupational Therapy offered in cooperation with the Occupational Therapy Department of the Veterans' Administration Hospital, Hines, Illinois, and offered during the summer program), 630 Professional Literature, and 650 Clinical Training and Scheduling.

3. The remaining six hours may be selected with the help of the graduate adviser from the following units: Business, Psychology and Occupational Therapy.

**PHYSICS**

George Bradley, Adviser

The Master of Arts degree in physics provides both theoretical and experimental training in this field. The thirty hours of required graduate credit must include:

1. The following courses which make up twelve hours of physics open only to graduate students, namely: 622 Quantum Mechanics,
624 Statistical Mechanics, 630 Classical Mechanics, and 662 Electricity and Magnetism.

2. Twelve additional hours from the physics, mathematics, or other departments chosen with the consent of the physics graduate adviser. Only courses numbered 500 or above carry graduate credit.

3. Satisfactory completion of a Master’s thesis based on either an experimental or theoretical problem, under the guidance of a committee of the graduate faculty in physics.

The Physics Department offers three different seminar and colloquium programs which involve graduate students. 1). The regular Physics Seminar is a series of talks given bi-weekly, usually by visitors from other institutions, on topics of general interest and at a level requiring little physics background. Attendance is expected of all physics majors. 2). The Graduate Colloquium is a weekly program for graduate students and physics staff members, presented usually by members of the WMU physics staff, or visitors from other universities, on topics related to their research specialties. 3). An informal graduate-faculty seminar is conducted weekly, usually during the lunch hour, at which graduate students discuss their professional interests.

POLITICAL SCIENCE

In addition to the admission requirements of the Graduate School and the Department, a student must satisfy the following to earn the Master of Arts degree in Political Science:

1. Complete a minimum of twenty-four hours of graduate work in Political Science among the three areas of study listed below with at least four hours of credit in each:
   a. American Government and Administration.
   b. International Relations and Comparative Government.
   c. Political Theory and Methodology.

2. A thesis for six hours of credit will ordinarily be required. This requirement may be waived on recommendation of the Departmental adviser with the approval of the Graduate Committee and the head of the Department in which case a research paper will be required.

3. Complete six hours in appropriate cognate areas.

4. Before being recommended for the Degree of Master of Arts in Political Science, the student will be required to pass an oral examination. The examination will cover the Thesis or research paper, the subject matter of the student’s area of emphasis, including bibliography, and the adequacy of his preparation in the general field of Political Science.

PSYCHOLOGY

In order to qualify for a master’s degree in Psychology, a student must meet all the regular admission standards as well as those of the
Psychology Department. In general, the requirements for the degree are as follows:

1. Completion of a major or broad minor in Psychology at the undergraduate level with satisfactory grades.
2. Completion of at least eighteen hours of graduate credit in Psychology with six hours in an allied field or fields. The distribution of credit will be determined in conference with the adviser and according to the area of psychology in which the student wishes to specialize.
3. A thesis for six hours of credit will ordinarily be required. This requirement may be waived with the approval of the student's adviser.
4. The areas in which a student may specialize are these:
   a. General Experimental—a preparation for doctoral training with emphasis upon research methods and theory. The general experimental core consists of 18 or more semester credit hours. Required courses are Psychology 614, 617, 618, and 634. Elective courses are Psychology 510, 512, 595, 613, 635, 696.
   b. Industrial—For those wishing to specialize in Industrial Psychology, the following guidance is provided:
      (1) Undergraduate Level—It is expected that the following courses will have been completed as part of a major or broad minor in Psychology: Psychology 330, 432. In addition, it is to the student's benefit to have taken as many of the following courses as possible: Psychology 380, 440, 510, 516, 541 and 542.
      (2) Graduate Level—The following courses are required: Psychology 618, 634 or 635, 644, and 645. The remaining course credits may be selected from among the following: Psychology 510, 516, 541, and 542. A thesis is required of all graduate students specializing in the industrial area.
      (3) Allied Areas—It is suggested that in order to complete a minimum of 6 credit hours in an allied area or areas, courses be selected from, for example, these fields: a) Business, b) Economics, and c) Sociology. Other relevant areas may be chosen where appropriate in conference with the adviser.

   c. Clinical-Counseling Program—This is a 60-hour program designed to meet the needs of two kinds of students: those interested in doing clinical-counseling work at master's degree level of proficiency, and those interested in continuing on to a doctorate in the clinical-counseling area. Hence this is a comprehensive program covering course work in the general area of psychology plus the special area of clinical-counseling theory, research and skills.
      (1) Required courses in General Psychology area: Psychology 510, 700, 634 and/or 635.
      (2) Required courses in Clinical-Counseling area: Psychology 560, 624, 623, 661, 662, 663, 684, 685, 712, 682 and/or 683.
SOCIOLOGY AND ANTHROPOLOGY  Jerome G. Manis, Adviser

The master's degree program in Sociology is designed to (1) give students a mature understanding of the significant factors and processes of contemporary society, (2) advance the preparation of those planning to teach in the social-science field, (3) lay the foundation for more advanced graduate work in Sociology, and (4) provide professional training for a variety of occupational opportunities in government, industry, research organizations, welfare agencies and correctional systems.

In order to earn the Master of Arts degree in Sociology, a student must satisfy the following departmental requirements:

1. Have completed at least twenty-four hours of undergraduate work in the Social Sciences with a minimum of twelve semester hours in Sociology, or in equivalent course work approved by the departmental graduate adviser.

2. After admission but before applying for candidacy, pass a qualifying examination. The examination periods will be held once each semester: fall, winter, spring and summer.

3. Complete twenty to twenty-four hours of graduate work in Sociology courses selected in consultation with the departmental adviser, and six to ten hours of graduate work in appropriate cognate areas. Sociology 504 and 582, or their equivalents, are required. Sociology 580 is strongly recommended.

4. Complete an original thesis or essay, using approved methods for investigating a sociological topic. The thesis is required for students planning, and considered qualified, for doctoral studies.

5. Before receiving the master's degree, pass an oral examination on the thesis or the essay. The examination will deal with the relationship of the thesis or essay to the field of Sociology.

Center for Sociological Research

A number of departmental research and teaching assistantships are available to qualified students. Training opportunities and part-time employment are also available through the facilities of the Center for Sociological Research. The Center, first established in 1956, has conducted studies of mental illness, marital roles, race relations, group dynamics, deviant behavior and numerous other topics. Graduate students frequently participate in these studies. Additional information and application forms may be obtained from the departmental chairman or the graduate adviser.

SPEECH PATHOLOGY AND AUDIOLOGY  Robert Erickson, Adviser

The master's degree program in Speech Pathology and Audiology is designed to provide academic and practicum experiences basic to the development of increased clinical and administrative competence in the
profession of speech and hearing therapy. The master's program usually will be planned with emphasis in one of the following areas: (a) public school speech and hearing therapy, (b) clinical speech and hearing therapy, (c) audiology, or (d) special education.

In addition to meeting the regular admission standards of the Graduate School, students wishing to qualify for the master's degree in Speech Pathology and Audiology must fulfill the following requirements:

1. (a) Completion of an undergraduate major or minor in speech correction, or
   (b) Completion of an undergraduate major or minor in Psychology, Sociology, Education, or other curriculum accepted by the department, plus 12 semester hours of undergraduate courses in speech correction. Undergraduate deficiencies may be removed during the time that graduate courses are being completed.

2. Accumulation, during the final two years of undergraduate work, of a point-hour ratio of at least a B.

3. Successful completion of a personal screening interview by the director of the graduate program in Speech Pathology and Audiology.

4. Completion of the following core of required courses in Speech Pathology and Audiology: 550, 552, 555, 558, 658, 659.

5. Completion of at least four semester hours of elective courses in Speech Pathology and Audiology, to be selected from the following: 556, 559, 650, 653.

6. Students who demonstrate research aptitudes and interest are encouraged to present a thesis. Students who anticipate continued graduate work toward a doctoral degree are required to present a thesis. Six semester hours of credit are granted for completion of a thesis.

7. Students who desire to qualify for clinical certification by the American Speech and Hearing Association must complete at least 275 hours of supervised clinical practicum experience as well as the prerequisite academic course work specified by ASHA.

SPECIALIST DEGREE AND SIXTH-YEAR PROGRAMS

William P. Viall, Chairman of Advisers

The Sixth-Year Programs lead to the degree Specialist in Education and are offered in the nine areas of General School Administration, Elementary School Administration, Secondary School Administration, School Personnel Administration, School Business Management, Director of Curriculum, Guidance and Personnel Services, Special Education, and School Psychological Examiner. The degree is awarded after satisfactory completion of a minimum of 60 semester hours of graduate work beyond the Bachelor's degree.

The Specialist in Education Degree is designed to produce educational leaders who are competent persons, broadly and deeply educated,
and well-versed in the professional qualifications required of their respective educational tasks. With this in mind and considering the individual plans of each applicant, a flexible curriculum has been designed to meet the personal needs of the students. It is anticipated that most candidates for the Sixth-Year Program will have already earned Master's degrees. No student is accepted until he has completed 20 hours of graduate level work. The program, however, is conceived as a well-articulated Fifth- and Sixth-Year Program, covering a minimum of two years, or 60 hours, of graduate work. For those students entering with only 20 hours, the Master's degree may be awarded on completion of a minimum of ten additional hours if all other institutional requirements for that degree are met. The degree of Specialist in Education is awarded upon successful completion of the entire program.

The applicant for admission to the Specialist in Education Degree program must:

1. Be admitted to the School of Graduate Studies; have earned a Master's Degree or completed a minimum of 20 semester hours at a recognized graduate school with an academic average of at least 3.25 (A=4, B=3) in all graduate work; (Applicants may achieve a 3.25 average by submitting more than 30 semester hours; however, only 30 hours will count as part of the Sixth-Year program.
2. Have achieved an acceptable score on the appropriate tests of a standardized examination
3. Have demonstrated competence in English usage
4. Secure a favorable rating from a three-member interviewing team representing the School of Education prior to the completion of the first term of registration at the University
5. Present evidence of potential leadership ability.

After admission to the program, the applicant must complete the requirements of his curriculum with an overall graduate average of 3.25 or better.

The applicant must have completed at least one year of successful teaching experience prior to the completion of the program. In certain non-administrative curricula equivalent experience may be accepted.

Application for Candidacy for the Specialist in Education degree must be initiated at the end of the semester when 40 graduate hours are completed.

The minimum acceptable residence requirement for the Specialist in Education degree is a planned full-time campus load for at least one semester or two half-semesters, including courses, seminars and a supervised internship or field project.

Specialist in Education Curricula

Applicants for Candidacy in each of these curricula will be assigned a committee of three faculty members who will work with the student in planning his program, supervising his internship and field project, and recommending the degree. Each program will consist of at least
two years' work beyond the Bachelor's degree, (defined as a minimum of 60 semester hours). With the exception of the curriculum for School Psychological Examiner, these programs will include the following:

1. Twenty hours in core and related education courses
2. At least twenty hours in the major area, to include four to six hours in a field project or internship
3. Twenty hours in cognate fields such as Anthropology, Business, Economics, History, Librarianship, Political Science, Psychology, Sociology and Speech.

Titles of Specialists curricula and graduate advisers for them include:

**Director of Curricula**
*Adviser:* Dorothy McCuskey

**Elementary School Administration**
*Adviser:* James Davenport

**General School Administration**
*Adviser:* Harold W. Boles

**Guidance and Personnel Services**
*Adviser:* Kenneth B. Engle

**School Business Management**
*Adviser:* Harold W. Boles

**School Personnel Administration**
*Adviser:* William P. Viall

**Secondary School Administration**
*Adviser:* Roy C. Bryan

**Special Education**
*Advisers:* Kristen D. Juul, Joseph J. Eisenbach

**School Psychological Examiner**
*Adviser:* Stanley Kuffel

This program provides for the training of persons preparing for the position of School Diagnostician or School Psychological Examiner, as well as basic pre-doctoral study in School Psychology. Successful completion of this program is a requirement for certification as a School Psychological Examiner in the State of Michigan.

The program is designed to prepare the student in the use of the principles and techniques of psychology in the school setting. The training includes work in testing, interviewing, and psychological counseling. The student will be expected to acquire a knowledge of the deviant and exceptional child and of the basic techniques used in psychological research.
Admission requirements include the following:

1. Nine to fifteen hours of undergraduate psychology courses including Elementary Statistics and Experimental Psychology or their equivalents. Additional work to remedy deficiencies may be taken prior to application for candidacy.

2. Successful teaching experience or the evidence of potential for success in the field of education.

3. Attainment of a satisfactory score on the Graduate Record Examination and satisfactory completion of any examination that may be deemed desirable by the graduate committee.

A student may be admitted to the program either on completion of the bachelor's or master's degree. A student will be expected to apply for admission to candidacy upon the completion of twenty semester hours beyond the bachelor's degree or upon the completion of ten semester hours beyond the master's degree. It will be necessary also for the student to successfully complete a qualifying examination before admission to candidacy. This examination will be administered by the graduate committee.

In order to qualify for the Specialist degree in this field, the student must elect courses from the following groups:

I. 12 to 17 hours from the General Psychology Core including Psychology 512, 516, 614, 510 and 696.

II. 18 to 22 hours from the Clinical and School Psychology courses including Psychology 623, 624, 560, 661, 680, 681, 682 and 683.

III. 15 to 16 hours from courses outside the Psychology Department chosen in consultation with the student's adviser.

IV. 12 to 18 hours of internship to include 500 or more clock hours of supervised practice.

**Specialist in Education Degree in Subject Matter Areas.**

A program leading toward a Specialist in Education degree in Subject Matter Areas has been approved to begin the fall semester 1965. The program will involve 60 hours of study beyond the Bachelor's degree. Forty hours of that work will be done in the subject matter area in which the student wishes to teach. Nine to fifteen hours of professional work will be required. These hours will include courses in 1) The community college 2) Research 3) Psychology of college level students and 4) Seminar in college teaching. The seminar will be offered for variable credit. Each student will be expected to pass an oral examination near the end of his last semester. Students may enter the program either from a Master's or Bachelor's degree and will be expected to meet the general requirements of the Specialist degree.
SECTION III
SUMMER SESSION

Course Offerings

Six Weeks—Eight Weeks
School of Applied Arts and Sciences
George E. Kohrman, Dean

Vocational Division

Six Weeks Courses . . .

520 Principles of Practical Arts and Vocational Education 2 hrs.

The place and function of the practical arts and vocational education in the modern school; fundamental principles upon which this work is based. For teachers of agriculture, business, home economics, industrial subjects and administrators.

522 Occupational Laboratory Experience 2 hrs.

A supervised business or industrial experience program involving full-time employment for a period of at least six weeks or equivalent. Must be planned in cooperation with the business or industrial establishment involved. Experience must be in the student's major field. Prerequisite: Consent of instructor.

Distributive Education

Six Weeks Courses . . .

573 Coordination Techniques in Cooperative Education 2 hrs.

This is a study of duties and responsibilities of the coordinator. The organization and establishment of training programs, supervision of trainees on the job, development of individual training programs, establishing working relationships between the school, business, and home; and participation in extra-curricular activities in the community. Especially adapted to prospective coordinators.

Home Economics

Six Weeks Courses . . .

516 Consumer Buying 2 hrs.

Study of marketing problems and consumer credit. Students work on individual problems which concern the techniques of buying a specific type of consumer goods. A course for majors and non-majors.

520 Demonstration Techniques 2 hrs.

A study of principles and techniques for demonstration in all areas of home economics. Practice will be included. Offered for homemaking teachers, demonstration agents, and home economists in business. Elective.
Industrial Education

**Six Weeks Courses . . .**

508 Building Construction Techniques 2 hrs.

Examines modern construction methods in the area of cement, metal, electricity, wood, glazing and other related areas as applied to home building. It also studies construction methods both in custom building and in prefabrication.

538 Problems in Metalworking 2 hrs.

Practical laboratory experiences in forging, foundry, heat treating, machine shop, and arc and acetylene welding. Course will emphasize methods of selecting and developing course materials for junior and senior high school students. Course content will be adapted to meet the needs of individual students.

540 Industrial Arts for the Elementary School 2 hrs.

Deals with the problems of organizing and teaching Industrial Arts for the elementary grades. Course materials, techniques, and materials in the industrial and craft areas will be stressed.

570 Arts and Crafts Techniques 2 hrs.

Advanced laboratory experiences in the fields of internal plastic carving, leather work, model work, archery, photography and related crafts in conjunction with a study of current technical literature in these areas. Course content will be adapted to individual needs.

573 Mechanics and Conditioning of Equipment 1-2 hrs.

A study of the cutting mechanics of wood, metal and synthetic materials. Practice in installation, adjustment, preventive maintenance and conditioning of power equipment will be included. Particular emphasis will be given the relationship between proper installation and condition to efficient machine operation.

588 Advanced Power Laboratory 2 hrs.

Designed to enable teachers to add a power mechanics area to existing Industrial Arts Programs. The course will include a study of internal combustion engine operating principles. Laboratory experiments will be conducted in mechanical and hydraulic power transmission. The teachers will investigate and prepare reports of recent developments in new types of internal and external combustion power units. The school shop organization, equipment and safety requirements unique to this area of instruction will be studied. A course of study including text materials, charts and film will be developed. Instructional materials will be designed illustrating scientific principle.
Open to Graduates Only

641 Trends in Industrial Education 2 hrs.
A study of current literature in the field. Research studies will be reviewed. Commercial and industrial publications will be studied to determine their place in the school shop program.

643 Measurement in Industrial Education 2 hrs.
A study of the techniques involved in the preparation and use of teacher-constructed written and practical tests. Attention will be given the interpretation of test results and the evaluation of student achievement.

671 Industrial Education Materials 2 hrs.
A study of all the basic materials of industry with special emphasis on new materials. Written reports on the material will be based on a review of government studies, handbooks, industrial publications and scientific reports. Each material will be evaluated as to its working characteristics and its possible application in the school shop.

Paper Technology

Special Schedule . . .

540 Principles and Practice of Coated Paper Manufacture 2 hrs.
Lectures on the formulation, preparation and application of pigmented coatings to paper. Lectures on rheology, on control methods, on finishing methods and on printability. Laboratory experience in formulation, methods of application, testing and calendering. Experimental runs on pilot coater. Visits to nearby mills engaged in coating paper and paperboard. (Three weeks sessions.)
Accounting

Six Weeks Courses . . .

512 Cost Accounting 3 hrs.
The relation of cost accounting to management for control; general principles involved in constructing a cost system; distribution of cost-materials, labor, and burden; cost records; operating reports; standard costs and budgetary control. Prerequisite: 211.

598 Readings in Accounting 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses.

Business Education

Six Weeks Courses . . .

598 Readings in Business Education 1-4 hrs.
A series of directed readings in the area of Business Education. Prerequisite: Consent of department head.

Open to Graduates Only

680 Principles of Business Education 2 hrs.

682 Curriculum in Business Education 2 hrs.
Principles, practices and problems involved in the evaluation and construction of business curricula.

688 Improvement of Instruction in Bookkeeping in General Business Subjects 2 hrs.
A study of the latest research findings, materials, teaching procedures, tests and measurements, and possible future developments in the business subject-matter of this field.

689 Organization and Teaching of Office Practice 2 hrs.
A consideration of aims and content of office-practice course in the secondary school, with plans and techniques for organizing and teaching the subject-matter of the course and its laboratory material.
General Business

Six Weeks Courses...

555 Electronic Data-Processing 3 hrs.
Examination of current literature in electronic data processing with special emphasis on systems analysis, applications of computers to business problems and feasibility studies. Programming electronic computers in FORTRAN and other languages.

Management

Six Weeks Courses...

550 Management Problems 3 hrs.
An opportunity to approach business from the case-study method by working solutions to actual management problems. (Prerequisite: Senior standing.)

551 Administrative Behavior 3 hrs.
A course designed to integrate the contributions and implications of the behavioral sciences to modern business practice to promote and maintain effective human relations for the individual and the group. Extensive use of cases and conference methods is made.

598 Readings in Management 1-4 hrs.
Directed individual study of bodies of knowledge not otherwise treated in departmental courses. May be repeated for credit by permission of Department Head.

Open to Graduates Only

600 Seminar in Management 3 hrs.
Intensive problem solving in advanced management topics under simulated conditions of a business conference, including the preparation of a major staff report. Consent of instructor required. May be repeated for credit by permission of Department Head.

Marketing

Six Weeks Courses...

598 Readings in Marketing 1-4 hrs. To be arranged
Directed individual study of bodies of knowledge not otherwise treated in departmental courses.
School of Education

James H. Griggs, Dean
Roland S. Strolle, Assistant Dean

Education

Six Weeks Courses . . .

508 Parent Education 2 hrs.
Places major emphasis on home problems which have educational implications for the child. Parent-teacher relationships, council programs, and cooperative efforts for improvement of education in home and in school are studied.

510 The Elementary Curriculum 2 hrs.
A consideration of content and procedures to adapt experiences of pupils in elementary schools to modern conditions and to child needs and interests. Individual or committee reports concerning the improvement of various aspects of the elementary school curriculum will be prepared.

520 The Junior High School 2 hrs.
A detailed consideration of the basic concepts underlying an effective junior high school program. Study of the development and purposes of the junior high school; curricular organization and problems; co-curricular activities; instructional materials.

521 Practicum in Special Education 2 hrs.
This course consists of supervised tutoring of exceptional children with learning problems, such as the mentally retarded, perceptually handicapped and emotionally disturbed. Educational evaluation, teaching materials and techniques, and management of emotional and social aspects of the learning process are included in the course content. Regular clinical case conferences directed by the instructor and members of the institutional staff will be held.

530 Education of Exceptional Children 2 hrs.
Deals with the problems and methods involved in the adjustment and training of exceptional children in the schools—the mentally retarded, the gifted, the crippled, the deaf, the blind, the emotionally unstable and the delinquent.

532 Mental Deficiency 2 hrs.
The psychology and pathology of mental deficiency including causation, diagnosis, classification, prognosis and therapy at all levels.
533 Education and Control of the Mentally Handicapped 2 hrs.
Deals with roles of courts, institutions, schools and other agencies in control, education and custody of the mentally handicapped.

534 Methods and Materials for Mentally Handicapped Children 2 hrs.
Principles of learning and instructional practices applicable to mentally handicapped children. Special attention is given to problems of the mentally retarded child with elementary curricular materials.

542 Therapeutic Care of Crippled Children 2 hrs.
A study of therapies, services and orthopedic appliances necessary for the care, education and rehabilitation of crippled children. Identification of crippling conditions and their management in home, school and community. Lectures, demonstrations, clinics by physicians, physical and occupational therapists.

548 Audio-Visual Education 2 hrs.
Acquaints teachers and administrators with the principles and practical uses of multi-sensory aids to education, including field trips, machines and creative materials.

549 Production of Instructional Materials 2 hrs.
Provides many laboratory experiences in making such instructional materials as: bulletin board displays, charts, wet and dry mounting of pictures, film strips and 2” x 2” slides, silk screen process, magnetic boards, handmade slides, mimeograph techniques, etc. Opportunity will be given for students to work on those materials which interest them.

555 Alcohol Education 2 hrs.
Deals with problems of alcohol education in the school and community, with special emphasis on teaching methods and procedures, relationships with governmental and social agencies, and administration of program.

580 Principles and Philosophy of Guidance 2 hrs.
Basic introductory courses for all elementary and secondary teachers. A thorough investigation of the democratic philosophical concepts underlying guidance service programs; a survey of the history and principles of guidance; an overview of guidance services.

581 Interpretation and Use of Tests in Guidance 2 hrs.
(Service course for non-counseling majors)
Designed to familiarize students with various psychological tests and scales that may be used in school guidance programs. Tests are taken and scored by students, and the results are interpreted and evaluated.

582 Occupational and Educational Information 2 hrs.
Discussion of theories of occupational and educational choice stressing knowledge of sources, use, evaluation and techniques of imparting
occupational and educational information including college choice, loans, fellowships, scholarships and grants in education.

584 Elementary School Guidance 2 hrs.
(Required for elementary school counselors, and a service course for non-counseling majors)

Designed to give teachers, administrators and guidance workers an understanding of principles and techniques of guidance programs in elementary schools.

585 Mental Hygiene of Childhood and Adolescence 2 hrs.
Deals with the problems of emotional adjustment and maladjustment in childhood and adolescence.

587 Educational Therapy in Reading 2 hrs.
A study is made of the psychological, sociological and physiological factors affecting children's reading ability, together with laboratory application of such knowledge in the prevention, diagnosis and treatment of reading problems. Open only to experienced teachers by permission of the instructor.

588 Psychopathology of Childhood 2 hrs.
A comprehensive study of the causes, manifestations, treatment and prognoses of psychiatric conditions in children suffering from neuroses, psychoses, schizophrenia, behavior disturbances, psychopathic personality disorders, organic malfunctioning, sexual deviations, etc. The learning difficulties and educational problems presented by emotionally disturbed children. Terminology and concepts needed for an understanding of mental illness and for effective communication with members of related psychiatric professions.

591 Braille and Other Communication Methods 2 hrs.
Acquaints the student with the basic rudiments of Braille reading and writing. Familiarization with other means of communication used by the blind.

592 Education of the Blind and Partially Sighted 2 hrs.
An overview of the education of visually handicapped child. An introduction to the literature, history, principles, practices and problems in the field, including curricular and methodological adaptations of various educational programs.

Open to Graduates Only

601 Introduction to Research 2 hrs.
An introduction to the nature and methods of research, with special emphasis upon the practical application of research findings to problems in each student's area of major interest.
602 The School Curriculum

Educational programs for children and youth, with emphasis on principles and problems of curriculum development common to all levels of instruction.

603 Foundations of American Education

A study of American education as affected by the great traditions and movements of Western culture. Consideration is given to historical, socio-economic and philosophical factors in the interpretation of modern educational issues and the solution of present-day educational problems.

604 Educational Psychology

A study of the forces which motivate behavior and affect the learning process, with particular reference to problems of growth, development of meanings and individual differences. Provisions are made to meet the needs of students with varying backgrounds in psychology.

610 Guiding Child Development in the Elementary School

Designed to help nursery, kindergarten and elementary school teachers gain an understanding of the manner in which skills, information, attitudes and behavior patterns are acquired and modified. The contributions of each curricular area, such as: language, arts, arithmetic, science, social studies, health, etc., are stressed with emphasis on suitability of experience for different stages of growth, instructional practices and appropriate procedures of evaluation.

614 Elementary School Administration

Deals with problems confronting the elementary school principal, such as organization of the school program, parent and community relationships, personnel problems, discipline, evaluation and the like.

615 Seminar in the Teaching of Reading

Designed to acquaint teachers, reading specialists and administrators with the current literature, research, methods and materials used in teaching children how to read. Special emphasis is placed on reading in relation to other aspects of language and on reading in the content fields.

621 The Secondary School Curriculum

Covers modern practices and recent emphases and trends in subject areas of the secondary school curriculum. Prerequisite: 502 The School Curriculum or equivalent.

624 Secondary School Administration and Supervision

Designed for superintendents, principals and experienced teachers interested in administrative matters. Makes detailed study of the general problems of organization, supervision and management of the high school.
648 Seminar in Instructional Media and Management 2 hrs.

Designed specifically for teachers and administrators who wish to concentrate on an intensive study in one or more of the instructional media including: language laboratories, teaching machines, instructional television, conventional audio-visual media, etc., and/or organizational and administrative management of instructional media as they pertain to school systems. Limited to 15 students. Consent of instructor required.

652 Comparative Education 2 hrs.

Provides an analysis of selected educational systems throughout the world. The goals, organizational structure, curricula, and methods of education are examined in relation to the salient features of each culture, and in comparison with the American educational system. Not offered 1964-65.

660 Principles of Educational Administration 2 hrs.

The philosophy and principles underlying school administration including governmental control, school plant, finance, personnel and the internal organizations. Presupposes a rudimentary knowledge of administration and some practical field experience.

665 Financial Aspects of School Administration 2 hrs.

Considers school expenditures, sources of revenue, techniques of borrowing, bonding, tax allocations, state aid formulas, accounting procedures and similar financial problems facing school administrators.

667 Administration of School Personnel 2 hrs.

Problems related to teaching and non-teaching personnel in the public schools. Consideration given to policies and procedures relating to selection, assignment and promotion of personnel; orientation of new staff; salary schedules; retirement; tenure; in-service education; teacher evaluation; teacher organizations; and professional ethics.

668 School Law 2 hrs.

Focuses attention on basic legal principles, on the interpretation of school legislation, and on the legal responsibilities facing the administration, the teacher, the school board, and the parent.

669 Supervision of Student Teaching 2 hrs.

Deals with the significance of student teaching in the pre-service education of teachers, the role of the supervising teacher, and the problems associated with providing high quality student teaching experiences. Many types of student teaching programs and their components of planning, evaluation, supervisory conferences and follow-up are analyzed.
670 Directed Teaching 2-6 hrs.

Open to graduate students who have completed the major portion of professional courses required for certification.

680 The Personnel Worker and His Role 4 hrs.

A basic introductory unit encompassing a thorough investigation of democratic philosophic concepts undergirding Guidance and Personnel programs, and a survey of the history and principles of Guidance and Personnel Services. In addition, the student will be involved in group counseling which may afford an opportunity for him to progress in self-understanding and self-evaluation. Prerequisites: 1. Acceptance by the Graduate School, 2. Acceptance by the Guidance and Personnel Services curriculum area, 3. Acceptance by the Education Department.

683 Theory and Laboratory Practice in Counseling 4 hrs.

An advanced unit designed to synthesize counseling theory and counseling laboratory experiences. Learning activities, such as tape recordings, video tapes, role playing and actual counseling sessions, will be provided to help make theoretical constructs concrete and practical. The laboratory experience will involve counseling contacts which expose the candidate to various aspects of the counseling relationship. Prerequisites: Education 680, and 681 or 682.

684 Supervised Practicum and Professional Experience 4 hrs.

A unit designed to continue and enlarge upon the laboratory experiences initiated in Education 683. In addition, there will be a supervised professional experience which can be effected at Western Michigan University Counseling Bureau, a public school setting, or governmental and social agency settings (e.g. Juvenile Court) which will be designed to provide the student with supervised practical experience in his major vocational area of interest. Prerequisites: Education 680, 681 or 682, and 683.

688 Evaluation in Education 2 hrs.

Designed to develop skills, techniques, attitudes and understandings involved in the measurement and evaluation of individual learning and development as well as in the appraisal of the total school program. Emphasis is placed on the construction, use and interpretation of formal and informal evaluative devices, and upon the development of a philosophy of evaluation as an integral part of learning.

691 Advanced Counseling Practicum 2 hrs.

A continuation of Education 689 for those who have successfully completed the requirements and are recommended for depth study.
**Eight Weeks Courses . . .**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>530</td>
<td>Education of Exceptional Children</td>
<td>2 hrs.</td>
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<tr>
<td></td>
<td>Deals with the problems and methods involved in the adjustment and training of exceptional children in the schools—the mentally retarded, the gifted, the crippled, the deaf, the blind, the emotionally unstable and the delinquent.</td>
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<tr>
<td>532</td>
<td>Mental Deficiency</td>
<td>2 hrs.</td>
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<td></td>
<td>The psychology and pathology of mental deficiency including causation, diagnosis, classification, prognosis and therapy at all levels.</td>
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<tr>
<td>534</td>
<td>Methods and Materials for Mentally Handicapped Children</td>
<td>2 hrs.</td>
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<td></td>
<td>Principles of learning and instructional practices applicable to mentally handicapped children. Special attention is given to problems of the mentally retarded child with elementary curricular materials.</td>
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<tr>
<td>580</td>
<td>Principles and Philosophy of Guidance</td>
<td>2 hrs.</td>
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<td></td>
<td>Basic introductory course for all elementary and secondary teachers. A thorough investigation of the democratic philosophical concepts underlying guidance service programs; a survey of the history and principles of guidance; an overview of guidance services.</td>
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<tr>
<td>585</td>
<td>Mental Hygiene of Childhood and Adolescence</td>
<td>2 hrs.</td>
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<td></td>
<td>Deals with the problems of emotional adjustment and maladjustment in childhood and adolescence.</td>
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<tr>
<td>603</td>
<td>Foundations of American Education</td>
<td>2 hrs.</td>
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<td></td>
<td>A study of American education as affected by the great traditions and movements of Western culture. Consideration is given to historical, socio-economic and philosophical factors in the interpretation of modern educational issues and the solution of present-day educational problems.</td>
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<tr>
<td>604</td>
<td>Educational Psychology</td>
<td>2 hrs.</td>
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<td></td>
<td>A study of the forces which motivate behavior and affect the learning process, with particular reference to problems of growth, development of meanings and individual differences. Provisions are made to meet the needs of students with varying backgrounds in psychology.</td>
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<tr>
<td>635</td>
<td>Counseling Parents of Exceptional Children</td>
<td>3 hrs.</td>
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<td></td>
<td>This course explores the dynamics of parental reactions to their handicapped children. Techniques of dealing with stress situations in the home, in the school, and in the community are developed. The students are given opportunities of working with parents of exceptional children and helping them in coping with the problems they face.</td>
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<tr>
<td>636</td>
<td>Seminar in Special Education</td>
<td>2 hrs. Fall</td>
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<td></td>
<td>This course is designed for experienced teachers to examine in depth the social, emotional and educational problems of the children with whom they work and the multiple approaches utilized in meeting their needs.</td>
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</tbody>
</table>
640 Organization and Administration of Special Classes and Services for Exceptional Children 2 hrs.

Principles and practices of organization and administration of special programs at state, county, and local levels will be considered, including legal aspects of state aid.

681 Organization and Administration of Student Personnel Services 4 hrs.

A unit emphasizing the organization and administration of Student Personnel Services at the local, state and national level. Competencies will be developed in the use of questionnaires, school records, evaluations, autobiographies, anecdotal records, sociometrics, rating scales, case studies and conferences, and parent-teacher conferences. Students will study various psychological tests and scales used in Guidance and Personnel Services programs, and will administer, score and interpret these devices. Prerequisite: Education 680.

693 Counseling of the Blind 2 hrs.

Acquaints the intern with techniques and procedures used in testing and counseling blind individuals.

694 Orientation and Mobility 2 hrs.

Techniques will be acquired under conditions simulating blindness. Emphasis will be placed on the use of the remaining senses, common objects, the muscles and the skeleton in activities of daily living.

695 Advanced Orientation and Mobility 4 hrs.

Orientation and mobility techniques and the proper methods of incorporating them into a person's method of travel. Guided observation and practice with blinded individuals ranging in age from the pre-kindergarten through the aged in various environments, such as the: school, residence, community, and work situations.

696 Internship in Orientation and Mobility (Hines V. A. Hospital) 8 hrs.

The intern, under close supervision of a Master Therapist, will instruct blinded children and adults in all phases of orientation and mobility. The intern will be afforded the opportunity to work with all levels of students in various environments. He will aid the Master Orientator in working with blinded individuals who have additional severe disabilities.

Physical Education For Men

Six Weeks Courses . . .

561 Problems in Interscholastic and Intercollegiate Athletics 2 hrs.

Relationship of athletics to education is considered. Problems in the organization of an athletic program including eligibility, finance, liability, transportation, safety, facilities and equipment will be discussed.
Open to Graduates Only

630 Advanced Techniques in the Coaching of Football 1 hr.

Considers problems in the coaching of fundamentals, the organization of practice periods and offensive and defensive strategy. Prerequisite: Either coaching experience or completion of an undergraduate course in the sport concerned.

631 Advanced Techniques in the Coaching of Basketball 1 hr.
The same as 630.

632 Advanced Techniques in the Coaching of Baseball 1 hr.
The same as 630.

633 Advanced Techniques in the Coaching of Track 1 hr.
The same as 630.

634 Advanced Techniques in the Coaching of Minor Sports 2 hrs.

Problems and coaching techniques in minor sports such as wrestling, tennis and golf. Rules and regulations governing meets and play are discussed. Actual participation in the activities is required. Either coaching experience or completion of an undergraduate major or minor in the field of Physical Education is a prerequisite.

650 Tests and Measurements in Physical Education 2 hrs.

Acquaints students with the theory, selection, construction, administration and interpretation of appropriate tests in the field. Class activity will include study and discussion of selected tests, application, scoring, interpretation and construction of tests.

660 Current Studies in the Administration of Physical Education 2 hrs.

For administrative officers as well as for teachers and directors of physical education. Includes a study of representative programs of physical education and a discussion of standards for evaluating such programs.

671 Camp Administration 2 hrs.

The organization and administration of camps and their program requirements and standards. Consideration is given to philosophy and objectives, personal skills in camp activities and methods of teaching them. Visits to camps are made and out-of-door activities are experienced.

672 Methods and Materials in Recreation 2 hrs.

Best methods and materials for the teaching and organization of recreation activities. Activities used in recreation will be presented. Opportunities for organization and actual participation and leadership will be given. This course is open to all graduate students.
Physical Education For Women

Six Weeks Courses . . .

514 Materials and Methods for School Health Education 2 hrs.

Lectures and discussion emphasizing health supervision of school children, health teaching in various grades, and the interrelation of this teaching with that of other subjects. Attention is given to school and community cooperation in the school health program. Prerequisite: Consent of instructor. Not to be given until summer 1965.

Open to Graduates Only

640 Rhythms in Elementary Education 2 hrs.

A study of the rhythmic movement needs of the elementary school child—(a) suggested methods of teaching through which children are stimulated to create their own ways of doing—(b) folk and social dancing as outgrowths of movement fundamentals—(c) teaching examples, sample lesson plans and up-to-date reference sources. The course will consist of lecture and activity classes.

641 Physical Education for the Elementary Classroom Teacher 2 hrs.

A study of the developmental needs of the child in terms of physical activity; the role of physical education in childhood education; the responsibility of the classroom teacher in this area; demonstrations and practice in teaching activities.
Candidates for the Master of Arts degree may elect to write a thesis in their field of specialization under the supervision of one or more faculty advisers. A student may elect this course in units of from two to six hours. This selection may not be made in more than two units and must be made within a calendar year. Application forms must be submitted prior to registration for the thesis. To be arranged.

Designed for highly qualified graduate students who wish to pursue research projects under the direction of a member of the graduate faculty. May be elected in any department or division with permission of the student’s graduate adviser and of the member of the graduate faculty under whom the student desires to work. (Application forms must be obtained at the Graduate Office and completed prior to the registration for the course.) To be arranged.

May be elected in any department or division with permission of the student’s graduate adviser, Dean of the School of Graduate Studies, and the faculty member under whom the student desires to work. Prerequisite: Acceptance for Candidacy for the Master’s Degree, and completion of Graduate Studies 710 with superior accomplishment. (Application forms must be obtained at the Graduate Office and completed prior to the registration for the course.) To be arranged.

Designed for superior graduate students who wish to pursue internships or apprenticeships in off-campus activities in industries, institutions or field work. May be elected in any department or division with permission of the student’s graduate adviser, a faculty sponsor and the Coordinator of Professional Field Experiences. Prerequisite: An outline for the purposes of the student’s internship or apprenticeship. (Application forms and information about established programs must be obtained at the Graduate Office or from the adviser.) See page 83 for description of organized programs. To be arranged.
Librarianship

Six Weeks Courses . . .

510 Selection of Books and Related Materials 3 hrs.

512 Reference Service 3 hrs.
Study and evaluation of basic reference and bibliographic sources in the various subject fields. Critical examination of the publications of governmental agencies, societies and institutions especially as reference sources. Attention given to organization and methods of reference services.

*516 Elementary School Library Materials 2 hrs.
Problems in the selection and evaluation of books, periodicals, films, recordings and other materials for children with special emphasis on the content areas in the elementary school curriculum. Methods of stimulating interest in reading with attention to the retarded as well as the gifted child. For teachers, parents and librarians and others who work with children. Prerequisite: Children's Literature 282 or equivalent.

520 Field Assignment Seminar 2 hrs.
An assignment in selected cooperating libraries for the purpose of giving the student experience in the organizational and administrative activities in specific types of libraries as basis for understanding their function and the principles underlying policy. The assignment may precede the opening of college or may be carried on during the term. Laboratory period for discussion of problems is held throughout the term.

530 Introduction to Classification and Cataloging 4 hrs.
Introduction to the principles of cataloging and classifying the book collection. Includes study and practice in making the dictionary catalog and in classifying according to the Dewey Decimal Classification scheme. Students are taught to use the unit card system and are given practice in assigning subject headings, in adapting Library of Congress and Wilson printed catalog cards, and in cataloging non-book materials.

*542 Reading Interests of Young Adults 2 hrs.
Study of the fields of literature suited to the interests of young people. Students are given opportunity through wide reading to develop principles and standards for the selection of the book collection. Includes an introduction to methods of stimulating broader reading interests and of conducting group book discussions with young people. Open to students in the Education Department and to others who expect to work with youth.
Open to Graduates Only

600 Foundations of Librarianship 2 hrs.
Gives the student professional background through study of the historical development of the library, European and American; the function of the modern library and its contribution to society; current trends in librarianship and current library literature.

612 Subject Bibliography: The Humanities and Social Sciences 3 hrs.
A study and evaluation of the bibliographical sources in the social sciences and the humanities. Each student will be expected to compile a bibliography on a topic of his choice. Prerequisite: an introductory course in Reference. 612 need not precede 613.

614 Government Publications 3 hrs.
Study of city, state and federal documents and those of selected international agencies such as the United Nations. Problems of acquisition, organization and use of such collections in various types of libraries. Prerequisite: 512 Reference Service or equivalent.

620 Public Library Service 2 hrs.
Origin and development, purposes and functions of the tax-supported public library (county and regional) in a democracy. Relation to other educational units in the community; distinctive problems and practices in public library organization and administration. Prerequisite: Library Organization and Administration or equivalent.

627 Administration of the Instructional Materials Center 3 hrs.
Presentation of the single agency concept of multi-media instructional materials (school library plus audio-visual center) and the educational role of mass communications (language laboratory, educational television, etc.) Techniques for organization and administration, distribution and accessibility within the individual school or within a school system. Use and care of printed materials, non-book materials and equipment. Laboratory work and field trips.

629 Library Research 3 hrs.
Evaluation of library studies and their influence on library organization, administration and services. Opportunity for investigation and research in current problems in public, college or school libraries.

648 Adult Education Methods in Libraries 2 hrs.
Function of the library in the continuing education of adults; relationship to other adult education agencies. Introductory leadership training and development of techniques in group work, book discussions, and film forums.

650 Advanced Seminar in Librarianship 4 hrs.
Analysis and study of specific problems in library practice. Lecture, field trips and resource consultants.

*Open to students in other departments.
School of Liberal Arts and Sciences
Gerald Osborn, Dean

Liberal Arts 504  Foreign Studies Seminar—East Africa  1-6 hrs.
Seminar in East Africa in the Social Sciences: Students who complete the seminar may receive credit in the departments of Economics, Geography, History, Political Science or Sociology if the credit is approved by the head of the department prior to registering for the seminar.

Liberal Arts 504  Foreign Studies Seminar—Yugoslavia  6 hrs.
Seminar in Yugoslavia in the Social Sciences: Students who complete the seminar may receive credit in the departments of Economics, Geography, History, Political Science or Sociology if the credit is approved by the head of the department prior to registering for the seminar.

Social Studies

Six Weeks Courses

500  Teaching of the Social Studies  3 hrs.
Teaching of the social studies in the Junior and Senior High School. Definition of objectives. Selection, organization, and development of content materials. Study of the procedures and problems of effective teaching in the social studies.

Science

Six Weeks Courses

Open to Graduates Only

610  Science for Elementary Teachers  2 hrs.
Indicates the part played by science experiences in the development of children, acquaints teachers with types of science content and teaching procedures suitable in elementary education.

Art

Six Weeks Courses

550  Painting (Water Color)  2 hrs.
The study of composition, color value, and technique. Prerequisite: 161, 163, or consent of instructor.
Open to Graduates Only

640 Workshop in Art for Elementary Teachers 2 hrs.
Provided the foundations of art for elementary teachers who have little or no work in the area. Emphasizes handwork and use of scrap material.

642 Studio Course in Art 4 hrs.
Advanced art problems or projects creatively conceived and executed to fulfill student or college needs; such as sculpture and murals.

643 Studio Course in Art 2 hrs.
A continuation of 642. To be arranged.

Biology

Six Weeks Courses . . .

542 Entomology 2 hrs.
A general study of insects, their structure, classification, life histories, ecological relationships, economic importance and methods of control. Prerequisite: at least a minor in biology.

559 Radiation Biology 3 hrs.
The study of the fundamentals of radiobiology including isotope technology, radiation measurements, radioactive decay, radiation and interaction in living matter, and health and safety regulations in the laboratory. Prerequisite: a minor in chemistry and consent of instructor.

Open to Graduates Only

652 Plant Ecology 2 hrs.
A study of plant communities and their relationship to the physical and biotic environment, with particular reference to their development through succession. Prerequisite: at least a minor in biology.

Chemistry

Six Weeks Courses . . .

520 Advanced Analytical Chemistry 3 hrs.
The theory and technique involved in the more complex separations and determinations in quantitative analysis. Modern instrumentation and such physiochemical methods as spectrophotometry, colorimetry, chromatography, and potentiometry are discussed. The laboratory work is an application of the above techniques. Prerequisites: 531 and 222.
580 History of Chemical Theory

The history of chemical theory in which the evidence for the theories is critically presented. Prerequisite: 24 hours of college chemistry, or consent of Head of Department.

Open to Graduates Only

613 Current Developments in Chemistry 2 hrs.

Five or six new developments selected from significant advances in chemistry will be considered. Course content will vary from year to year with growth of the science. Prerequisite: 16 hours in chemistry.

Economics

Six Weeks Courses . . .

590 Special Problems in Chemistry 2 hrs.

Advanced students who have completed certain basic work in chemistry may select a special problem in the fields of analytical, organic, bio or physical chemistry. Prerequisite: 24 hours of chemistry and consent of Head of Department. Given on request.

502 Modern Economics 3 hrs.

A one semester survey course designed for students who do not intend to major or minor in economics and hence do not take 200 and 201. The basic economic principles necessary for a better understanding of present-day economic problems are illustrated by current developments. This course should be of value to prospective teachers, graduate students, and others who have the opportunity for only one course in economics. Credit in either 200 or 201 will preclude credit in 502.

512 Collective Bargaining 3 hrs.

An analysis of the major problems in present-day collective bargaining including the negotiation of collective agreements, the practical aspects and the economic implications. Prerequisite: 510, or the consent of the instructor.

546 Public Utilities 3 hrs.

The nature and problems of the public utility industries and the reasons for and methods of government regulation. Prerequisite: Principles of Economics 200, 201.

Open to Graduates Only

612 Labor Union Structure and Practice 2 hrs.

An analysis of the government and operation of American labor unions with particular reference to the problems of union leadership,
disciplinary procedures, membership control and the economic and social consequences of these practices.

Eight Weeks Courses . . .

504 Industrial Structures and Competition 3 hrs.
A logical continuation of Price Theory 503. An appraisal of those parts of extant price theory which are most directly applicable to the industrial sector of the economy. The interest of this course will center on the areas where markets are characteristically monopolistically, competitive or oligopolistic. Prerequisite: Price Theory 503 or the consent of the instructor.

English

Six Weeks Courses . . .

531 The Age of Chaucer 3 hrs.
A study of Chaucer's major poems in their historical and literary context. Prerequisite: 210.

534 Neo-Classical Literature 3 hrs.
English literature 1660-1730, with major emphasis on Dryden, Pope, and Swift. Prerequisite: 210.

537 Victorian Literature 3 hrs.
Readings emphasizing Carlyle, Mill, Dickens, Thackeray, Tennyson, Browning, and Arnold. Prerequisite: 210.

566 Creative Writing Roundtable 3 hrs.
Writing of poetry and fiction, intended for teachers and advanced students.

574 Structure of Modern English 3 hrs.
A study of the evolution of modern syntax.

Open to Graduates Only

622 American Literary Themes 2 hrs.
A study of the "search for a subject" evident in the works of selected 19th century American authors.

644 The Novel: Form and Technique 3 hrs.
An examination of the significant forms and techniques employed in the novel from its prototypes through its more recent development.

660 Methods of Research in English 3 hrs.
Practice in the efficient use of library resources for studies in literature and language. Prerequisite: permission of graduate English adviser.
680 Teaching of High School English 2 hrs.
A study of recent theories and methods of teaching literature and language in the high school.

Geography & Geology

Six Weeks Courses . . .

540 Political Geography 2 hrs.
Study of the resources, people, and geographic-political problems of the various nations and empires of the world from the point of view of the reciprocal relations involved. Prerequisite: 105.

History

Six Weeks Courses . . .

518 United States Foreign Policy 3 hrs.
The formation and evolution of United States foreign policy from the beginnings of the republic to the present time.

533 The United States, 1929 to the Present 3 hrs.
A continuation of course 532; the New Deal, the coming of World War II, the war and its impact, America's role in the post-war world. Prerequisite: course 211 or consent of instructor.

598 Independent Reading in History 2 hrs.
A student desiring to acquaint himself, through reading, with some field of history not covered in regular courses may register for this course by presenting a statement of approval signed by the Chairman of the Department's Honor Committee and the staff member under whose supervision he wishes to read.

Open to Graduates Only

626 Seminar in American History to 1865 2 hrs.
Intensive exploration of selected topics in this field, culminating in the preparation of a bibliography and a paper. (Subject: religious dissent)

662 Studies in Russian History 2 hrs.
Lectures and reading on rationalities in the U.S.S.R. The critical use of historical materials in the preparation of papers.

Eight Weeks Courses . . .

562 Europe, 1914 to 1945 3 hrs.
A study of the origins and character of World Wars I and II. Special attention is given to the Great Depression, Fascism, and Communism.
580 China Since 1912 3 hrs.

Intensive studies of the impact of the West on China before and after the Kuomintang Revolution in 1912, the period of transition from Nationalist to Communist China, and the origins and growth of Communist China, its impact upon world peace, and its aims and aspirations.

592 The Literature of History 2 hrs.

The two-fold purpose in reading selected writings of great historians is to develop (1) standards for evaluating approaches, the use of sources and the handling of controversial matters and (2) appreciation of good history.

598 Independent Reading in History 2 hrs.

A student desiring to acquaint himself, through reading, with some field of history not covered in regular courses may register for this course by presenting a statement of approval signed by the Chairman of the Department's Honors Committee and the staff member under whose supervision he wishes to read.

Open to Graduates Only

667 Studies in Recent European History 3 hrs.

Through lectures, readings, reports, and discussion the subject of fascist Europe will be explored in depth.

Language

Six Weeks Courses . . .

502 Masters of Contemporary French Thought 2 hrs.

Deals with writers whose ideas challenge the thinking of contemporary society, such as Mauriac, Malraux, Sartre and Camus.

512 Development of German Thought 2 hrs.

This course is a study of the development of Germany and the German national character. It will include a study of selected authors on history, philosophy and pedagogy, as well as German literature in translation. There is no foreign language prerequisite.

580 Modern Language Instruction 2 hrs.

For prospective teachers of French, German, or Spanish in the high school and elementary school. Problems common to the three languages are considered. The bases for the course are the principles underlying language learning and current methodology and practice.
Mathematics

Six Weeks Courses . . .

506 Programming for Computers
3 hrs.

Designed to give preparation in the organization and general use of high speed computing machines used in scientific and engineering computations. Programs will be prepared for problems such as quadratic equations, exponential, correlation, multiplication of matrices, inverse of a matrix, solution of polynomials, simultaneous equations, numerical integration, and solution of a differential equation. In addition to the three class meetings per week, one laboratory session will be held each week. Prerequisite: 223 or equivalent.

530 Vectors and Matrices
3 hrs.

Properties of n-dimensional vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: 380 or equivalent (330 recommended).

560 Mathematical Statistics
3 hrs.

Probability spaces, mathematical expectation, moment generating functions, some special distributions of the discrete and continuous type, sampling theory, independence, statistical inference, transformations of variables. Prerequisite: 380 or equivalent.

570 Advanced Calculus
3 hrs.

This course constitutes a further study of limits and continuity, ordinary and partial derivatives, functions of several variables, the definite integral and improper integrals, beyond that covered in the first year's work in calculus. Prerequisite: 380 or equivalent.

Open to Graduates Only

630 Abstract Algebra I
3 hrs.

Algebraic system studied include groups and sub-groups, rings and ideals, and fields. Quotient structures and ring extensions are discussed in detail. Prerequisite: 330.

640 Point Set Topology
3 hrs.

Elementary properties of topological spaces, metric spaces, compact spaces, and continuous functions. Prerequisite: Mathematics 570.

650 Mathematics for Elementary School Teachers
2 hrs.

Emphasizing the concepts and foundations of the mathematics commonly taught in the elementary school, and of associated problems of learning and teaching. Each student will be expected to study and report on some special problem or aspect of the teaching of arithmetic.

676 Complex Analysis
3 hrs.

Cauchy Theory, series expansions, types of singularities, analytic continuation, and theory of residues. Prerequisite: Mathematics 570.
Eight Weeks Courses . . .

610 Concepts of Mathematics 4 hrs.
This course will include the following topics: sets, relations, functions, equivalence and order relations, axiomatics, groups, rings, fields, logical structure of elementary algebra, integers, rational and real numbers, inequalities, mathematical induction.

612 Probability and Statistics 4 hrs.
This course will include the following topics: probability models, sampling, conditional probability, random variables, binomial distribution, normal distribution, estimation, tests of significance.

613 Elementary Theory of Numbers 4 hrs.
This course will include the following topics: division algorithm, primes, fundamental theorem of arithmetic, congruences, diophantine equations, historical background.

614 Mathematical Logic 4 hrs.
This course will include the following topics: sentential connectives, theory of inference, symbolizing language, quantifiers, formal and informal proofs.

615 Intermediate Analysis 4 hrs.
This course will include the following topics: limits, continuity, differentiation, integration, applications. It will stress concepts rather than techniques.

617 Foundations of Geometry 4 hrs.
The first part of the course will be a survey of analytic geometry in space using vector methods. The second part will be an axiomatic development of projective geometry and analytic projective geometry in n-dimensions.

619 Numerical Methods 4 hrs.
This course will include the following topics: automatic programming, systems for digital computers, matrices, inequalities, areas, other selections from numerical analysis. The participants will actually use the IBM 1620.

654 Curriculum Studies in Algebra & Geometry 4 hrs.
Current recommendations, materials, and methods related to teaching mathematics in secondary schools are used as the basis for reports and projects to be prepared and given by the students.

Music
Six Weeks Courses . . .

GRADUATE:
Enrollment numbers for applied music ending in six and seven grant one or two semester hours of Graduate credit; enrollment numbers ending

66
with eight and nine grant four semester hours credit. Sixty minutes of instruction is required for either one or two semester hours of Graduate credit: one semester hour in the secondary performance area, two semester hours in the major performance area. One hundred twenty minutes of instruction is required for four semester hours of Graduate credit, and it must be in the major performance area, not offered in Summer Session.

H56-H59 Piano—Arr.
H76-H79 Organ—Arr.
H96-H99 Voice—Arr.
Z36-Z39 Stringed Instruments—Arr.
Z56-Z59 Brass Instruments—Arr.
Z76-Z79 Woodwind Instruments—Arr.
Z96-Z97 Percussion Instruments—Arr.

540 Elementary School Music

Emphasizes the place of music in the curriculum and the use of music in the day to day activities of the classroom. The fundamental musical skills are developed in order to assist the teacher to achieve these objectives.

590 Operetta and Musical Production

Designed to give the school music teacher the techniques for presenting musical productions. Such areas as selection of the production, casting, lighting, scenery, staging, publicity, costumes, make-up, etc., will be discussed. The course will culminate in a public performance. Graduate students will be required to assist with other parts of the production in addition to participating in the performance.

Open to Graduates Only

640 Band Techniques and Organization


641 Choral Techniques and Organization

The study of choral activities in relation to organization, repertoire, style, diction, singing technique, balance, blend, tone quality, phrasing, rehearsal technique and conducting.

642 Philosophy and History of Music Education

Designed to acquaint the student with the development of music education in the United States and how this development is the reflection of a growing philosophy of music education.

650 Seminar in Music Education

Each participant will be expected to develop a project which is of interest to him, but each project will be subject to group discussion, review and analysis. The lectures and reading will deal with the whole field of Music Education.
658 Techniques of Research in Music Education 2 hrs.

Available research in music education will be analyzed as to method and technique. Outlines will be submitted for proposed studies involving the techniques thus discovered, and one will be developed.

Physics

Six Weeks Courses . . .

563 Introduction to Solid Physics

This course is designed to acquaint the student with modern theories of the structure of solids. Included in the course is discussion of the symmetry properties of solids; band structure; electrical and thermo properties of insulators, semi-conductors, and metals; and theories of magnetism. Attention will be given to both theoretical and experimental aspects of these topics. Prerequisite: Atomic Physics or consent of instructor.

Open to Graduates Only

674 Nuclear Science for High School Teachers 2 hrs.

Provides the secondary school science teacher direct experience with simple nuclear phenomena. The greater portion of the time will be devoted to carrying out of several experiments of varying degrees of complexity, but most of which can form the bases for several high school projects of demonstrations. Although theory will not be emphasized, the basic nuclear phenomena will be discussed together with current applications of nuclear science. Students enrolling for the course should be prepared with the basic courses in the physical sciences, although advanced courses are not prerequisites. Not offered 1964-65.

Political Science

Six Weeks Courses . . .

502 State and Local Government 3 hrs.

This course is designed to provide an intensive introduction for seniors and graduate students who have had no previous work in state and local government. The course will survey the state and local governments of the United States and constitutes a prerequisite to any seminar in state and local government for such students. Students who have had previous courses in state or local government may not receive credit for this course. Credit in Political Science 302 precludes credit in 502.

512 The Political Process of Government 3 hrs.

An analysis of political behavior in the United States with particular reference to the growth and internal dynamics of interest groups; the
characteristics of the party system; the role of both groups and party in relation to public opinion and to the operation of the legislative, executive and judiciary. Not open to students who have taken Political Science 310 or 311. Not offered in 1964-65.

524 Constitutional Law 3 hrs.
A study of the interpretation of the United States Constitution as embodied in the opinions of the United States Supreme Court. Cases are studied in the areas of jurisdiction and power of the federal courts, the powers of the legislative and executive branches, and the problems of national-state relations. Prerequisite: 324 suggested.

598 Readings in Political Science 1-3 hrs.
Designed to give an opportunity to advanced students and graduate students with good scholastic records to pursue independently the study of some subject having especial interest for them. Subjects are chosen and arrangements are made to suit the needs of each particular student. Approval of head of department and instructor required.

Open to Graduates Only

660 Seminar: Political Thought 2 hrs.
Consideration of various issues or questions arising in political thought, of various men who have contributed to political thought, or certain periods in history or regions of the world as related to political thought. Subject matter will vary from semester to semester and will be indicated in advance.

Political Science

Eight Weeks Courses . . .

640 Seminar: Comparative Government—Eastern Europe and Soviet Union 2 or 3 hrs.
A study of selected governmental problems in such areas as Western Europe, Eastern Europe, Africa, Asia, and Latin America. Seminar subjects will vary from semester to semester permitting students to repeat the course for credit as long as subject matter is different. Emphasis will be placed on extensive reading and preparation of research papers. Subject for any particular semester will be indicated in advance of offering.

Psychology

Six Weeks Courses . . .

510 Learning and Memory 2 hrs.
An introduction to the experimental analysis and theoretical integration of some phenomena of learning and memory.
512 Physiological Psychology 2 hrs.
The study of relationships between bodily processes and behavior. Psychology is treated as a biological science in this course.

517 Advanced General Psychology 2 hrs.
A continuation of course 516. This course covers the topics not included in 516. Students are permitted to first enroll in either 516 or 517. Recommended for all graduate students in psychology.

530 Statistics 3 hrs.
Application of Elementary Statistical concepts, such as central tendency, variability, correlation, reliability and validity, to problems of educational and psychological measurement. For Students in Education and for those who need statistics as a prerequisite for graduate courses.

624 Personality Theory 2 hrs.
Consideration and evaluation of the major theories of personality with emphasis on those theories having implications for counseling and therapy. An examination of experimental evidence and illustrative case studies.

650 The Deviant Individual 2 hrs.
Study of the gifted, mentally defective, neurotic, delinquent, criminal and psychotic with particular attention to the dynamic and pathological factors in development and to the distinctive manifestations of these deviations from the normal.

680 Measurements of Intelligence 2 hrs.
A survey covering the present status of intelligence testing, with special emphasis on the theory, methods, construction, evaluation and psychological implications of group and individual intelligence tests.

681 Measurements of Interests, Aptitudes and Personality 2 hrs.
A survey of measures used in other areas than intelligence, with emphasis on the theory, methods, construction, evaluation and psychological implications of their use.

Sociology

Six Weeks Courses . . .

533 Changing Social Systems—Sub-Saharan Africa 2 hrs.
A study of the erosion of traditional tribal systems and the rise of secondary associations and social systems in sub-Saharan Africa resulting from the impact of European Culture and other contemporary world influences. Prerequisite: 200 or 230 or consent of instructor.
556 Social Stratification 3 hrs.

An analysis of the structuring of societies along social class and caste lines. Emphasis is placed on the class structure of the United States and its implications for educational, occupational, and political policies. Prerequisites: Sociology 200 or 600, or consent of instructor.

572 Community Agency Resources 2 hrs.

A study of community agencies and resources for those concerned with family and personal problems. Emphasis is placed upon the availability of these resources and their effective use by business and industry, speech therapists, guidance counselors, teachers, etc.

Open to Graduates Only

600 Social Dynamics of Human Behavior 2 hrs.

The concepts of sociology, cultural anthropology and social psychology essential to understanding human development and social behavior are systematically explored and integrated. The student is taught how to assess the concrete social situations in which he finds himself, and in which he observes other people from day to day. This course is not open to those who have had a foundation course in sociology.

692 Family Development 2 hrs.

The family is analyzed over its entire cycle from marriage to the death of the spouses with special attention devoted to the developmental tasks each family member and the family as a unit must accomplish for family adjustment. The course is designed to provide students who may work with families in one capacity or another with a theoretical framework for diagnosing sources of maladjustment. Prerequisites: Sociology 200 or 600 or consent of instructor.

Eight Weeks Courses . . .

532 Culture and Personality 2 hrs.

An investigation of the interaction of culture and personality with particular attention to the role of culture as a force in the development of the individual. Prerequisites: 200 or 230, or 600, or equivalent.

Speech

Six Weeks Courses . . .

500 Speech for the Classroom Teacher 2 hrs.

Designed to help the teacher become more effective in speaking and reading. The course content will be adjusted to meet the specific needs of the individual members of the class.
522 Acting

Intensive work in the techniques of creative acting. Each student creates at least one role in a play. Prerequisite: Acting 222 or consent of instructor.

524 Problems of Play Direction

Deals with special problems facing the teacher who has had little or no formal training in theatre. The area of study is limited to selecting and casting the play, to the approach and preparation of the role and to the direction of the play. Laboratory provided in dramatic productions.

526 Technical Problems of Play Production

Companion course to 524. Emphasis placed on problems in planning and executing scenery, lighting, costuming, and make-up.

532 Persuasion

The basic considerations of the course are the factors of human behavior that can be utilized in oral communication and their ethical implications. Research, experimentation, and discussion are the primary class activities.

Open to Graduates Only

600 Problems in Listening

The principles and problems of listening. Studies and experiments in the field will be the main emphasis. In addition, applications to classroom situations will be made. Each member of the class will take tests and experiment with various listening techniques in order to gain insight to the relationship of language, attitudes and learning as seen from the perspective of listening behavior.

Speech Correction

Six Weeks Courses

550 Basic Voice and Speech Science

For students majoring in speech or speech correction. Topics considered include: anatomy and physiology of hearing; speech and hearing; anatomy and physiology of articulation and phonation; the neurological organization of the speech function; the physics and physiology of quality, pitch and intensity; and the psychology of speech.

552 Stuttering and Allied Disorders

Designed to provide the student with more detailed knowledge of the nature, causes, and development of stuttering and other serious functional speech disorders. The literature will be surveyed, and the various methods for treating these disorders will be described in detail. Prerequisite: 252.
554 Clinical Audiometry and Audiology 2 hrs.
Deals with the physics of sound, with ear as a sound receiver and with clinical methods of measuring hearing. The interpretation of test results for the purposes of re-education and the necessary follow-up measures in an educational hearing program are studied. Students will be given actual practice in group and individual audiometric testing.

556 Introduction to Lip Reading 2 hrs.
Acquaints the student with the various methods of lip reading and the problems encountered in the teaching of this skill. The student is given opportunity to acquire elementary lip reading skill as well as practice in the techniques of teaching.

Open to Graduates Only

651 Seminar in Voice Disorders 2 hrs.
The causes and treatment of the following voice disorders will serve as the basic content of this course: the laryngectomized; spastic dysphonia; vocal nodules; aphonia; functional voice disorders.

653 Diagnosis and Appraisal 3 hrs.
This course is intended to provide the basic information needed in the examination of persons with speech and hearing disorders. Interviewing techniques, examination procedures in assessing disabilities, etiology and prognosis for voice, articulation, rhythm, language and hearing disorders will be the basic content of the course. Experience in the outpatient clinic will be provided.

654 Clinical Methods in Speech Correction 2 hrs.
Designed for advanced students and practicing speech therapists, this course provides supervised therapy experiences with a variety of speech disorders. Emphasis will be placed upon the intensive study, application and evaluation of diagnostic and therapeutic procedures.
Workshops &
Special Offerings
1. Workshops During First Six Weeks of Summer Session

READING WORKSHOP (Ed. 587) (June 21 - July 30) 2 hrs.

For the eighteenth successive summer, Western Michigan University is offering a reading-improvement program for both elementary and secondary teachers and administrators. This integrated program will emphasize many phases of the reading problem. The course, Educational Therapy in Reading, will offer both graduate and undergraduate credit. In addition to and supplementing this course, the Psycho-Educational Clinic is providing a series of reading demonstrations throughout the summer session. The purpose of these demonstrations is to show teachers at the various levels how to plan and carry out an integrated and systematic program for providing developmental and corrective work in reading.

In the demonstrations a child, teacher, and one of the parents will participate. An attempt will be made to present and make clear standard procedures generally employed in the diagnosis and treatment of reading difficulties. An emphasis is placed upon developmental procedures. Time and place of the demonstrations will be announced.

Workshop: Home Ec. 652 FAMILY LIFE EDUCATION 2 hrs.

Problems of organizing materials in Family Living for the purpose of teaching classes and working with groups in the total school program. Elective. (July 19-30)

Workshop: Home Ec. 618 TEACHING OF HOME ECONOMICS: AREA OF FOODS AND NUTRITION 2 hrs.

An intensive study of problems in the specialized areas of Home Economics such as: Foods and Nutrition, Home Furnishings, Textiles and Clothing, Methods, etc. May be enrolled in more than once. Maximum credit not to exceed 4 hours. June 21 - July 2.

COOPERATIVE FIELD EXPERIENCE PROGRAM AT PRETTY LAKE VACATION CAMP (June 11 - August 20)

Pretty Lake Vacation Camp, cooperating with Western Michigan University, offers undergraduate and graduate students a unique laboratory experience in studying and working with children as camp counselors while earning university credit.

This camp is located 12 miles southwest of Kalamazoo on Pretty Lake. Under the sponsorship of the Kalamazoo Kiwanis Club and Service Club, it serves to provide a two-week vacation of fun, good food, and healthful living for deserving and needy children between the ages of 9 and 12.
Students will be assigned duties as cabin counselors or special counselors to supervise the waterfront, handicraft and program activities. Counselors guide groups of 8 through a fairly comprehensive program including swimming, boating, camp and cook-outs, handicrafts, archery, hiking, playground, and other special activities.

Student counselors will have their counseling duties reduced to enable them to attend the regularly scheduled classes and to study. Room, board and a stipend of $120.00 are provided for this eight-week program. Dates above apply to counselors. Children are at camp June 15-August 21.

The student may select courses from the following:

<table>
<thead>
<tr>
<th>Dept.</th>
<th>No.</th>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>Grad. Studies</td>
<td>712</td>
<td>Professional Field Experience</td>
<td>2-4 semester hours</td>
</tr>
<tr>
<td>Education</td>
<td>580</td>
<td>Individual Appraisal</td>
<td>2 semester hours</td>
</tr>
<tr>
<td></td>
<td>585</td>
<td>Mental Hygiene of Childhood and Adolescence</td>
<td>2 semester hours</td>
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<tr>
<td></td>
<td>250</td>
<td>Human Growth and Development</td>
<td>3 semester hours</td>
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<tr>
<td>Physical Ed.</td>
<td>270</td>
<td>Camping Education</td>
<td>2 semester hours</td>
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All graduate students will take 712 plus Ed. 580 and Ed. 585 or approved substitutes to make a total of 6 hours of graduate work. Undergraduates will elect P.E. 270 and may enroll for an additional maximum of 4 hours elected from the above list of courses. Further information and application blanks may be obtained from advisers or from the Coordinator of Professional Field Experiences. Requests for enrollment should be made prior to April 15, 1964.

MUSIC CAMP (July 11 - July 24)

The two-week Summer Music Camp, offering a stimulating musical experience in a vacation atmosphere, will be in session from July 11 through July 24. Staffed by the faculty of the University Music Department, the Camp will be open to high school students from the 10th through the 12th grades. University students who assist with the Camp may earn two hours of graduate credit (712).

The integrated program will emphasize all phases of music, and will include, as well, planned recreational activities. The Camp will offer daily instruction in orchestra, choir, band, theory, music literature and conducting. Students may also participate in small ensembles and receive private instruction.

The session will close with a concert by the various groups at the University Center at 2:30 p.m. on Saturday, July 24.

STUDENT LIBRARY ASSISTANTS (June 27 - July 2)

A workshop sponsored by the Department of Librarianship will be held the week of June 27-July 2. The program is open to high school students who will be in the 10th, 11th or 12th grades as of September, 1965, and who are assistants in public libraries or in school libraries.
It is designed to stimulate interest in books through group discussions, to improve skill in simple library techniques and in the use of audio-visual equipment, and to encourage better programs for student library clubs. Experienced librarians will serve as counselors and resource people. Special exhibits and materials will be provided by the Department of Librarianship. Application must be made in advance of May 15, 1965. Forms and information are available from the Department of Librarianship.

Workshop: Librarianship 650 ADVANCED SEMINAR IN LIBRARY MANAGEMENT (July 5 - 30)

A seminar on the application of latest scientific management principles and methods to libraries. The course will emphasize basic techniques for analyzing personnel utilization, methods of performing tasks using tools for work simplification, motion economy and layout of work areas—class sessions supplemented by laboratory exercises. Open to practicing librarians, school library supervisors, advanced degree students. A national authority in library management, Miss Jewell Hardkopf will direct the course.

Credit optional.
Registration limited.

For further information, contact Dr. Jean Lowrie, Head Department of Librarianship Western Michigan University Kalamazoo, Michigan 49001

Workshop: COACHES OF ATHLETIC SPORTS

The workshop for coaches is offered again this summer as a result of enthusiastic response from the graduate students who participated in the workshop last summer.

Enrollment is open only to graduate students who have had coaching experience or who have completed undergraduate courses in the sport concerned. The course will consider problems in the coaching of fundamentals, the organization of practice periods, and offensive and defensive strategy. Football and basketball will be considered during the first three weeks of the session, and baseball and track during the second three weeks of the session. Coaches of varsity teams will instruct.

Classwork in the course will extend over three periods of two hours duration each week. Football and basketball clinics (P.E. Men 630 and 631) will be offered during the period 9:40-11:30 on June 22, 23, 28, 29, 30, July 5, 6 and 7. Baseball and Track clinics (P.E. Men 632 and 633) will be offered during the period 9:40-11:30 on July 12, 13, 14, 19, 20, 21, 26, 27 and 28.
II. Workshops following the Six Weeks Session (Aug. 2 - Aug. 13)

REGISTRATION

Please note the registration procedure described in Part V of this Bulletin. Use the blanks as indicated for pre-registration in a workshop.

Workshop: Ed. 546 DRIVER AND SAFETY EDUCATION 2 hrs.

A two-week workshop in Driver and Safety Education is offered from August 2 to August 13. The course is open to present and prospective teachers, school administrators, safety education directors, police officials and others. The workshop incorporates the regular 40-hour driver training course with additional materials and laboratory experience in safety education in the home, school and community.

Students may receive graduate or undergraduate credit through course 546, Driver and Safety Education. Others not desiring credit, will receive certificates entitling them to teach driver training in the schools. Hours are Monday through Friday, 9:00 A.M.-12 Noon; 1:00 P.M.-4:00 P.M. in the classroom and on the road.

Workshop limited to 25 students.

Workshop: Ed. 548 AUDIO-VISUAL EDUCATION 2 hrs.

Acquaints teachers and administrators with the principles and practical uses of multi-sensory aids to education, including field trips, machines and creative materials.

Workshop: Ed. 549 PRODUCTION OF INSTRUCTIONAL MATERIALS 2 hrs.

Deals with the techniques of producing slides, filmstrips, charts, posters, feltboards, transparencies, and picture transfers. Laboratory practice will be provided in applying these techniques in the teaching area of the student's choice. Workshop limited to 20 students.

Workshop: Ed. 604 EDUCATIONAL PSYCHOLOGY

(August 8-20 — Walden Woods, Hartland, Michigan) 2 hrs.

The inter-Institutional Seminar in Child Development, of which Western Michigan University is a member, is sponsoring a seminar for graduate students who are interested in examining various approaches to the study of child development, teacher education and related areas. The teaching staff consists of distinguished child development specialists and educators from foreign and American universities. Guest speakers
from various educational institutions are also invited to participate in the seminar. The seminar is accredited on the graduate level by all the participating universities. The actual time spent in class sessions varies from 55 to 65 hours during the two-week period. A limited amount of scholarship support is available.

For further information, please contact Dr. Louis A. Govatos, Education Building, Western Michigan University.

**Workshop: Ed. 646 ADVANCED DRIVER AND SAFETY EDUCATION**

2 hrs.

Advanced professional preparation to meet the traffic and safety needs of schools, home and community. Special emphasis on traffic safety engineering and research, psychology of the motorist, and techniques of driving instruction. Laboratory experiences including driving range. Prerequisite: Education 546 or the equivalent. Scholarships available. (This Workshop enrolls through Division of Field Services. Write for special application blank.) Limited to 25 students.

**Workshop: Ed. 690 THE COMMUNITY COLLEGE**

2 hrs.

Studies the historical development of the junior and community college movement; the function of the community college in the total educational program; the divergent aims and curricular requirements of pre-professional, academic and pre-vocational courses; the problem of guidance and counseling as an integral part of the program; and methods and materials of instruction at the college level.

**Workshop: Home Ec. 644 CURRICULUM PLANNING FOR WAGE EARNING OPPORTUNITIES (Aug. 2 - 13)**

2 hrs.

Consideration of changes in family living and society in relationship to the developmental needs of students as a basis for curriculum building in junior and senior high school with special emphasis on the new Wage Earning Program. Special consultant: Margaret Dewar, Bureau of Home Economics, State Department of Public Instruction, Albany, N.Y.

**Workshop: Ind. Ed. 572 ARTS AND CRAFTS FOR TEACHERS**

2 hrs.

Covers craft techniques in the areas of art metal, jewelry, leather, plastics, wood crafts and other related experiences. Teaching procedures, methods and materials will be emphasized. (2 sections.)
Workshop: Math. 650 MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS

2 hrs.

Emphasizes the concepts and foundations of the mathematics commonly taught in the elementary school, and of associated problems of learning and teaching. Each student will be expected to study and report on some special problem or aspect of the teaching of arithmetic.

Workshop: Ed. 662 Educational Leadership

2 hrs.

Designed for present and prospective administrators, supervisors and college instructors interested in improving educational programs through constructive methods of leadership. Special emphasis is placed on the importance of human relations in curricular change.

Workshop: Soc. Sci. 507 ELEMENTARY SCHOOL SOCIAL STUDIES

2 hrs.

This course is designed to help the teacher understand the role of the social studies in the elementary school, gain insight into important considerations in the selection of content, and discover how to guide and assess children's learning. The planning of social studies experiences and ways of working with children in classroom settings will be emphasized.

Workshop: Sociology 615 TECHNIQUES OF INTERCULTURAL ADJUSTMENT

2 hrs.

A study of intercultural processes of adjustment involving different racial, national and religious groups. The factors giving rise to present-day conflict situations are examined and special emphasis is given to techniques of adjustment through individual and community action. Pre-requisite: Sociology 200 or 600, or equivalent.

Workshop: Voc. Ed. 626 TRENDS IN TECHNOLOGY AND EMPLOYMENT

2 hrs.

Major occupational shifts resulting from recent advances in science and technology. The changing nature of the labor force, economic and sociological implications of automation and atomic power. Attention will be given to educational programs needed to meet technical and skilled manpower requirements.
III. Graduate Studies 712: Professional Field Experience

Applications for all Graduate Studies 712: Professional Field Experience, should be made prior to April 15. Please secure application forms from the Graduate Office, your adviser, or the head of the department concerned.

COOPERATIVE FIELD EXPERIENCE IN LIBRARIANSHIP 2-4 hrs.

Programs at the graduate level for experienced librarianship students may include a period of time spent in an off-campus library. The selection of the library is made according to the needs of the individual students and depends on the library's capacity for supervision of such students. A report of a research problem or a paper is required.

COOPERATIVE FIELD EXPERIENCE PROGRAM AT THE HOLLAND PUBLIC SCHOOLS, MUSKEGON COUNTY BOARD OF EDUCATION, THE KALAMAZOO COUNTY BOARD OF EDUCATION, KENT COUNTY BOARD OF EDUCATION, UPJOHN SCHOOL, TWIN CITY CHILD GUIDANCE CLINIC, AND OTHERS 6 hrs.

At present the program offers field experience for interns in the School Psychological Examiner program. Professional experiences include job orientation, test administration and interpretation, report writing, parent conferences, screening committee meetings with school personnel, weekly staff conferences, and acquaintance with local community resources.

COOPERATIVE FIELD EXPERIENCE PROGRAM AT THE VETERANS ADMINISTRATION HOSPITAL, HINES, ILLINOIS 6 hrs.

The program involves several areas of professional field experience. In the area of occupational therapy, the program provides directed experiences in organization and administration of occupational therapy departments. The level of experience is planned with the student to meet individual requirements. Professional field experience in educational therapy, a second program, will be planned by the adviser in special education and the coordinator to provide appropriate experiences for the student and patients. Students in the School of Business may intern in personnel administration. Room and board will be provided for occupational therapy and personnel administration interns.

COOPERATIVE FIELD EXPERIENCE WITH HIGH SCHOOL MUSIC CAMP (July 11 - July 24) 2 hrs.

An opportunity for qualified graduate students in music to assist with band, orchestra, choir, music literature and conducting, and theory
classes composed of selected high school students. Two weeks of concentrated work in music terminate in a public concert presented by the three ensembles. The program requires the student's full time for the camp period. The work with these high school students will be under the supervision of the University staff. Related readings and reports will be required. Room and board are provided for the camp period for the limited number of students accepted for this course. Only graduate students who hold an undergraduate degree with a major in music are eligible.

A questionnaire covering professional preparation and experience is available from the music office and must be returned before application can be considered.

COOPERATIVE FIELD EXPERIENCE PROGRAM AT THE COLDWATER STATE HOME AND TRAINING SCHOOL (Mentally Retarded) 2 to 6 hrs.

Normally the student will spend most of his time in the academic school with high-level defectives. Opportunities are open for students of special education as well as those in physical education, industrial education, occupational therapy, recreation, and psychology. Research is encouraged. Week-ends free.

COOPERATIVE FIELD EXPERIENCE IN EDUCATIONAL ADMINISTRATION AND SUPERVISION 6 hrs.

There are limited opportunities for a few qualified graduate students to act as administrative assistants in off-campus summer school programs. Individuals who wish to secure administrative experience in supervision may apply for these positions at the Student Teaching Office, 2504 Sangren Hall. Applications must be received before April 15, 1965.

COOPERATIVE FIELD EXPERIENCE AT PRETTY LAKE VACATION CAMP (See Workshop Section of this Bulletin) 2-4 hrs.

A limited number of graduate students may earn credit for projects completed while working as a member of the counseling staff of the Pretty Lake Vacation Camp. Ordinarily, students will receive credit only while studying in Education curricula, however, others may apply if approved by their counselors.

Further information and application blanks may be obtained from the coordinator of field experience in the Office of the School of Graduate Studies or from Mr. Lawrence DeVoogd in the Campus School at Western Michigan University. Applications must be received before April 15, 1965.
IV: Special Offerings

SUMMER INSTITUTE FOR TEACHERS OF SECONDARY SCHOOL MATHEMATICS

Western Michigan University will conduct its seventh summer institute for secondary school teachers of mathematics from June 21 through August 13, 1965, with the aid of a grant from the National Science Foundation. The institute is of a sequential nature. The courses are planned so that the successful completion of the work of one summer leads naturally into that of the next. In this manner it is possible for a teacher to follow through a carefully planned program for three summers. The program and courses have been designed to meet the needs of high school teachers.

The major objective of the institute is to provide teachers of mathematics with an opportunity to improve their subject matter competence. A second objective is to acquaint teachers with materials of mathematics for inclusion in the high school curriculum and to assist them in their study of these materials.

SIXTH SOCIAL STUDIES SEMINAR: ENGLAND AND THE CONTINENT (Plans for 1966)

Western Michigan University will offer as part of its 1966 Summer Session its Sixth Social Studies Seminar abroad. The Seminar will fly abroad around mid-June from Detroit and return from Paris by air in late August, spending some nine or ten weeks in Europe. Six weeks will be spent in Britain including a formal study program at Oxford University. Following this, the Seminar group will spend three to four weeks in a study tour of several countries on the continent.

This foreign study Seminar is designed especially for teachers and upper-class college students in the social studies. Students who satisfactorily complete the formal program of the Seminar will earn 6 semester hours of graduate or undergraduate credit from Western Michigan University in a single divisional course, 504 Social Studies Seminar: England. Preparatory reading is required, examinations are held, and graduate students prepare a paper in the area of their special interest.

Liberal Arts 504 Foreign Studies Seminar: East Africa

Tribal villages, mission schools, youth centers, correctional institutions, and the campus of the University College at Nairobi, Kenya, will serve as classrooms for a group of Western students next summer. This foreign-study opportunity is provided by Western Michigan University as part of its regular 1965 summer session.

Organized in cooperation with the University College at Nairobi, The African Seminar and Global Travel program will involve approximately seven weeks of field study in East Africa and about three weeks devoted to sight-seeing stopovers in cultural centers along our global
route. The group will fly out of Detroit on this round-the-world, study-travel project about June 15 and return about August 24.

This Seminar is designed especially for upper-level University students majoring or minoring in Social Studies and for Social Studies teachers with a special interest in African affairs. Students who satisfactorily complete this African Seminar program earn six hours of graduate or undergraduate credit from Western Michigan University. Preparatory reading, a concluding examination and a semester paper for graduate students are required. The credit up to three semester hours in one department may be distributed upon departmental approval among Economics, History, Political Science, and Sociology. It may also be used to satisfy a 4 semester hour requirement in Basic Studies in the Non-Western World area. Contact Dr. Leonard C. Kercher, Department of Sociology and Anthropology, for further information.

Liberal Arts 504 Foreign Studies Seminar — Yugoslavia

A foreign study seminar for exceptionally talented undergraduate students, graduate students, and beginning teachers. The seminar introduces participants to the social and political system, philosophical and religious beliefs, art and literature, peoples, customs, and traditions of Yugoslavia. Undergraduate or graduate credit of six hours, with credit in any one of the following departments: economics, geography, history, political science, or sociology, provided the credit is approved by the head of the department prior to registering for the seminar.

Librarianship 650 Seminar in Library Management

This seminar will emphasize the application of the latest scientific management principles and methods to libraries. July 5 to 30, 1965.

History 510 Travel-Study Course in Michigan History

A Travel-Study course in Michigan History, sponsored by the Field Services Division of Western Michigan University, will be offered August 2-21 by the History Department. After a brief preparatory period, those enrolled in the course will take a bus tour of historical sites in Lower and Upper Michigan. Professor Charles Starring of the History Department will be in charge of the course. Three hours of graduate or undergraduate academic credit may be earned. A course in Michigan History or Michigan Geography (History 310 or Geography 510 at WMU) is a prerequisite for those enrolling in the course for credit. Enrollment is limited, and preference will be given to students taking the course for credit, though a few reservations may be accepted from persons wishing to enroll without credit. Further information, including the amount of the fee which will be charged to cover transportation and subsistence, may be obtained by writing to Travel-Study in Michigan History, History Department, Western Michigan University, about February 1, 1965. Those wishing to register for the course should specify History 510.
SECTION IV
DESCRIPTION OF GRADUATE COURSES

Two types of courses are offered in the School of Graduate Studies: (1) Those numbered 600 and above open only to graduate students, and (2) those numbered 500 through 599 open to both upperclassmen and graduate students. In all courses open to both upperclassmen and graduates, a distinction is made between the work expected from graduate students and that from undergraduates. The work expected from graduates may be of higher quality or greater quantity or both. This applies to courses offered in extension as well as in residence. The student should consult the Schedule of Classes for hours, days of week and place of meeting for all classes.
School of
Applied Arts and Sciences

GEORGE E. KOHRMAN,
Dean

Graduate Offerings:
Agriculture
Distributive Education
Home Economics
Industrial Education
Occupational Therapy
Paper Technology
Vocational Division
SCHOOL OF APPLIED ARTS AND SCIENCES

The School of Applied Arts and Sciences includes the following departments: Agriculture, Distributive Education, Engineering and Technology, Home Economics, Industrial Education, Military Science, Occupational Therapy and Paper Technology.

The School of Applied Arts offers a graduate program in Home Economics and Occupational Therapy and cooperates with the School of Education in providing teacher-education programs in Teaching of Distributive Education, Teaching of Home Economics and Teaching of Industrial Education (See Education, Section II of this bulletin for these programs).

AGRICULTURE

Baker, Head.

Open to Graduates and Upperclassmen

520 Soil Science 2 hrs. Fall

Treats soil as an organic resource. Soil formation, composition and classification are related to various physical, chemical and biological factors in the environment. Consideration is given to soil fertility, water retention and runoff, plant growth and land use as they are affected by these factors.

530 Agriculture in Michigan 2 hrs. Winter

A survey of Michigan agricultural production including the areas, volume and types of production, and the marketing systems in operation. This course deals with relationships between Michigan agriculture and national and international production. Different types of agricultural education in Michigan will be studied.

DISTRIBUTIVE EDUCATION

Trimpe, Head; Associate Professors Dannenberg, Fidler.

Open to Graduates and Upperclassmen

500 Seminar in Distributive Education 2-4 hrs.

An intensive study of problems related to distribution and education for distribution. This seminar is especially recommended for seniors and graduates in the distributive education department.

570 Organization and Operation of Distributive Education 2 hrs. Fall

Deals with the organization and operation of distributive education in relation to the total education program. It is concerned with preparatory, cooperative and adult programs. Consideration is given to advisory committees and local, state and federal relationships.
571 Job Supervisory Training 2 hrs. Winter
Provides for mastery of the techniques and skills used in supervision of employees. It deals with conference leading, how to train, how to develop the skills of leadership and the corrective interview. This training is useful for vocational teachers and those preparing for supervisory positions.

572 Teaching Techniques for Cooperative Education 2 hrs. Fall
Deals with the methods and techniques used in teaching the related subjects to students on cooperative work-study programs. Special emphasis will be given to group and individual methods of instruction.

573 Coordination Techniques in Cooperative Education 2 hrs. Winter
A study of the duties and responsibilities of the coordinator. Includes the organization of training programs, supervision of trainees on the job and the development of working relationships among the school, business and home.

598 Readings in Distributive Education 1-3 hrs. Fall, Winter
Directed, individual study of topics and areas of interest which are not otherwise treated in departmental courses. Consent of Department Head.

**HOME ECONOMICS**

Herald, Head; Professor Taylor; Associate Professors Bessom, Savage.

Open to Graduates and Upperclassmen

500 Advanced Textiles 2 hrs. Winter
The study of the composition, construction, finishing, and care of textiles. Prerequisite: 100.

502 Textile Clinic 2 hrs.
A workshop type program. Specialists and visual aids will present the newest information on textiles. To be followed by a study of methods implementing the new learnings.

510 Advanced Nutrition 3 hrs.
Study of recent developments in nutrition through readings and experiences. Prerequisite: Nutrition and Meal Planning.

512 Institutional Management 3 hrs. Winter
Study of institutional administration, job analysis, labor policies, personnel problems and cost control in different types of food-service institutions. Prerequisite: Meal Planning and Food Preservation.

514 Food Technology 2 hrs.
Food preparation with special emphasis on individual problems related to school food teaching units. Study of commercial food preparation.
518 Advanced and Experimental Foods 4 hrs. Fall

520 Equipment and Demonstration Techniques 4 hrs.
A study of principles of equipment and demonstration as applied to the areas of home economics. Prerequisites: 210, 200 or consent.

552 The Homemaking Center and the Equipment 2 hrs.
Consideration of fundamentals in planning laboratory and living area in terms of needs with special emphasis on built-ins, furnishings and equipment. Selected problems to be chosen by the individual.

598 Readings in Home Economics 2-4 hrs. Fall, Winter
Graduate students who have completed an undergraduate degree in Home Economics or related fields may enroll with permission of the head of the department to do supplementary work in a specific area to meet requirements for graduate courses.

Open to Graduates Only

600 Clothing Techniques 2 hrs.
Planned to meet the needs of the advanced student in clothing construction techniques.

602 Tailoring Techniques 2 hrs.
Specialized tailoring techniques in coats and suits. Problems in the use and performance of new textiles in clothing included.

604 Studies in Clothing and Textiles 2 hrs.
A concentrated study of specifics within these fields dependent on the interests of the students.

608 Seminar in Textiles and Clothing 2 hrs.
A study and discussion of the background, current research and findings. Each student in the M.A. program in Home Economics would be required to take a minimum of 2 hours credit in seminar.

610 Studies in Foods and Nutrition 2 hrs. Fall
A concentrated study of specifics within these fields dependent on the interests of the students.

612 Seminar in Foods and Nutrition 2 hrs.
A study and discussion of the background, current research and findings. Each student in the M.A. program in Home Economics would be required to take a minimum of 2 hours credit in seminar.

616 Consumer Buying 2 hrs.
Study of marketing problems and consumer credit. Students work on individual problems which concern the technique of buying a specific type of consumer goods.
618 Teaching of Specific Subjects in Home Economics 2 hrs.

An intensive study of problems in the specialized areas of Home Economics such as: Foods and Nutrition, Home Furnishings, Textiles and Clothing, Methods, etc. May be enrolled in more than once. Maximum credit not to exceed 4 hours.

636 Teaching for Independent Living 3 hrs.

Designed to provide a practical background and a basic understanding of problems found in the homes and communities of the home bound. This course will be concerned with general home problems related to management, personal adjustment and care of the family members.

640 Supervision of Home Economics 2 hrs. Winter

New developments in the teaching of home economics and the supervision of student teaching will be studied. Problems of the student will receive major consideration.

644 Curriculum Planning and Evaluation in Home Economics 3 hrs.

Emphasis on family and social changes and developmental needs of students as a basis for curriculum study and evaluation techniques in secondary Home Economics programs.

648 Adult Education in Homemaking 2 hrs.

A study of the developmental needs of adults and changes in society affecting families as a basis for developing adult programs in homemaking education.

650 Advanced Study of Home Management 2 hrs.

Emphasis on the philosophy, current concepts and methods of home management. Attention will be given to the newer aspects of time and motion study with special projects in work simplification. Analysis of the use of resources for achieving goals in stages of family life cycle.

652 Family Life Education 2 hrs.

Designed to develop ways of implementing newer methods and techniques used in an effective homemaking program.

654 Housing 2 hrs.

A study of economic and social aspects of housing. Single, duplex and multiple housing problems are considered. Prerequisite: Housing and Home Furnishings, or consent of the instructor.

660 Studies in Family Relations 2 hrs. Winter

A concentrated study of the specifics within these fields dependent on the interests of the students.

662 Seminar in Family Relations 2 hrs.

A study and discussion of the background, current research and findings. Each student in the M.A. program in Home Economics would be required to take a minimum of 2 hours credit in seminar.
Seminar in Home Economics Education 2 hrs.
A study and discussion of the background, current research and findings. Each student in the M.A. program in Home Economics would be required to take a minimum of 2 hours credit in seminar.

INDUSTRIAL EDUCATION

Feirer, Head; Associate Professors Lindbeck and Risher; Assistant Professors Bruce and Stegman.

Open to Graduates and Upperclassmen

506 Furniture Construction 2 hrs. Winter
The use of power machinery in furniture and cabinet construction. Special emphasis is given to the following: (1) operation of woodworking machines and equipment, (2) project design and construction, (3) shop safety, (4) plywood, and (5) furniture construction. A written report in an area of a special interest will be required for graduate credit.

508 Building Construction Techniques 2 hrs.
Examines modern construction methods in the area of cement, metal, electricity, wood, glazing and other related areas as applied to home building. It also studies construction methods both in custom building and in prefabrication.

524 Architectural Planning and Design 4 hrs. Fall, Winter
Architectural details, plans, elevations, rendering, tracing and blueprinting, and estimating to simple one- and two-story buildings. Outside reading for architectural appreciation. Prerequisites: 120, 226, or equivalent.

538 Problems in Metalworking 2 hrs.
Practical laboratory experiences in forging, foundry, heat treating, machine shop, and arc and acetylene welding. Course will emphasize methods of selecting and developing course materials for junior and senior high school students. Course content will be adapted to meet the needs of individual students.

540 Industrial Arts for the Elementary School 2 hrs.
Deals with the problems of organizing and teaching industrial arts for the elementary grades. Course materials, techniques and methods in the industrial and craft areas will be stressed.

542 Course Planning and Construction 2 hrs. Fall, Winter
Principles and techniques of selecting and analyzing suitable teaching activities and arranging such material into a functional instructional order. Instructional units prepared will be based on an analysis of a trade, occupation or activity. Opportunity will be provided to prepare a detailed course of study.
548 History and Philosophy of Industrial Education 2 hrs.

Industrial education in America, with special attention to European influences, experiments, industrial developments and theories. Emphasizes developments leading to modern practices in industrial arts and vocational-industrial education. Not offered 1965-66.

560 Basic Electricity and Electronics 2 hrs.

Designed for junior and senior high school shop and laboratory teachers of electricity and electronics. Emphasis will be placed on new methods and materials. Laboratory practice will be provided in applying new techniques and development in electricity and electronics. Not offered 1965-66.

570 Arts and Crafts Techniques 2 hrs.

Advanced laboratory experiences in the fields of internal plastic carving, leather work, model work, archery, photography and related crafts in conjunction with a study of current technical literature in these areas. Course content will be adapted to individual needs.

572 Arts and Crafts for Teachers 2 hrs. Winter

Covers craft techniques in the areas of art metal, jewelry, leather, plastics, wood crafts and other related experiences. Teaching procedures, methods and materials will be emphasized. Prerequisite: 174.

573 Mechanics and Conditioning of Equipment 1-2 hrs.

A study of the cutting mechanics of wood, metal and synthetic materials. Practice in installation, adjustment, preventive maintenance and conditioning of power equipment will be included. Particular emphasis will be given the relationship between proper installation and condition to efficient machine operation.

582 Aviation for Classroom Teachers 2 hrs. Fall, Winter

Designed for elementary and secondary school teachers desiring an understanding of various phases of aviation and their relation to social, political, economic and educational problems in the modern world. Opportunities will be provided to analyze various educational activities that are appropriate to different grade levels, and provision will be made for visiting airports and acquiring some flight experience.

588 Advanced Power Laboratory 2 hrs.

Designed to enable teachers to add a power mechanics area to existing Industrial Arts Programs. The course will include a study of internal combustion engine operating principles. Laboratory experiments will be conducted in mechanical and hydraulic power transmission. The teachers will investigate and prepare reports of recent developments in new types of internal and external combustion power units. The school shop organization, equipment and safety requirements unique to this area of instruction will be studied. A course of study including text materials, charts and films will be developed. Instructional materials will be designed illustrating scientific principles.
598 Special Problems in Industrial Education 1-3 hrs. Fall, Winter

Designed for qualified individual graduate students wishing to pursue special problems of individual need or interest under the direction of a member of the graduate faculty. May be elected once in the industrial education department, and once in an associated department, with the approval of the Industrial Education Department Head and the faculty member under whom the student desires to work. Applications must be submitted and approved prior to the election of the course.

Open to Graduates Only

605 Problems in Woodworking 2 hrs.

Advanced laboratory experiences in the area of woodworking. Content selection, project building and new techniques will be covered. Written reports based on current literature will be required. The areas to be covered will be dependent on individual needs. Not offered 1965-66.

620 Advanced Drafting Practices 2 hrs.

Advanced laboratory experiences in mechanical, architectural and machine drawing in conjunction with a study of current technical literature. Written reports are required. Advanced instruction in engineering drawing and descriptive geometry will be included. Not offered 1965-66.


Study and analysis of current practices in technical representation. Course content is based on current industrial practices and techniques, plus the development of skill to teach this material at the high school and junior college level. Not offered 1965-66.

630 Research in Machine Shop Practices 2 hrs. Fall

For teachers who wish to study and develop advanced techniques in the area of machine technology.

641 Trends in Industrial Education 2 hrs.

A study of current literature in the field. Research studies will be reviewed. Commercial and industrial publications will be studied to determine their place in the school shop program.

643 Measurement in Industrial Education 2 hrs.

A study of the techniques involved in the preparation and use of teacher-constructed written and practical tests. Attention will be given to the interpretation of test results and the evaluation of student achievement.

644 Project Planning and Designing 2 hrs.

A study of the principles of design and their application to shop projects. Special attention will be given to planning and designing new projects which will enrich the school shop program. Not offered 1965-66.
645 **Shop Planning** 2 hrs.

Planning of the shop and selecting the equipment and supplies for an industrial education laboratory. A study of the basic principles of planning and equipment selection to reflect modern industrial education philosophy. Not offered 1965-66.

646 **Teaching Problems in Industrial Education** 2 hrs. Fall

Special attention will be given to teaching methods and the techniques useful to experienced industrial education teachers. Emphasis will be placed on problem solving in industrial education, pupil planning and the demonstration technique. Each student will be required to work out a program of teaching methods useful in his particular school.

647 **Modern Technological Practices — Foundry, Power Mechanics, Machine Shop, Welding, Electronics** 2 hrs. Fall

This in-service course for industrial teachers will provide opportunities to learn the latest in technological practices in industry. Whenever possible, cooperation of an industrial group such as the American Foundrymen's Society will be utilized in planning and organizing the course. This course will be offered for two semester hours per unit and may be elected for a total of four semester hours.


(Description same as Industrial Education 647.)

650 **Advanced Problems in Graphic Arts** 2 hrs.

Opportunity is provided for the individual student to undertake advanced study of technical problems in the field of graphic arts. Advanced instruction in imposition, presswork and linotype composition will be available. Not offered 1965-66.

661 **Electricity for Teachers** 2 hrs.

For teachers planning an electrical area in their general shop or planning to teach on a unit shop basis. Special attention will be given the development of suitable instructional activities and technical information related to them. Prerequisite: 265, 560. Not offered 1965-66.

670 **Problems in General Shop** 2 hrs.

Practical experiences in drawing and planning, woodworking, metalworking, electricity, and craftwork will be required. Course will include selection, development and preparation of materials and instructional media for instruction at the junior and senior high school levels. Not offered 1965-66.

671 **Industrial Education Materials** 2 hrs.

A study of basic materials and processes of industry with emphasis on new materials and processes. Written reports will be based on a review of government studies, handbooks, industrial publications and scientific re-
ports. Each material and process studied will be evaluated as to its working characteristics and possible application to school shop instruction.

672 Studies in General Shop Content and Practice 2 hrs.
Study of current general shop content with emphasis on new instructional areas, science applications in industry, multiple-activity instructional practices, and the selection and purchasing of equipment, tools, and supplies. The adaptation of experiments and exercises to general shop instruction will be included. Not offered 1965-66.

OCCUPATIONAL THERAPY
Kiss, Head; Associate Professor Tyndall; Assistant Professor Lewis.

Open to Graduates and Upperclassmen

502 Advanced Weaving 2 hrs.
Studies in the more complex forms of fabric structure and design. Offered as needed.

520 Kinesiology 3 hrs. Fall, Winter
A basic study of the muscles of the body, classified as to joint motion. Each muscle is studied according to origin, insertion, and action. Analysis of movement will also be included. This study is accompanied by a review of basic terminology of the skeletal and nervous systems. Prerequisite: Consent of Department Head.

524 Medical and Orthopedic Conditions 4 hrs. Winter
A series of lectures concerned with medical and orthopedic conditions which are treated by the occupational therapist. Prerequisite: Consent of Department Head.

Open to Graduates Only

600 Studies in Occupational Therapy 2-4 hrs.
Designed to cover modern developments in occupational therapy. Prerequisites: OTR. Offered as needed.

630 Professional Literature 2 hrs. Winter
Study and discussion of the trends, philosophy and practices in Occupational Therapy. Consideration will be given the use, analysis and appraisal of current professional literature.

632 Supervision of Occupational Therapy 2 hrs. Fall
Place and function of supervision in Occupational Therapy. Practical problems in the supervision of staff therapists, students and volunteer groups. Techniques of effective leadership will be demonstrated and emphasis will be placed on the relationship of these techniques to the achievement of departmental, hospital and community goals.
633 Administration of Occupational Therapy 2 hrs. Winter

A study of problems confronting the administrator of occupational therapy such as functional organization, personnel policy, planning of physical facilities, finance, legal aspects and hospital-community relationship.

650 Clinical Training and Scheduling 2 hrs. Fall

Objectives and management of clinical training from the viewpoint of the school and the affiliating center. Mechanics of the student-training schedule and the student-rating program.

PAPER TECHNOLOGY

Janes, Head; Professor Diehm.

530 Polymer Chemistry 2 hrs. Fall

A study of the molecular and chemical structure of high molecular weight compounds as related to their rheological, mechanical, chemical, and optical behavior. Special emphasis is on both natural and synthetic polymers of significance to the paper industry. Methods for characterization of both the bulk and solution properties of polymers are covered in detail. Prerequisite: Organic Chemistry 360, 361; Physics 112 or 110.

VOCATIONAL DIVISION

Kohrman, Dean, Associate Professor, Johnson.

Open to Graduates and Upperclassmen

520 Principles of Practical Arts and Vocational Education 3 hrs. Fall, Winter

The place and function of the practical arts and vocational education in the modern school; fundamental principles upon which this work is based. For teachers of agriculture, business, home economics, industrial subjects and administrators.

522 Occupational Laboratory Experience 2 hrs. Winter

A supervised business and industrial experience program involving full-time employment for at least six weeks or equivalent. Students will study and participate in experiences in a specific occupational area. Prerequisite: consent of instructor.

Open to Graduates Only

625 Administration and Supervision of Practical Arts and Vocational Education 2 hrs. Winter

The functions of administration and supervision; problems involved in the organization and operation of practical arts and vocational education programs. For administrators, supervisors of vocational education and those wishing to prepare for such positions.
626  Trends in Technology and Employment  2 hrs.

Major occupational shifts resulting from recent advances in science and technology. The changing nature of the labor force, economic and sociological implications of automation and atomic power. Attention will be given to educational programs needed to meet technical and skilled manpower requirements. Post session August 1965.

628  Seminar in Vocational Education  2 hrs.  Fall

An intensive study of problems related to vocational education. For teachers, coordinators and administrators who have completed at least fifteen hours of graduate credit.
School of Business

ARNOLD E. SCHNEIDER,
Dean

Graduate Offerings:

Accounting
Business Education
General Business
Management
Marketing
SCHOOL OF BUSINESS

The School of Business includes the departments of Accounting, Business Education, General Business, Management and Marketing. The function of the School of Business is to prepare students for positions in business and industry. The program leading to the degree, Master of Business Administration, is designed to prepare graduate students to function effectively in administrative positions in these fields.

The student is challenged to develop the judgment, discriminating capacity, knowledge and understanding which will permit him to work efficiently in administrative and other leadership roles. Under the guidance of the graduate staff of the School of Business, personal programming for the participant is provided as an alternative to a set schedule of required courses.

The School of Business cooperates with the School of Education in offering the curriculum, The Teaching of Business Education (See Education, Section II of this bulletin for a description of this program).

ACCOUNTING

Burke, Head; Professor Wetnight; Associate Professor Everett; Assistant Professors Stevenson and Morris.

Open to Graduates and Upperclassmen

510 Advanced Financial Accounting 3 hrs. Winter
An intensive study of asset valuation, liabilities, corporate capital, and their relationship to income. Prerequisite: Accounting 211 or 519.

511 Advanced Accounting 3 hrs. Fall, Winter
Accounting for problems in special sales, consolidations and equities. Prerequisite: 311.

512 Cost Accounting 3 hrs. Fall, Winter
The relation of cost accounting to management for control; general principles involved in constructing a cost system; distribution of cost materials, labor and burden; cost records; operating reports; standard costs and budgetary control. Prerequisite: Accounting 211 or 519.

513 Accounting Systems 3 hrs. Winter
The principles of accounting system development. Will include the systems of various types of businesses. Prerequisite: 211 or 519.

514 Income Tax Accounting 3 hrs. Fall, Winter
Federal income tax laws for individuals, partnerships and corporations. Prerequisite: Accounting 310, or consent of instructor.

516 Auditing 3 hrs. Fall, Winter
The theory and practice of making audits of business enterprises and government agencies. Prerequisite: Accounting major.
517 Cost Accounting—Theory and Practice 3 hrs. Winter

The development and application of cost accounting principles to industrial situations. The course includes the application of costs to operations and to products. The preparation and analysis of detailed cost information, as well as methods and procedures for solving complex cost problems encountered in industry, are included as a major part of the course. Prerequisite: 512.

518 Accounting Theory and Problems 3 hrs. Winter

Theoretical consideration of accounting problems. Nature and analysis of the type of problems that are to be found in C.P.A. examinations. Prerequisite: Accounting major.

519 Administrative Accounting 3 hrs. Fall

Basic topics are the accumulation of financial data and the preparation of financial statements. Included are accounting topics related to business assets and entities and an introduction to the analysis and interpretation of financial statements. Designed especially for graduate students entering the MBA program who have not previously completed the equivalent at the undergraduate level. Prerequisite: Graduate standing. Not open to students with credit in accounting.

598 Readings in Accounting 1-4 hrs. Fall, Winter

Directed individual study of bodies of knowledge not otherwise treated in departmental courses. Open to Graduates Only

610 Advanced Accounting Theory—Income Determination 3 hrs. Fall

A study of the underlying concepts and principles of the determination of income. Includes the study of the development of these concepts and principles and their future outlook. A study is made of assets evaluations as they relate to income determination.

611 Advanced Accounting Theory—Equities 3 hrs. Winter

A study of the underlying concepts and principles of corporate equities. Includes a study of capital stock, retained earnings, the entity theory and related materials.

612 Advanced Cost Accounting Concepts 3 hrs. Winter

A study of the more mature methods of cost measurement and control. Includes standard cost, budgetary control, profit-volume analysis, direct cost and return on employed capital.

614 Business Tax Planning 3 hrs. Winter

An advanced course in business taxation involving the identification and analysis of tax problems. Income tax strategy is studied involving the timing of income, types of business organizations, and the various alternative tax treatments. Tax problems of corporate reorganizations, liquidations, estates and trusts, partnerships, and capital gains will also be included. Case studies will be used and research in taxation will be emphasized.
616 Controllership 3 hrs.

The function of the controller in the organization. The controller's relationship to the construction, control, and interpretation of accounts for the internal and external administration of the organization is emphasized. The role of the controller in the organizational structure and relationship to other departments is also considered. Prerequisite: Accounting 512 or equivalent.

BUSINESS EDUCATION

Marietta, Head; Associate Professor McKittrich.

598 Readings in Business Education 1-1 hrs.

A series of directed readings in the area of business education. Prerequisite: Consent of the department head.

Open to Graduates Only

680 Principles of Business Education 3 hrs.


684 Improvement of Instruction in Shorthand and Secretarial Subjects 2 hrs.

A study of the latest research findings, materials, teaching procedures, tests and measurements, and possible future development in shorthand.

686 Improvement of Instruction in Typewriting 2 hrs.

A study of the latest research findings, materials, teaching procedures, tests and measurements, and possible future development in typewriting.

688 Improvement of Instruction in Bookkeeping in General Business Subjects 2 hrs. Fall

A study of the latest research findings, materials, teaching procedures, tests and measurements, and possible future developments in the business subject-matter of this field.

689 Organization and Teaching of Office Practice 2 hrs. Winter

A consideration of aims and content of office-practice course in the secondary school, with plans and techniques for organizing and teaching the subject-matter of the course and its laboratory material.

GENERAL BUSINESS

Schneider, Head; Professors Burdick and Grossnickle; Associate Professors Healey, Morrison and Niemi.
Open to Graduates and Upperclassmen

520 Security Analysis 4 hrs. Winter
Analysis of securities, market values and investment programs. Interpretation of financial reports, factors and conditions. Prerequisite: 326 Investments, or consent of instructor.

524 Financial Management 3 hrs. Fall, Winter
Study of the principles and problems underlying the management of capital employed in the business. Prerequisites: Core subjects for the B.B.A., or consent of instructor.

526 Advanced Life and Health Insurance 4 hrs. Winter
The topics covered include group life and health insurance, business life and health insurance, insured pension plans, estate and tax planning and new developments in the life and health insurance fields. (Prerequisite: 422 Life and Health Insurance or consent of instructor.)

528 Problems in Multiple-Line Insurance 3 hrs. Winter
This course uses the case analysis method in dealing extensively with both personal and commercial risk surveys and analyses. Special problems in rating, loss adjustment, marketing, underwriting, and finance in the property and casualty fields are also solved. Prerequisite: 424 Property Insurance or 426 Casualty Insurance and Bonding.

542 Law of Real Property 3 hrs. Winter
The study of the law of Real Property including Property Rights, Mortgages, Leases and Land Contracts.

544 Law of Business Organizations 3 hrs. Fall
The study of the law of Business Organizations including Partnership, Corporations and Trust Organizations.

598 Readings in General Business 1-4 hrs. Fall, Winter
Directed individual study of bodies of knowledge in business administration which will enhance the student's areas of interest and competence.

Open to Graduates Only

600 Seminar in Business 3 hrs. Fall, Winter
Intensive problem solving in the primary business fields. Consent of instructor required. May be re-elected.

620 The Capital Market 3 hrs. Fall
Study of the courses and flow of demand and supply of credit. The business application of monetary theory to financial institutions and their operational problems. Prerequisite: 520 Security Analysis or permission of the instructor.

622 Corporate Financial Problems 3 hrs.
A study of the financial problems, policies, and procedures employed in diversification, expansion, merger and other forms of corporate change.
624 Financial Statement Analysis 3 hrs. Winter

Intensive financial analysis to establish trends and fiscal controls in business operations. Structural investigation of financial statement relationships utilizing ratios, capitalization of earnings, and other analysis media fundamental of management decision and action.

626 Insurance and Government 3 hrs. Fall

This course covers the historical development, legal background, and methods of governmental supervision of the insurance industry. Principal emphasis will be placed upon state supervision of insurance, but the role of the federal government in present and future regulation is also considered. Detailed consideration is given to insurance department administration and staff, licensing and examination of companies, rate and policy filings, and control of insurance agents and adjusters. Prerequisite: consent of instructor.

640 Legal Controls of the Business Enterprise 3 hrs. Fall

An analysis of the current legal problems as they apply to the control and regulation of various types of business enterprises.

642 Statistical Interpretation 3 hrs. Winter

A survey of the advanced statistical techniques as applied to business problems. Includes probability theory; estimation of proportion, means and variances; test of hypothesis, simple and multiple regressions. Also include topics selected from the following fields: sequential analysis; nonparametric methods; elements of experimental design; analysis of variance and introduction to statistical decision theory. Prerequisite: A course in statistics or consent of instructor.

MANAGEMENT

Hartenstein, Head; Professor Schneider; Associate Professors Booker and Niemi; Assistant Professors Ansari, Leader, Sands.

Open to Graduates and Upperclassmen

550 Management Problems 3 hrs. Fall, Winter

An opportunity to approach business from the case-study method by working solutions to actual management problems.

551 Administrative Behavior 4 hrs. Fall, Winter

Designed to integrate the contributions and implications of the behavioral sciences to modern business practice to promote and maintain effective human relations for the individual and the group. Extensive use of cases and conference methods is made.

552 Management Report Writing 3 hrs. Fall, Winter

A study of the techniques in and applications of management reports and management-report writing. Actual management reports in the various fields will be studied. The development and practice of technical report writing will be stressed.
553 Planning and Analysis for Production 4 hrs. Fall

An examination of modern methods of analysis, their relation to the production process and their utilization in management planning. Cases and problems will be utilized. Prerequisites: Principles of Economics, Statistics 244.

554 Introduction to Management Science 4 hrs. Winter

Modern scientific techniques used in business and industry for controlling operations, maximizing profits and minimizing costs. Allocation of men, money, and machines among alternative uses. Other strategies and control methods applicable to management, marketing, the finance. Prerequisite: Statistics 244.

555 Electronic Data-Processing 4 hrs. Fall, Winter

Examination of current literature in electronic data processing with special emphasis on systems analysis, applications of computers to business problems and feasibility studies.

556 Office Management 4 hrs. Winter

Areas of office services from the managerial viewpoint. A brief overview of the problems of organizing, constructing, installing and maintaining office systems.

557 Inventory Management 3 hrs.

The practical application of modern management techniques in the definition and solving of problems in inventory systems. Prerequisite: Statistics 244 or Equivalent.

562 Administrative Dynamics 4 hrs. Fall

The development of a model to integrate management principles, administrative behavior, small group research and individual psychological theory. Both static and dynamic models are analyzed.

564 Industrial Dynamics 4 hrs. Fall

Development of a model for the integration of the functional areas of business to create more successful management policies and organizational structures. Prerequisite: Statistics 244 or equivalent.

598 Readings in Management 1-4 hrs. Fall, Winter

Directed individual study of bodies of knowledge not otherwise treated in departmental courses. May be repeated for credit by permission of Department Head.

Open to Graduates Only

600 Seminar in Management 3 hrs. Fall, Winter

Intensive problem solving in advanced management topics under simulated conditions of a business conference, including the preparation of a major staff report. Consent of instructor required. May be repeated for credit by permission of Department Head.
650 Managerial Aspects of Labor Law 3 hrs. Winter

Background and consequences for business policy of law governing collective relationships between employers, employees, and their representatives with special emphasis on interpretation and evaluation of current legislation.

652 Business Policy 3 hrs. Winter

Integration of background acquired by the student from such varied fields of instruction as accounting, finance, industrial management, law, personnel administration and marketing. Top management problems emphasized. Discussion of actual business cases.

654 Problems of Personnel and Industrial Relations 3 hrs. Fall

A critical examination of current practices and trends in personnel administration and industrial relations in the light of recent research and findings in the field of human relations in industry. A review of personnel and labor relation functions in the enterprise, with attention to the application of theory and principles, the conduct of personnel research activity, and the relation of the industrial relations function to the goals of the enterprise as a whole.

655 Organization Theory 3 hrs. Fall

An interdisciplinary approach towards the analysis of the variables affecting the modern business organization with emphasis on the relationship of the role of the social sciences to the behavior of the segments of the firm. Prerequisite: Management Principles or consent of instructor.

658 Advanced Management Practices 3 hrs. Fall, Winter

Current trends and advanced problems in the organization and management of business enterprises. Prerequisite: Consent of instructor. May be repeated for credit by permission of Department Head.

MARKETING

Trader, Head; Associate Professor Hardin; Assistant Professors Hill, Otteson, and Orr.

558 Purchasing Problems 3 hrs. Fall

Value analysis and the evaluation of purchasing department performance. Problems involve organization, materials management, operation, vendors relations, and make or buy decisions. Prerequisite: Purchasing 358 or permission of instructor.

570 Advertising Media and Campaigns 3 hrs. Fall, Winter

A frame of reference for the evaluation of media and advertising through communications research. Course includes both theory and practice of media research, use of Audit Bureau of Circulation data, broadcast ratings, copy testing, development of media plans and scheduling as required for advertising campaigns. Prerequisite: Advertising 374 or permission of instructor.
572 Advertising Copy and Layout 3 hrs. Fall, Winter

Study of the theory and practice in the writing, preparation and typographical composition of advertising including the writing of radio, television, and newspaper copy. Prerequisite: Advertising 374 or permission of instructor.

573 Retail Merchandising 3 hrs. Fall, Winter

A study in the development of an optimum blend of product, place, promotion, and price in the final consumer market. Includes study of buying policies, terms, negotiations; resource selection and development; merchandise information, expense control systems and budgets; sales and customer analysis; pricing; government regulations. Prerequisite: Principles of Retailing or permission of instructor.

574 Marketing Problems 3 hrs. Fall, Winter

Analysis of current marketing problems utilizing the case method of study. Prerequisite: Marketing 240 or permission of instructor.

575 Marketing Projects 1-4 hrs. Var. Fall, Winter

Concentrated study of specific areas of Marketing which seem to warrant current attention and in which the student indicates a strong interest. Prerequisite: Consent of instructor.

576 Marketing Research 3 hrs. Fall, Winter

Designed to include an introduction to market research, the procedures and applications of research, and the accomplishment of a research project. Term project includes selection of a problem, preparation of questionnaire, data collection, analysis of data, and final report. Prerequisite: 240, Jr. or Sr. status, or approval of instructor.

577 Advertising Strategies 3 hrs. Fall, Winter

Involves the analyses and preparation of advertising as a communicative tool. Utilizes case studies, discussions, extensive readings in the areas of consumer markets, media selection, budgeting, product promotion, and retail advertising coordination. Capstone course for advertising students. Three one hour weekly sessions plus field work and individual consultations. Prerequisite: Advertising 374 or permission of instructor.

578 Marketing Logistics 3 hrs. Fall

An analysis of problems relating to the movement, handling and storage of industrial products. Attention will also be given to changing market conditions and industrial structure as they affect the physical distribution of industrial goods. Prerequisite: Marketing 240 or permission of instructor.

579 International Marketing 3 hrs. Fall

An examination of the theories and principles of international marketing. Attention directed to related commercial policies, trade practices and procedures, and marketing research tools and techniques needed to locate and evaluate foreign markets. Prerequisite: Marketing 240 or permission of instructor.
598 **Readings in Marketing**

1-4 hrs. Arranged

Directed individual study of bodies of knowledge not otherwise treated in departmental offerings. Prerequisite: Consent of instructor.

Open to Graduates Only

600 **Seminar in Marketing**

3 hrs. Winter

Intensive problem solving in the primary business fields. Consent of instructor required.

670 **Marketing Analysis**

3 hrs. Fall, Winter

A comprehensive analysis of marketing theory and procedures. Designed for those students who have not had the undergraduate course in Marketing. Prerequisite: Consent of instructor.

672 **Marketing Management**

3 hrs. Winter

Analysis of marketing activities from the management point of view. Includes study and decision making relative to competition, demand analysis, cost analysis, product design, promotion, pricing and channels of distribution.

674 **Market Programming**

3 hrs. Winter

Designed for special emphasis toward developing a total marketing strategy within an organization. Practical application of the marketing tools and techniques to a current problem originating in a business organization. Prerequisite: Consent of instructor.
School of Education

JAMES H. GRIGGS,
Dean

Roland S. Strolle,
Assistant Dean

Graduate Offerings:

Teacher Education
School Services
Physical Education for Men
Physical Education for Women
SCHOOL OF EDUCATION

The School of Education includes the following departments and units: Teacher Education, School Services, Physical Education for Men, Physical Education for Women, Directed Teaching, Campus School, and the Educational Resources Center.

Its purpose is to prepare carefully selected students through well defined teacher education curricula for administrative, supervisory and instructional positions in the public schools.

The curricula offered in Education are described in Section II of this bulletin.

TEACHER EDUCATION

Griggs, Dean; Strolle, Assistant Dean; Travers, distinguished University Professor; Professors Boles, Bryan, Buelke, Chiara, Eisenbach, Frederick, Govatos, Juul, Mallinson, McCuskey, Moore, Sebaly, Schroeder, Swickard, and Viall; Associate Professors Kanzler, Lamper, McGinnis, Overton, and Snow; Assistant Professors Adams, Bodine, Brail, Davenport, Farrow, Heger, Heinig, McMahan, Myer, Schloch, and Turansky.

Core Courses

Each graduate student in Education, regardless of specialization, is expected to show competence in at least three professional areas: research, curriculum, and foundations. These are considered minimal requirements for career positions as teachers, administrators, guidance personnel, or curriculum specialists. Such competence will normally be provided through 12 semester hours of course work in the following courses: 601, 602, 603, and 604. In certain curricula, such as Guidance and Secondary Teaching, modifications of this requirement are permitted to provide for needed flexibility.

601 Introduction to Research in Education 3 hrs. Fall, Winter

This course is intended to develop an understanding of the major types of educational research and application of research findings to educational problems. Emphasis is placed upon familiarity with sources of research, competence in the interpretation of research reports and abstracts, understanding of the techniques of conducting discriminating search of the literature, and the development of skills in research writing.

602 School Curriculum 3 hrs. Fall, Winter

This course, designed for teachers and administrators at all levels, attempts to analyze the decision factors stemming from societal forces, needs and perceptions of learners, and internal structures of the disciplines as guidelines for a curriculum emerging from and serving a democratic society.

603 Social and Philosophical Foundations 3 hrs. Fall, Winter

A cultural approach to the development of American educational policy and practice in its broad social setting. Consideration is given to historical, economic, social and philosophical factors which influence
educational thought and practice. The need for historical perspective and sound analysis of conflicting points of view are emphasized in the interpretation of current educational issues and the alternative solutions of present educational problems.

604 Psychological Foundations of Education 3 hrs. Fall, Winter

An overview of the psychological forces that influence the learner in his educational setting; with special emphasis on the nature and significance of human variability, development of self, measurement and evaluation, and a consideration and application of principles of learning to classroom situations.

Curriculum and Instruction

502 Curriculum Workshop 2 hrs. Fall, Winter

Opportunity is provided for teachers, supervisors and administrators in selected school systems to develop programs of curriculum improvement. A wide variety of resources is used for instructional purposes, including several specialists, library and laboratory facilities, field trips, audio-visual materials and the like.

508 Parent Education 2 hrs. Fall, Winter

Places major emphasis on home problems which have educational implications for the child. Parent-teacher relationships, council programs and cooperative efforts for improvement of education in home and in school are studied.

510 The Elementary Curriculum 2 hrs. Fall

A consideration of content and procedures to adapt experiences of pupils in elementary schools to modern conditions and to child needs and interests. Individual or committee reports concerning the improvement of various aspects of the elementary school curriculum will be prepared.

514 Nursery-Kindergarten Education 2 hrs. Winter

This course will acquaint students with the history and present-day status of Nursery School and Kindergarten education. Research will be utilized as a basis for determining the organization, equipment, curriculum and teaching procedures recommended for this age group.

516 Driver and Safety Education 2 hrs. Fall, Winter

Deals with several aspects of safety education in the home, school and community, with special emphasis on preparing secondary school teachers of driver training and safety education. Materials and methods, psychophysical testing, sound driving practices, pedestrian protection, “Behind-the-wheel” training in dual-control cars and accident prevention procedures are an integral part of the course.

548 Audio-Visual Education 2 hrs. Fall, Winter

Acquaints teachers and administrators with the principles and practical uses of multi-sensory aids to education, including field trips, machines, and creative materials.
519 Production of Instructional Materials 2 hrs. Fall, Winter

Provides many laboratory experiences in making such instructional materials as: bulletin board displays, charts, wet and dry mounting of pictures, film strips and 2" X 2" slides, silk screen process, magnetic boards, handmade slides, mimeograph techniques, etc. Opportunity will be given for students to work on those materials which interest them.

555 Alcohol Education 2 hrs. Fall, Winter

Deals with problems of alcohol education in the school and community, with special emphasis on teaching methods and procedures, relationships with governmental and social agencies, and administration of program.

587 Educational Therapy in Reading 2 hrs. Fall, Winter

The psychological, sociological and physiological factors affecting children's reading ability, together with laboratory application of such knowledge in the prevention, diagnosis and treatment of reading problems. Open only to experienced teachers by permission of the instructor.

610 Guiding Child Development in the Elementary School 2 hrs. Fall, Winter

Designed to help nursery, kindergarten and elementary school teachers gain an understanding of the manner in which skills, information, attitudes and behavior patterns are acquired and modified. The contributions of each curricular area, such as: language, arts, arithmetic, science, social studies, health, etc., are stressed with emphasis on suitability of experience for different stages of growth, instructional practices and appropriate procedures of evaluation.

615 Seminar in the Teaching of Reading 2 hrs. Fall, Winter

Designed to acquaint teachers, reading specialists and administrators with the current literature, research, methods and materials used in teaching children how to read. Special emphasis is placed on reading in relation to other aspects of language and on reading in the content fields.

621 The Secondary School Curriculum 2 hrs. Fall

Covers modern practices and recent emphasis and trends in subject areas of the secondary school curriculum. Prerequisite: 502 The School Curriculum or equivalent.

622 Junior High School Curriculum and Instruction 3 hrs. Fall

A detailed study of the junior high school including: development and purposes; psychological and philosophical foundations; curriculum patterns; student activities programs; and administrative, guidance, and evaluation procedures. Special attention given to the objectives and content of general education, and the basic concepts, methods, and materials that are significant in an instructional program designed to achieve integration of learning through the problem-solving approach.

119
633 Education of Gifted and Talented Children and Youth

This course is designed to develop a student's understandings of and appreciation for the abilities, interests, talents, and problems of gifted children and youth. Attention will be given to methods and criteria used in identifying gifted, talented, and creative individuals. Through the use of available research data, students will be required to complete a critical evaluation of educational provisions including segregation, acceleration, and enrichment. Personal, social, and cultural factors which directly or indirectly influence the growth and development of these individuals will be considered.

646 Advanced Driver and Safety Education

Advanced professional preparation to meet the traffic and safety needs of schools, home, and community. Special emphasis on traffic safety engineering, and research psychology of the motorist, and techniques of driving instruction. Laboratory experiences including driving range. Prerequisite: Education 546 or equivalent.

648 Instructional Media Seminar

Designed specifically for teachers and administrators who wish to concentrate on an intensive study in one or more of the instructional media including: language laboratories, teaching machines, instructional television, conventional audiovisual media, etc., and/or organizational and administrative management of instructional media as they pertain to school systems. Limited to 15 students. Consent of instructor required.

650 Growth and Development in Later Adolescence

Designed to develop an understanding of the behavior patterns, problems, and adjustments of college-age youth. Special emphasis is placed on the role of the junior college teacher in guiding the social and emotional as well as the intellectual development of the students.

669 Supervision of Student Teaching

Deals with the significance of student teaching in the pre-service education of teachers, the role of the supervising teacher, and the problems associated with providing high quality student teaching experiences. Many types of student teaching programs and their components of planning, evaluation, supervisory conferences and follow-up are analyzed.

687 Improvement of Reading in Secondary Schools

Designed to aid teachers in developing the reading abilities and skills for their students at the secondary level. Emphasis is on aims, materials and procedures.

688 Evaluation in Education

Designed to develop skills, techniques, attitudes, and understandings involved in the measurement and evaluation of individual learning and development as well as in the appraisal of the total school program. Emphasis is placed on the construction, use, and interpretation of formal
and informal evaluative devices, and upon the development of a philosophy of evaluation as an integral part of learning.

690 The Community College 2 hrs.
Studies the historical development of the junior and community college movement; the function of the community college in the total educational program; the divergent aims and curricular requirements of pre-professional, academic and pre-vocational courses; the problem of guidance and counseling as an integral part of the program; and methods and materials of instruction at the college level.

Foundations of Education

Education 530 Education of Exceptional Children 3 hrs. Fall, Winter
This course is primarily concerned with children and youth who are visually, auditorily, orthopedically and/or emotionally atypical. Emphasis will be placed on developing an understanding of the psychological, sociological, educational and philosophical aspects of each type of exceptionality. Present programs and services are described and evaluated. Field trips are made to public and private schools, institutions and agencies.

585 Mental Hygiene of Childhood and Adolescence 3 hrs. Fall, Winter
Deals with the problems of emotional adjustment and maladjustment in childhood and adolescence. Stresses the development of sound principles and practices basic to mental health.

651 Philosophy of Education 2 hrs. Winter
For graduate students and teachers of experience. Analyzes basic ideas, concepts and value-systems affecting educational practices; stresses a comparison of philosophical schools, historical and contemporary.

652 Comparative Education 3 hrs.
Provides an analysis of selected educational systems throughout the world. The goals, organizational structure, curricula, and methods of education are examined in relation to the salient features of each culture, and in comparison to the American educational system. Not offered in 1965-66.

Special Education

512 Workshop in Special Education 2-4 hrs.
Designed for teachers, counselors, psychologists, social workers and others interested in studying selected aspects of special education at appropriate locations, such as state hospitals and special schools. A variety of instructional experiences are provided, including conferences.

521 Practicum in Special Education 2 hrs. Fall
This course consists of supervised tutoring of exceptional children with learning problems, such as the mentally retarded, perceptually
handicapped and emotionally disturbed. Educational evaluation, teaching materials and techniques, and management of emotional and social aspects of the learning process are included in the course content. Regular clinical case conferences directed by the instructor and members of the institutional staff will be held.

**528-29 Interdisciplinary Education and Rehabilitation Techniques**

4 hrs. (2 per sem.) Fall, Winter

This course is intended to develop a thorough understanding of the roles of the various disciplines involved in the diagnosis, education, and rehabilitation of exceptional children and youth. Lectures, taped and filmed interviews, and live demonstrations are utilized. Class meets during the fall and winter terms on Mondays, from 4:15 to 6:00 for full four hours credit. The course will be applicable to students of speech correction, reading therapy, occupational therapy, psychology and special education as well as to those in general education.

**532 Mental Deficiency**

4 hrs. Fall, Winter

A course especially intended for teachers of mentally handicapped children. Also recommended for school counselors, psychologists, social workers and other ancillary personnel. Course objectives include an understanding of the causes, diagnoses, classification and interpretation of mental deficits. Prerequisite: Education 530 or equivalent.

**534 Education of the Mentally Handicapped**

4 hrs. Fall, Winter

The course includes a critical evaluation of methods and materials utilized in teaching the mentally handicapped. Special attention will be given to problems of organizing special classes, developing curriculums and understanding expectations of educational program for mentally handicapped children and youth. Prerequisite: Education 532 or equivalent.

**543 Education and Therapeutic Care of Crippled Children**

4 hrs. Fall

Study of educational, psychological, and therapeutic needs of crippled children and the role of allied disciplines in meeting these needs. Prerequisite: Education of Exceptional Children 530 or consent of instructor.

**588 Psychopathology of Childhood**

2 hrs. Fall, Winter

A comprehensive study of the causes, manifestations, treatment and prognoses of psychiatric conditions in children suffering from neuroses, psychoses, schizophrenia, behavior disturbances, psychopathic personality disorders, organic malfunctioning, sexual deviations, etc. The learning difficulties and educational problems presented by emotionally disturbed children. Terminology and concepts needed for an understanding of mental illness and for effective communication with members of related psychiatric professions.

**589 Education of Emotionally Disturbed Children**

4 hrs. Fall, Winter

Taken concurrently with directed teaching in this field, this course provides group and individual guidance regarding problems encountered
in teaching the emotionally disturbed. Methods of teaching, evaluation, cooperation with other agencies and professions, staff diagnostic conferences, and inter-disciplinary teamwork are among the areas covered. Resource persons include psychiatrists, psychologists, social workers, etc.

630 Clinical Study of Exceptional Children 2 hrs.
This course is intended to illustrate methods of diagnosing and treating problems of exceptional children. Students make observations and interpretations of the children and carry on remedial work with them. The contributions of other professions will be incorporated.

632 Problems in Education of the Mentally Handicapped 2 hrs. Fall
Problems in education of mentally handicapped children including educability; philosophy of education of the mentally handicapped; organization of programs; and functions of institutions.

634 Theory and Practice in the Education of Perceptually Handicapped Children 4 hrs. Winter
This course explores the biological, psychological, and educational problems of children who exhibit specific characteristics associated with brain injury and perceptual disturbances. The underlying theoretical principles of perceptual and conceptual learning are presented. Educational procedures are discussed and various methodologies are examined. Children with perceptual handicaps are studied, and the students learn to prepare appropriate teaching devices.

635 Counseling Parents of Exceptional Children 3 hrs. Fall
This course explores the dynamics of parental reactions to their handicapped children. Techniques of dealing with stress situations in the home, in the school, and in the community are developed. The students are given opportunities of working with parents of exceptional children and helping them in coping with the problems they face.

636 Seminar in Special Education 2 hrs. Winter
This course is designed for experienced teachers to examine in depth selected social, emotional, and educational problems of the children with whom they work and the multiple approaches utilized in meeting their needs.

637 Current Research in Special Education 2 hrs. Fall
This course explores recent researches in various areas of special education. The studies are examined with regard to their validity, significance, and their implications for the education of exceptional children.

640 Organization and Administration of Special Classes and Services for Exceptional Children 2 hrs. Winter
Principles and practices of organization and administration of special programs at state, county, and local levels will be considered, including legal aspects of state aid.
674 Directed Teaching, Special Education 3-6 hrs. Fall, Winter

This course is a requisite for graduate students who are preparing to teach in special education. The course is preferably taken after directed teaching has been completed in a regular classroom.

SCHOOL SERVICES

Strollo, Assistant Dean; Professors Boles, Bryan, Davis, Manske, McCuskey, Moore, Viall and Weaver; Associate Professors Blasch, Engle, and Lamper; Assistant Professors Betz, Cudney, Davenport and Karlela; Instructors Crawford, Murphy, Suterko and Widerberg.

Educational Leadership

605 The Process of Curriculum Development 2 hrs. Fall

This course, designed for instructional leaders, will deal with forces causing and inhibiting curricular change, techniques of organizing and supporting curriculum improvement, perceptions of individuals and groups in relation to change, and communication with professional and lay groups involved. Prerequisite: Education 602 or consent of instructor.

613 Elementary School Administration and Supervision 3 hrs.

A study of theoretical and practical problems of elementary school administration and supervision including organization of the school program, parent and community relationships, personnel problems and leadership in instructional improvement.

623 Supervision of Instruction 3 hrs. Fall

The improvement of learning for all those who take part in educational enterprises will be the center of this course. Basic principles will be developed from the practical problems of coordination, stimulation as a planning of improved learning. The psychological and cultural matrix in which supervisory activities take place will be considered.

624 Secondary School Administration and Supervision 3 hrs. Winter

This course is designed for all those interested in educational leadership at the secondary level. Basic principles of both administration and supervision will be developed and the interrelationship between the two carefully studied.

653 Principles of Community School Organization 2 hrs. Fall

The history and philosophy of the community school as a special instrument, its program, and organizational problems related to the staff, plant, and community.

657 Community School Administration 2 hrs. Winter

Principles of administration relating directly to the community school program. Emphasis on the task, the personnel, and the dynamic community setting.
660 Principles of Educational Leadership 3 hrs. Fall, Winter

A study of the philosophy and principles of sound educational administration at all levels. Problems of school organization are considered in the light of research findings in human relations, and leadership in curriculum development. Stress is placed upon the nature of the administrators process and upon the opportunities and challenges of educational leadership.

661 Social Interpretation 2 hrs.

Deals with community education with respect to the educational program. Considers the principles of educational interpretative service and their application in every phase of the system.

663 Seminar in Educational Administration 2 hrs. Fall

This course is designed for experienced administrators to examine in depth selected problems of school administration, including the compilation and review of research in the field. Admission by permission of instructor.

664 Development of Educational Facilities 3 hrs. Winter

Designed to help students identify the tasks to be done, the participants and their roles, and the principles involved in determining needs; in planning, constructing, furnishing, occupying and evaluating a single building project; and in planning for certain specifics (e.g., health, safety, comfort, future use, function, aesthetics and economy). Includes field trips to new facilities.

665 School Finance and Business Management 4 hrs. Fall

Treats such topics as origins, status, organization and principles of business management; programming, expending, and securing funds; sources of funds; preparing, presenting, administering and evaluating the budget; administration of personnel, materials, plant, pupil services, and funds. Includes securing, handling and accounting for general, capital outlay and internal funds.

666 Cooperative Inter-Institutional Seminar 4 hrs.¹ Fall, Winter

¹Enrollment is for the full academic year only, with four hours credit for the year. Restricted enrollment, subject to approval of instructor. A program designed for sixth year or post sixth year students who are practicing administrators. Makes use of the Flint, Michigan public schools, in cooperation with other Michigan universities.

667 Administration of School Personnel 2 hrs. Fall

Discusses policies and procedures relating to the selections, assignment, and supervision of certified and classified school personnel. Contracts, salary, schedules, working conditions and termination policies are studied.

668 School Law 2 hrs. Winter

Focuses attention on basic legal principles, on the interpretation of school legislation, and on the legal responsibilities facing the administration, the teacher, the school board, and the parent.
Guidance and Personnel Services

Education 580 Principles and Philosophy of Guidance 2 hrs. 
(Service course for non-counseling majors)

An introductory course for elementary and secondary teachers. A thorough investigation of the democratic philosophical concepts underlying guidance service programs; a survey of the history and principles of guidance; an overview of guidance services.

Education 581 Interpretation and Use of Tests in Guidance 2 hrs. Winter 
(Service course for non-counseling majors)

Designed to familiarize students with various psychological tests and scales that may be used in school guidance programs. Tests are taken and scored by students, and the results are interpreted and evaluated.

Education 582 Information Service and Guidance 2 hrs. Fall 
(For counseling and non-counseling majors)

Discussion of theories of occupational and educational choice stressing knowledge of sources, use, evaluation and techniques of imparting occupational and educational information including college choice, loans, fellowships, scholarships and grants in education.

Education 583 Guidance Workshop 2 hrs. Fall, Winter

The Guidance Workshop is designed for counselors who wish to study particular guidance problems and procedures in relations to their local guidance program. Group procedures will be demonstrated and experienced by the counselors with a view toward developing understandings of the group processes as perceived by students. Class membership limited to counselors, social agency personnel, and Hines Hospital personnel.

Education 584 Elementary School Guidance 2 hrs. Fall 
(Required for elementary school counselors, and a service course for non-counseling majors)

Designed to give teachers, administrators and guidance workers an understanding of principles and techniques of guidance programs in elementary schools.

Education 680 The Personnel Worker and His Roles 4 hrs. Fall, Winter

A basic introductory unit encompassing a thorough investigation of philosophic concepts undergirding guidance and personnel programs, and a survey of the history and principles of such services. In addition, the student is involved in group counseling which may afford an opportunity for him to progress in self-understanding and self-evaluation. Admission only to those enrolled in the Guidance curriculum.
Education 681 Organization and Administration of Student Personnel Services 4 hrs. Fall

A unit emphasizing the organization and administration of student personnel services at the local, state and national level. Competencies are developed in the use of questionnaires, school records, evaluations, autobiographies, anecdotal records, sociometrics, rating scales, case studies and conferences, and parent-teacher conferences. Students are expected to study various psychological tests and scales used in guidance and personnel services programs and to administer, score and interpret these devices. Prerequisite: Education 680.

Education 682 Research in Guidance and Personnel Services 4 hrs. Fall

This course may be substituted for Education 681 if the student is not planning to become an elementary or secondary school counselor. The unit is designed to encourage independent study and research in the area of guidance and personnel services. The student will formulate, design and submit a research project to the Guidance staff member who is responsible for guiding the total experience. Prerequisites: Education 680, Education 601 and consent of adviser.

Education 683 Theory and Laboratory Practice in Counseling 4 hrs. Fall, Winter

An advanced unit designed to synthesize counseling theory and counseling laboratory experiences. Learning activities, such as tape recordings, video tapes, role playing and actual counseling sessions, are provided to help make theoretical constructs concrete and practical. The laboratory experience involves counseling contacts which expose the candidate to various aspects of the counseling relationship. Prerequisites: Education 680, and 681 or 682.

Education 684 Supervised Practicum and Professional Experience 4 hrs. Fall, Winter

A unit designed to continue and enlarge upon the laboratory experiences initiated in Education 683. In addition, there is a supervised professional experience which can be effected at Western Michigan University Counseling Bureau, a public school setting, or governmental and social agency settings (e.g. Juvenile Court) which is designed to provide the student with supervised practical experience in his major vocational area of interest. Prerequisites: Education 680, 681, and 683.

Education 686 Seminar in Guidance and Personnel Services 2 hrs. Winter

A critical review of the research literature relating to guidance and allied fields. Emphasis is placed upon the practical application of these findings in the respective schools and agencies of the participants.

Education 687 Group Procedures in Education 2 hrs. Winter

An analysis of the role and function of group procedures in education with special emphasis on the elements of group process and inter-
action. Attention is given to relevant research in group procedures. Limited experience for selected students may be provided in group counseling, guidance, instruction and dynamics.

**Education 691 Counseling Supervision** 2-1 hrs. Fall

Designed for advanced graduate students who plan to assume leadership responsibilities in the continuing education of counselors. Includes didactic discussions of the elements of counseling supervision, and practical experience in counselor education.

**Blind Rehabilitation**

**590 Physiology and Function of the Eye** 2 hrs. Fall, Winter

The anatomy, structure and function of the eye. Various eye diseases and malfunctions are stressed. The student is given an opportunity to observe all types of eye conditions, eye prosthesis and low visual aids.

**591 Braille and Other Communication Methods** 2 hrs. Fall, Winter

Acquaints the student with the basic rudiments of Braille reading and writing. Familiarization with other means of communication used by the blind.

**592 Education of the Blind and Partially Sighted** 2 hrs. Winter

An overview of the education of visually handicapped child. An introduction to the literature, history, principles, practices and problems in the field, including curricular and methodological adaptations of various educational programs.

**593 Methods and Techniques of Teaching Braille and Other Areas of Communications** 3 hrs. Winter

Provides students with the ability to teach areas of communication essential to the blind adult, such as: social communication, use of Braille, typing, script writing, electronic devices and other media. Opportunity for supervised practical application of methods will be afforded to the student.

**Education 638 Teaching the Adult Blind** 4 hrs. Winter

Teaching and learning as they are affected by blindness. Emphasis is placed on the skills and techniques required in teaching independent living to the blind adult. Opportunity for individual practical application of methods is afforded the students.

**692 The Dynamics of Blindness and Rehabilitation** 2 hrs. Winter

The development of the status of the blind and their integration into a sighted society. The relationship of the emotional and social correlates of blindness to the development of the blind individual as a contributing member of society.

**693 Counseling of the Blind (Hines V. A. Hospital)** 2 hrs. Fall, Winter

Acquaints the intern with techniques and procedures used in testing and counseling blind individuals.
694 Orientation and Mobility 2 hrs. Fall, Winter
  Techniques are acquired under conditions simulating blindness. Emphasis is placed on the use of the remaining senses, common objects, the muscles and the skeleton in activities of daily living.

695 Advanced Orientation and Mobility 4 hrs. Fall, Winter
  Orientation and mobility techniques and the proper methods of incorporating them into a persons method of travel. Guided observation and practice with blinded individuals ranging in age from the pre-kindergarten through the aged in various environments, such as the: school, residence, community, and work situations.

696 Internship in Orientation and Mobility (Hines V. A. Hospital) 8 hrs. Fall, Winter
  The intern, under close supervision of a Master Therapist, instructs blinded children and adults in all phases of orientation and mobility. The intern is afforded the opportunity to work with all levels of students in various environments. He also aids the Master Orientator in working with blinded individuals who have additional severe disabilities.

PHYSICAL EDUCATION FOR MEN

Gary, Head; Associate Director of Athletics Gill; Professor Maher; Associate Professors Boven, Dales and Doolittle.

Open to Graduates and Upperclassmen

561 Problems in Interscholastic and Intercollegiate Athletics 2 hrs.
  Relationship of athletics to education is considered. Problems in the organization of an athletic program including eligibility, finance, liability, transportation, safety, facilities and equipment will be discussed. Not offered 1965-66.

Open to Graduates Only

630 Advanced Techniques in the Coaching of Football 1 hr.
  Considers problems in the coaching of fundamentals, the organization of practice periods and offensive and defensive strategy. Prerequisite: Either coaching experience or completion of an undergraduate course in the sport concerned.

631 Advanced Techniques in the Coaching of Basketball 1 hr.
  The same as 630.

632 Advanced Techniques in the Coaching of Baseball 1 hr.
  The same as 630.

633 Advanced Techniques in the Coaching of Track 1 hr.
  The same as 630.
634 Advanced Techniques in the Coaching of Minor Sports 2 hrs.

Problems and coaching techniques in minor sports such as wrestling, tennis and golf. Rules and regulations governing meets and play are discussed. Actual participation in the activities is required. Either coaching experience or completion of an undergraduate major or minor in the field of Physical Education is a prerequisite.

642 Physical Fitness Workshop 2 hrs.

An intensive study of problems related to the development and maintenance of physical fitness, including the areas of administration, curriculum, prescription of activities, and evaluation. Course will provide opportunity for cooperative exploration of significant factors contributing to physical fitness and recommendations for their implementation at the elementary and secondary school levels.

650 Tests and Measurements in Physical Education 2 hrs. Winter

Acquaints students with the theory, selection, construction, administration and interpretation of appropriate tests in the field. Class activity will include study and discussion of selected tests, application, scoring, interpretation and construction of tests.

660 Current Studies in the Administration of Physical Education 2 hrs. Winter

For administrative officers as well as for teachers and directors of physical education. Includes a study of representative programs of physical education and a discussion of standards for evaluating such programs.

662 Curriculum Building in Physical Education 2 hrs.

A course in the development of a practical progressive physical education program for the elementary schools and for secondary school boys. A review of children's characteristics, particularly those concerned with physical education, will be used as a basis for thorough analysis of the development of the fundamental and basic skills at the various age levels. Not offered 1965-66.

670 Community Recreation 2 hrs. Fall

Problems in community recreation. The essential elements pertaining to leadership, areas, facilities, programs, activities and methods of organization and administration are considered. A study is made of outstanding programs in operation. Recreation material is surveyed.

671 Camp Administration 2 hrs.

The organization and administration of camps and their program requirements and standards. Consideration is given to philosophy and objectives, personal skills in camp activities and methods of teaching them. Visits to camps are made and out-of-door activities are experienced. Not offered 1965-66.
Methods and Materials in Recreation 2 hrs. Winter

Best methods and materials for the teaching and organization of recreation activities. Activities used in recreation will be presented. Opportunities for organization and actual participation and leadership will be given. This course is open to all graduate students.

PHYSICAL EDUCATION FOR WOMEN

Roell, Head; Associate Professors Hetherington, Large.

Open to Graduates and Upperclassmen

Methods and Materials in Health Education 2 hrs.

Lectures and demonstrations with emphasis on the effective health supervision of school children, the principles and practices of health teaching in the various grades, and the interrelation of this teaching with that of other subjects in the curriculum. Prerequisite: 353, 354 or consent of instructor.

Dance History and Philosophy 4 hrs. Winter

A study of the history and philosophy of dance from primitive man to modern man. Emphasis upon contemporary thought and its effect upon man's expression through dance.

Philosophies of Physical Education 2 hrs. Fall, Winter

A study of the ideas and concepts of various philosophical schools as they apply to physical education.

Administration and Organization of Physical Education 2 hrs. Fall, Winter

Discusses administrative procedures and problems connected with physical education programs, including scheduling, facilities, personnel problems and public relations.

Open to Graduates Only

Rhythms in Elementary Education 2 hrs. Fall

A study of the rhythmic movement needs of the elementary school child, including: suggested methods of teaching through which children are stimulated to create their own responses in rhythmic play; folk and social dancing as outgrowths of movement fundamentals; and teaching examples, sample lesson plans and up-to-date reference sources. The course will consist of lecture and activity periods.

Physical Education for the Elementary Teacher 2 hrs. Winter

A study of the developmental needs of the child in terms of physical activity; the role of physical education in childhood education; the responsibility of the classroom teacher in this area; demonstrations and practice in teaching activities.
661 Problems and Trends in Physical Education 2 hrs. Fall

Deals with modern trends and with instructional and supervisory problems involved in conducting an effective program of physical education. Critical appraisal of present practices.

662 Curriculum Building in Physical Education 2 hrs.

A course in the development of a practical progressive physical education program for the elementary and secondary schools. A review of children's characteristics, particularly those concerned with physical education, will be used as a basis for thorough analysis of the development of the fundamental and basic skills at the various age levels.
School of
Graduates Studies

GEORGE G. MALLINSON,
Dean

LEO C. STINE,
Assistant Dean

Departments:

Librarianship
Thesis, Independent Research
Professional Field Experience
GRADUATE STUDIES
Open to Graduates Only

700 Thesis 6 hrs. Summer, Fall, Spring
Candidates for the Master of Arts degree may elect to write a thesis in their field of specialization under the supervision of one or more faculty advisers.
A student may elect this course in units of from two to six hours. The election should not be made in more than two units and must be made within a calendar year. Application forms must be submitted at the time of election of the thesis.

710 Independent Research 2 hrs. Summer, Fall, Spring
Designed for highly qualified advanced graduate students, or small groups, who wish to pursue individual studies or projects under the direction of a member of the graduate faculty. It may be elected in any department or division with permission of the Dean of the School of Graduate Studies, the student's graduate adviser and the faculty member under whom the student desires to work. Applications must be submitted prior to the election of the course.

711 Independent Research 2 hrs. Summer, Fall, Spring
A continuation of Graduate Studies 710. May be elected in any department or division with permission of the student's graduate adviser, Dean of the School of Graduate Studies, and the faculty member under whom the student desires to work. Prerequisite: Acceptance for Candidacy for the Master's Degree, and completion of Graduate Studies 710 with superior accomplishment. Application forms may be obtained at the Graduate Office and must be submitted prior to the election of the course.

712 Professional Field Experience 2-6 hrs. Summer, Fall, Spring
Designed for superior graduate students who wish to pursue internships or apprenticeships in off-campus activities in industries or institutions. May be elected in any department or division with permission of the student's graduate adviser, a faculty sponsor and the Coordinator of Professional Field Experiences. Prerequisite: An outline of the purposes of the student's internship or apprenticeship. Application forms and information about established programs may be obtained at the Graduate Office and must be submitted prior to the election of the course.

LIBRARIANSHIP
Lowrie, Head; Assistant Professor Grotzinger.

510 Selection of Books and Related Materials 3 hrs. Fall, Winter
Principles of selection and evaluation of books and non-book materials. Appraisal of printed aids, book reviewing media and other sources of information used in building the library collection. Oppor-
tunity given for developing competence in writing annotations and book reviews.

512 Reference Service 3 hrs. Fall, Winter

Study and evaluation of basic reference and bibliographic sources. Critical examination of the publications of governmental agencies, societies and institutions especially as reference sources. Attention given to organization and methods of reference services in the library.

*516 Elementary School Library Materials 3 hrs. Winter

Problems in the selection and evaluation of books, periodicals, films, recordings and other materials for children with special emphasis on the content areas in the elementary school curriculum. Methods of stimulating interest in reading with attention to the retarded as well as to the gifted child. For teachers, parents, librarians and others who work with children. Prerequisite: 282 Children’s Literature or the equivalent.

520 Field Assignment and Seminar 2 hrs. Fall, Winter

An assignment in selected cooperating libraries for the purpose of giving the student experience in the organizational and administrative activities in specific types of libraries as basis for understanding their function and the principles underlying policy. The assignment may precede the opening of college or may be carried on during the term. Laboratory period for discussion of problems is held throughout the term. Term project also required of graduate students enrolled.

530 Introduction to Classification and Cataloging 4 hrs. Fall

Introduction to the principles of cataloging and classifying the book collection. Includes study and practice in making the dictionary catalog and in classifying according to the Dewey Decimal Classification scheme. Students are taught to use the unit card system and are given practice in adapting Library of Congress and Wilson printed catalog cards, in assigning subject headings and in cataloging non-book materials.

531 Technical Processes: Instructional Materials Centers 4 hrs. Fall

An introductory course in classification and cataloging in which emphasis is placed on processing materials for the instructional materials center. Includes processing of books and other printed matter and audio-visual materials. Includes also principles of application of the Dewey Decimal Classification system, the assignment of subject headings, adaptation of printed catalog cards and introduces various methods of processing audio-visual materials both for individual schools and centralized processing for systems. Includes laboratory experiences.

*542 Reading Interests of Young Adults 3 hrs. Winter

Study of the fields of literature suited to the interests of young people. Students are given opportunity through wide reading to develop principles and standards for the selection of the book collection.

*Starred courses are open to students from other departments.
Includes an introduction of methods of stimulating broader reading interests and of conducting group book discussions with young people. Open to students in the Education Department and to others who expect to work with youth.

546 Storytelling 3 hrs. Fall
Underlying principles of the art of storytelling; techniques, content and sources of materials. Practice in telling stories before groups of children is provided. Planning the story hour program for various ages as a means of developing appreciation of literature and stimulating an interest in reading.

598 Readings in Librarianship 1-3 hrs.
Offers a program for the advanced student for independent study in his special area of interest; arranged in consultation with a graduate adviser.

Open to Graduates Only

600 Foundations of Librarianship 3 hrs. Fall, Winter
Gives the student professional background through study of the historical development of the library, European and American; the function of the modern library and its contribution to society; current trends in librarianship and current library literature.

602 History of Books and Printing 3 hrs. Winter
Study of the development of the book from the earliest period to modern times. Considers the appraisal of the physical book as well as its relationship to social and cultural developments. Includes history of the alphabet, early writing materials, manuscripts, invention and spread of printing and evolution of book production.

612 Subject Bibliography: The Humanities and Social Sciences 3 hrs. Fall, Winter
A study and evaluation of the bibliographical sources in the social sciences and the humanities. Each student will be expected to compile a bibliography on a topic of his choice. Prerequisite: an introductory course in Reference. 612 need not precede 613.

613 Subject Bibliography: The Sciences 3 hrs. Winter
A study and evaluation of the bibliographical sources in the sciences including the technical fields. Each student will be expected to compile a bibliography on a topic of his choice. Prerequisite: an introductory course in Reference. 612 need not precede 613.

614 Government Publications 3 hrs. Winter
Study of city, state and federal documents and those of selected international agencies such as the United Nations. Problems of acquisition, organization and use of such collections in various types of libraries. Prerequisite: 512 Reference Service or equivalent.

*Starred courses are open to students from other departments.
*616 Curriculum Enrichment Materials 3 hrs. Fall

Study of the sources for selection of teaching materials with emphasis on the content areas in the secondary school curriculum. Includes evaluation of books, pamphlets, periodicals, map and other audiovisual materials. Methods of instruction in the use of such materials are also studied and students are expected to complete a term project. Open to teachers and librarians.

*617 Reading Guidance for Children 3 hrs. Fall

A study of the development of children's literature from approximately the 8th century in England and the Colonial period in the United States to the present time. Includes principles and techniques in guidance of children's reading interests; establishment of policies for selection of books especially in building the collections of public library children's departments.

618 Libraries and Multi-Sensory Communication Media 3 hrs. Fall

A study of modern multi-sensory aids employed in communicating ideas and considered in relation to their effect on libraries. Emphasis will be placed on program development through effective use of multimedia materials. Mass communications media and new instructional methods for fulfilling the objectives of public, school and college libraries will be examined.

620 Public Library Service 3 hrs. Winter

Origin and development, purposes and functions of the tax-supported public library (county and regional) in a democracy. Relation to other educational units in the community; distinctive problems and practices in public library organization and administration. Prerequisite: Library Organization and Administration or equivalent.

622 Library Organization and Administration 3 hrs. Fall

Organizational and administrative factors requisite for effective library service. Consideration given to governmental and community relations, to personnel, finance, buildings and equipment. Individual projects, lectures and class discussion supplemented by observation trips.

623 College and University Library Service 3 hrs. Winter

College and university library organization and administration, and the place of the library in academic institutions; effectiveness of library procedures; problems of acquisition, finance, buildings, equipment and the handling of special materials. Prerequisite: 622 Library Organization and Administration.

624 Children's Library Services 3 hrs.

Organization and administration of public library service to children; emphasis on coordination with elementary school library service. (Not offered 1965-66)

*Starred courses are open to students from other departments.
625 School Library Administration 3 hrs. Fall
The function of the library as a department in elementary and secondary schools. Includes study of special problems in personnel, in planning for space and equipment, in budgets and in the administration of centralized school library services in a school system. Standards for evaluation of school libraries are also studied. Open to graduate students in school administration as well as to librarianship students.

626 Library Service to Youth 3 hrs. Winter
The function and administration of youth service in public libraries; study of methods in use in various library systems and the coordination with secondary school libraries. (Not offered 1964-65.)

627 Administration of the Instructional Materials Center 3 hrs. Winter
Presentation of the single agency concept of multi-media instructional materials (school library plus audio-visual center) and the educational role of mass communications (language laboratory, educational television, etc.). Techniques for organization and administration, distribution and accessibility within the individual school or within a school system. Use and care of printed materials, non-book materials and equipment. Laboratory work and field trips.

628 Special Library Service 3 hrs. Winter
Development and administration of specialized library services to organizations in such fields as science and technology, fine arts, business, etc. Lecturers and field trips.

629 Library Research 3 hrs. Winter
Evaluation of library studies and their influence on library organization, administration and services. Opportunity for investigation and research in current problems in public, college or school libraries. Prerequisite: 622 Library Organization and Administration or equivalent.

630 Advanced Classification and Cataloging 3 hrs. Winter
A continuation of Introduction to Classification and Cataloging. Attention is given to comparison of classification systems; to cataloging of special types of materials including audio-visual materials and to methods of organizing centralized cataloging units.

641 Adult Reading Interests 3 hrs. Winter
Evaluation of the findings of reading interest studies and their implications in library service. Survey of the field of popular reading in various subject areas. Development of an understanding of the reading habits, abilities, and needs of adults.

648 Adult Education Methods in Libraries 2 hrs. Fall
Function of the library in the continuing education of adults; relationship to other adult education agencies. Introductory leadership training and development of techniques in group work, book discussions, and film forums.
650 Advanced Seminar in Librarianship 2-4 hrs.

Analysis and study of specific problems in contemporary library practice. Lectures, field trips and resource consultants (offered irregularly).
School of Liberal Arts and Sciences

GERALD OSBORN,
Dean

CORNELIUS LOEW,
Associate Dean

Graduate Offerings:

Art
Biology
Chemistry
Economics
English
Geography and Geology
History
Languages
Mathematics
Music
Philosophy
Physics
Political Science
Psychology
Science Division
Social Science Division
Sociology and Anthropology
Speech
The School of Liberal Arts and Sciences includes the departments of Art, Basic Studies, Biology, Chemistry, Economics, English, Geography and Geology, History, Languages, Mathematics, Music, Philosophy and Religion, Physics, Political Science, Psychology, Sociology and Anthropology, and Speech.

The School of Liberal Arts and Sciences offers a variety of subjects that familiarize the graduate student with the world of ideas, and deepen his understanding of the cultural heritage. The programs are designed to train the student to think objectively, critically, and creatively.

Graduate programs are offered in Biology, Chemistry, Economics, English, Geography and Geology, History, Languages, Mathematics, Medieval Studies, Philosophy, Physics, Political Science, Psychology, and Sociology and Anthropology.

The School of Liberal Arts and Sciences cooperates with the School of Education in offering the following teacher education programs: Teaching of Art, Teaching of Literature and Language, Teaching of Music, Teaching of Science and Mathematics, Teaching of Social Science, Teaching of Speech Correction and Teaching of General Speech.

**ART**

Hefner, Head; Associate Professor, S. Phillips.

510 Life Drawing 3 hrs. Fall, Winter
Continuation of Art 310 with emphasis on the final drawing as a complete and coherent artistic statement. Prerequisites: Basic Group I, and 310.

520 History of Art 3 hrs. Fall, Winter
The study of American Art beginning with the Pre-Columbian period. Prerequisites: Art 220, 221.

525 Seminar in Art 1 hr. Fall, Winter
A seminar primarily in Art Philosophy and History with opportunity for research and debate.

530 Advanced Ceramics 3 hrs. Fall, Winter
Advanced work in Ceramics including glaze calculations and experimentation. Prerequisites: Basic Group I, and 232, 330.

531 Sculpture 3 hrs. Fall, Winter
Advanced work in Sculpture. Prerequisites: Basic Group I, 310, 331.

533 Textiles 3 hrs. Fall, Winter
Continuation of 344 with advanced work in textile design. Prerequisites: Basic Group I, and 234, 334.
538 Jewelry 3 hrs. Fall, Winter
Continuation of 338: advanced work in jewelry processes. Prerequisites: Basic Group I, and 236, 338.

540 Oil Painting 3 hrs. Fall, Winter
Advanced oil painting. Prerequisites: Basic Group I, and 210, 310, 240, 340.

541 Printmaking 3 hrs. Fall, Winter
A continuation of printmaking, 341. Prerequisites: Basic Group I, and 210, 310, 242, 510, 341.

542 Watercolor 3 hrs. Fall, Winter
Continuation of advanced watercolor techniques with emphasis on experimentation. Prerequisites: Basic Group I, and 240, 342.

545 Graphic Design 3 hrs. Fall, Winter
A survey of visual communication from two dimensional to three dimensional forms. (Eg., editorial design, packaging, point of sale, exhibition design.) Prerequisites: Basic Group I, and 245, 345.

550 Art Supervision (Elementary) 2 hrs. Fall, Winter
Designed to prepare elementary art education majors to realistically meet such responsibilities as working with elementary classroom teachers, selecting, organizing and teaching art activities at each stage of development.

551 Art Supervision (Secondary) 2 hrs. Fall, Winter
Designed to prepare art education majors to understand the problems of the secondary art program. Organizing and teaching, budgeting, and other problems of secondary art education programs.

Open to Graduates Only

642 Studio in Art 4 (to be arranged) Fall, Winter
Advanced problems in art according to individual need. (Sculpture, ceramics, textiles, painting, etc.)

643 Studio in Art 2 (to be arranged) Fall, Winter
Continuation of 642.

650 Workshop in Art for Elementary Teachers 2 hrs. Fall, Winter
This course is planned for the elementary classroom teacher who has little or no training in art education. It includes an introduction to the philosophy of art education, and an examination of the stages of development of the child in creative and mental growth, as well as activities designed for each level.

655 Workshop in Art for Secondary Teachers 2 hrs. Fall, Winter
A course designed to help the secondary teacher with no professional training in art or art education to better understand the child at this level and to help him in his creative and mental growth through art activities.
BIOLOGY

Professors Bartoo, Hinds, Steen, VanderBeek, Van Deventer, Wiseman; Associate Professors Brewer, Holt and Schultz; Assistant Professors Engemann, Lawrence, Noecker, Pippen, Vial and Wood.

Open to Graduates and Upperclassmen

500 Selected Experiences in Biology 2 hrs. Winter

Designed for pre-service or in-service elementary and secondary teachers who need to develop their background in biology. Problems to be studied will be selected under the guidance of the instructor. Laboratory work will consist of independent studies of living plants and animals. These will be done outside of class time, utilizing procedures outlined by the instructor. Prerequisite: consent of instructor.

502 Human Ecology 2 hrs. Fall

A study of the man-dominated biotic community of civilization and its interrelationships. Lectures, assigned readings, group and individual field work. Prerequisite: at least a minor in biology.

508 Recent Advances in Biology 2 hrs. Fall

Recent research findings at the frontiers of biology as reported in periodicals, symposia and biological meetings. Prerequisite: at least 12 hours of biology.

511 Physiology of Reproduction 2 hrs. Winter

A comparative study of the reproductive physiology of domestic animals, laboratory animals and man. Prerequisites: 217 or 317 and a working knowledge of biochemistry.

512 Health Problems 2 hrs. Fall

A course for students with special interest in the medical and public health areas. The pathology, treatment and control of the major causes of mortality and ill health are presented; broad background in biology and chemistry desirable.

515 Alcohol Problems 2 hrs. Fall

An objective study of a major social problem, examined critically with regard to its physiological, psychological, legal, cultural, and sociological aspects. Prerequisite: at least a minor in biology or sociology, or consent of instructor.

514 Advanced Microbiology 4 hrs. Winter

This course deals with pathogenic micro-organisms, infectious diseases, diagnostic tests and principles of immunology. Prerequisite: 412 or equivalent.

517 Cellular Physiology 3 hrs. Fall

Concerned with the details of structure and functioning of cells, both animal and plant. The current status of major problems in the field is considered. Laboratory work consists of individual projects. Prerequisite: 317 or 326 or consent of instructor.
518 Endocrinology 3 hrs. Fall
The glands of internal secretion, the active principles produced by each, and their effects on bodily metabolism. Prerequisite: 217 or 317 or consent of instructor.

519 Comparative Animal Physiology 4 hrs. Fall
A study of the basic physiological processes as they occur in various groups of animals. Prerequisite: 317 or equivalent.

521 Phycology 3 hrs. Fall
Studies in the classification, structure, physiology, ecology and economic importance of the fresh-water algae. Prerequisite: a 200 or 300 course in botany.

522 Phytogeography 3 hrs. Winter
A study of the geographical distribution of plants based on physical and ecological factors. Prerequisite: 321 or equivalent.

523 Paleobotany 3 hrs. Winter
A study of the characteristics, historical and evolutionary relationships of plants based upon the fossil record. At least two extended field trips are taken. Prerequisite: 221 or equivalent.

524 Economic Botany 3 hrs. Fall
A study of plants useful to man for food, flavoring, drugs, clothing and building. Field trips required.

525 Biological Constituents 3 hrs. Fall, Winter
The chemical elements present in plants and animals, as well as the synthesis, characterization and degradation products of the more important compounds. Prerequisites: 12 hours of biology, one year of chemistry.

526 Mycology 3 hrs. Fall
Studies in the classification, structure, physiology, development and economic importance of fungi. Prerequisite: a 200 or 300 course in botany.

527 Advanced Plant Physiology 4 hrs. Fall
Advanced investigations into plant functions. Basic principles are examined more intensively. Advantage is taken of the discoveries and unifying principles of modern biochemistry. Prerequisites: 326 and a course in chemistry or consent of instructor.

528 Morphology of Non-vascular Plants 3 hrs. Fall
A study of the classification, ecology and reproductive cycles of algae, fungi and bryophytes. Culture methods of growing these plants for research occupies a part of laboratory work. Prerequisite: 221 or equivalent.
529 Morphology of Vascular Plants 3 hrs. Winter
A detailed study of the morphology, life cycles, and evolution of vascular plants. Individual research required. Prerequisite: 221 or equivalent.

538 Field Natural History 3 hrs. Fall
The natural history of biological communities and their inhabitants with particular emphasis on areas accessible for use by public schools, e.g., school grounds, vacant lots, field borders, parks, and undeveloped areas. Primarily for teachers. Prerequisite: Biology 100 or 101 or consent of instructor.

542 Entomology 3 hrs. Fall
A general study of insects, their structure, classification, life histories, ecological relationships, and economic importance. Prerequisite: twelve hours of biology.

543 Protozoology 4 hrs. Fall
Field and laboratory studies of both free-living and parasitic protozoans, including taxonomy, morphology, life histories, ecology, heredity, and evolutionary development. Prerequisite: 341 or consent of instructor.

545 Ichthyology 3 hrs. Fall
The biology of fishes with special reference to systematics, adaptations and ecology or fresh-water and marine forms. Museum and experimental methods will be employed. Field trips will emphasize study of the Great Lakes region fishes. Prerequisite: 100 or 101 or equivalent.

547 Advanced Ornithology 4 hrs. Fall
Populations, life histories, anatomy, social behavior and environmental relationships of the birds of southwestern Michigan. Shore and marsh birds are given special attention. Individual studies, bird banding and the preparation of bird skins. Early morning field trips are scheduled. Prerequisite: 347 or consent of instructor.

548 Herpetology 3 hrs. Fall
Biology of amphibians and reptiles with reference to systematics, adaptations and ecology. Museum and experimental methods are emphasized in the laboratory. Field work is an integral part of the course with special consideration of Michigan herpetofauna. Prerequisites: 100 and 101 or equivalent.

549 Mammalogy 3 hrs. Winter
Biology of mammals emphasizing systematics, adaptations and ecology. Museum and experimental techniques will be employed. Field trips are an integral part of the course. Prerequisites: 100 and 101 or equivalent.

551 Parasitology 3 hrs. Fall
A study of parasites and host-parasite relationships as illustrated by typical representatives of the principal animal groups. Special atten-
tion is given to the parasites of man. Prerequisite: At least 12 semester hours of biology.

552 Plant Ecology 3 hrs. Fall

A consideration of the organization of vegetation and causal relationships between vegetation and environment. Prerequisites: 301 and 321 or 326 or equivalents.

553 Limnology 3 hrs. Fall

Biological, chemical and physical aspects of lakes and streams, with emphasis on ecological relationships of invertebrate animals and lower plants. Prerequisite: 301 or equivalent.

559 Radiation Biology 3 hrs. Fall, Winter

A study of the fundamentals of radiobiology including isotope technology, radiation measurements, radioactive decay, radiation and interaction in living matter, and health and safety regulations in the laboratory. Prerequisite: consent of instructor.

561 Vertebrate Natural History 3 hrs. Fall, Winter

The biology of vertebrates with special reference to evolution, adaptation, behavior, and ecology. Prerequisites: Biology 100, 101, and 306 or consent of instructor.

563 Zoogeography 2 hrs. Winter

A study of the geographical distribution of animals on historical and ecological principles. Prerequisites: Biology 100, 101, and 306 or consent of instructor.

570 Microtechnique 3 hrs. Fall

A study of the stains and techniques used in the preparation of tissues for microscopic study. Prerequisite: four semesters of work in biology.

598 Readings in Biology 1-3 hrs.

Independent studies for advanced students in special areas of interest. Arranged in consultation with graduate adviser.

599 Independent Studies in Biology 1-4 hrs. Fall, Winter

For advanced students who wish to carry on advanced work in special fields. Prerequisite: consent of instructor.

Open to Graduates Only

605 Advanced Studies in Genetics 4 hrs. Winter

Special problems in genetics, including a study of the genetic systems of populations and the formation of species. Lectures include material on the nature and function of the gene, and its relation to evolution. Prerequisite: at least a minor in biology, including a course involving an understanding of basic genetics.
606 Experimental Morphogenesis 4 hrs. Fall
A study of developmental anatomy in plants, with emphasis on experimental morphogenetic problems in the laboratory. Prerequisite: 529 or equivalent.

612 Advanced Studies in Microbiology 4 hrs. Winter
Individual studies in various fields in microbiology. Prerequisites: 412, 512 or equivalent.

618 Advanced Studies in Physiology 4 hrs. Fall, Winter
This course involves intensive study of physiology. Work may be assigned in the fields of plant physiology, animal physiology, or a combination of these. Subject matter to be determined by the interests of the group. Prerequisite: 519 or 527 or consent of instructor.

621 Taxonomy of Vascular Plants 4 hrs. Fall
Principles of plant systematics using examples from the vascular plants. Emphasis is placed on comparative morphology, experimental techniques, systems of phylogeny, classification, and nomenclature. Prerequisite: at least a minor in biology including Systematic Botany 321 or equivalent.

654 Advanced Studies in Ecology 4 hrs. Fall
Devoted to discussions and investigations in fields of current ecological interest. Prerequisite: at least a minor in biology, including a course in ecology.

CHEMISTRY

Meyer, Head; Professors Iffland, Knowlton and Osborn; Associate Professors Anderson, Holkeboer and Nagler; Assistant Professors Berndt, Brown, Frey, Harmon, Houser, Howell and Stenesh.

Open to Graduates and Upperclassmen

505 Chemical Literature 2 hrs. Winter
An introduction to the use of the various types of chemical literature such as journals, handbooks, abstracts, monographs, government and institutional publications and patents. Problems in the course require a search of the literature in the fields of analytical, inorganic, bio, organic and physical chemistry. Prerequisite: 24 hours of Chemistry.

520 Advanced Analytical Chemistry 3 hrs.
The theory and technique involved in the more complex separations and determinations in quantitative analysis. In addition to gravimetric and titrimetric methods, such as physiochemical methods spectrophotometry, colorimetry, chromatography, and potentialmetry are discussed. The laboratory work is an application of the above techniques. Prerequisites: 531 and 222.
530 Physical Chemistry 4 hrs. Fall
Includes studies of gases, liquids, solids, solutions, thermodynamics, molecular structure, thermo-chemistry, colloids, etc. Prerequisites: Physics 113, and Calculus 223.

531 Physical Chemistry 4 hrs. Winter
A continuation of course 530. The course includes study of surface chemistry, macromolecules, electro chemistry, homogeneous equilibria, heterogeneous equilibria, quantum theory, etc. Prerequisite: Physical Chemistry 530.

540 Food Chemistry 2 hrs. Fall
This is a discussion and laboratory course on the chemistry of foods for such important components as carbohydrates, proteins, fats, minerals, vitamins, and food pigments. Prerequisite: 222, 361 or 363.

551 Biochemistry 2 hrs. Winter
Elementary study of the chemistry of the body, digestion, metabolism, excretion. Prerequisite: 361, 363, or 265.

553 Biochemistry 4 hrs. Winter
An elementary study of modern biochemistry consisting of lectures and laboratory.

560 Qualitative Organic Analysis 3 hrs. Fall
A course in the methods of identification of organic compounds in the pure state and in mixtures which has as secondary goals the familiarization with many organic reactions and the development of deductive reasoning in the field of organic chemistry. Prerequisites: 361 or 363, and 24 hours of chemistry.

564 Organic Preparations 2 hrs.
A course in the application of principles and techniques of handling aliphatic and aromatic compounds on a preparative scale. Typical standard procedures are assigned. Emphasis is placed on good yields as well as quality of product. Eight hours of laboratory each week. Consult instructor before enrolling. Prerequisite: 361, and consent of Head of Department.

580 History of Chemical Theory 2 hrs.
The history of chemical theory in which the evidence for the theories is critically presented. Prerequisite: 24 hours of college chemistry, or consent of Head of Department.

590 Special Problems in Chemistry 2 hrs. Fall
Advanced students who have completed certain basic work in chemistry may select a special problem in the fields of analytical, organic, bio or physical chemistry. Prerequisite: 24 hours of chemistry and consent of Head of Department. Given on request.
591 Special Problems in Chemistry 2 hrs. Winter
A continuation of special problem work started under 590. Given on request.

Open to Graduates Only

601 Graduate Seminar 1 hr. Fall, Winter
Graduate seminar in Chemistry. Required of all candidates for the master's degree in Chemistry. (Two semesters, 1 hr. credit)

605 Advanced Chemistry Laboratory 2 hrs. Spring
Methods of working under controlled atmospheres and conditions, manipulations of low boiling point substances, and unstable or reactive substances, and other procedures not generally covered in the elementary laboratory courses. These will be applied to problems in preparation and separation of compounds, determination of equilibria, rates of reactions, and measurements of physical properties.

610 Advanced Inorganic Chemistry 3 hrs. Fall
Covers the principles of inorganic chemistry and the chemical elements. Such topics as extranuclear structure of the atoms, periodic classification of the elements, valency and the chemical bond, complex ions and coordination compounds, acids and basis, and nonaqueous solvents are included in the study of chemical principles. The remainder of the course concerns the chemical elements and their compounds. Prerequisite: 24 hours of chemistry.

613 Current Developments in Chemistry 2 hrs.
Five or six new developments selected from significant advances in chemistry will be considered. Course content will vary from year to year with growth of the science. Prerequisite: 16 hours in chemistry. Not offered in 1964-65.

630 Advanced Physical Chemistry 3 hrs. Winter
Includes a more intensive study, than was possible in Introductory Physical Chemistry, of the following fields: kinetic molecular theory, statistical mechanics, thermodynamics and quantum theory. Applications will be made to equations of state, molecular diameters, reaction kinetics, dipole moments, heat capacities, spectra, and their relation to molecular structure. Prerequisite: 531.

631 Colloids 2 hrs.
The fundamentals of colloid chemistry including the nature of the colloid state, adsorption, types of colloids, method of colloid formation, properties of colloids, plastics and polymers. Prerequisite: 531.

632 Electrochemistry 2 hrs.
Includes chemical thermodynamics, conductivity of solutions, transport number, electrode potentials, electrolysis and over voltage. Prerequisites: Physics 113, Calculus 531, and 222. Not offered 1965-66.
650 Advanced Biochemistry 3 hrs. Fall

An advanced course in macromolecules dealing mainly with proteins and secondarily with nucleic acids. Topics covered include physical techniques for studying macromolecules such as ultracentrifugations, diffusion and viscosity; isolation and verification of protein; structure and properties of proteins and nucleic acids; protein biosynthesis; properties of enzymes and the kinetics of enzyme reactions. Prerequisite: 551.

660 Advanced Organic Chemistry 3 hrs. Summer

The following topics are considered: relation between structure and reactivity of organic compounds, stereochemistry, chemistry of the hydrocarbons (particularly the alkenes) and chemistry of carbonyl compounds. Prerequisite: 361 or 363.

ECONOMICS

Bowers, Head; Professors Carlson and Ross; Associate Professors Beinhauer, Copps, Gardner, Junker, Wend and Zelder; Assistant Professors Narasimham and Sichel.

Open to Graduates and Upperclassmen

500 Managerial Economics 3 hrs. Fall

Describes and illustrates the ways in which the tools of the economist can be useful to industrial management in its analysis of the past and present experience of the firm and, in particular, in its efforts to arrive at intelligent decisions with respect to the future. The course deals with the basic types of decisions management faces including the analysis of demand, costs, and capital requirements. Prerequisite: 200.

503 Price Theory 4 hrs. Fall, Winter

A basic course in economic theory with emphasis on production and income distribution theory. Prerequisite: Principles of Economics.

504 Industrial Structures and Competition 4 hrs. Winter

A logical continuation of Price Theory 503. An appraisal of those parts of extant price theory which are most directly applicable to the industrial sector of the economy. The interest of this course will center on the areas where markets are characteristically monopolistically, competitive or oligopolistic. Prerequisite: Price Theory 503 or the consent of the instructor.

505 History of Economic Thought 4 hrs. Fall

A survey of the origin and development of economic thought from early times to the present. After a brief consideration of early mercantilism and the evolution of the philosophy of natural liberties special emphasis will be placed on the contributions of significant economic thinkers and the influence of erroneous schools of economic thought on national policy and economic development. Prerequisite: 200.
507 Monetary Theory and Policy 3 hrs. Winter

This course would concentrate on the main elements of monetary theory and policy, having to do with such problems as promoting economic growth, maintaining full employment and price stability, influencing the flow of capital into the various economic sectors with different possible social goals in mind, and stabilizing international trade and financial relationships. This course would stress American experience, but would also give considerable attention to the monetary problems and policies of other important nations. Prerequisite: 320.

508 Institutional Economics 4 hrs. Winter

An intensive examination of heterodox economic theory, conceived in terms of the basic social concepts of institutions and technology, and utilizing developments in modern social science for the resolution of persistent economic problems. Prerequisite: Principles of Economics.

509 Econometrics 3 hrs. Winter

An introductory course in analytical and quantitative methods in economics. Applied economic problems like linear programming, input-output analysis will be considered. Simple regression models and their uses in economics are also included. Prerequisites: 200, Math 122, or consent of instructor.

510 Labor Problems 3 hrs. Fall, Winter

An analysis of the nature and underlying causes of the problems facing the worker in modern society. Includes an examination of unions, collective bargaining, labor legislation, wages, unemployment and economic security. Prerequisite: Principles of Economics.

512 Collective Bargaining 3 hrs. Winter

An analysis of the major problems in present-day collective bargaining including the negotiation of collective agreements, the practical aspects and the economic implications. Prerequisites: Labor Problems 510 or consent of instructor.

513 Economic Security 3 hrs. Fall

An analysis of the problems of the individual worker and the efforts of the government to aid in the solution of these problems. It deals with unemployment, old age, benefits and medical care.

514 Labor and Government 3 hrs. Winter

Deals with the government's role in the problem arising from labor-management relations and from labor's search for security. It covers the court's attitude toward labor organization from the rule of conspiracy through Taft-Hartley. It also includes protective legislation and the development of security legislation.

536 Advanced Consumer Economics 3 hrs. Winter

A study of the place of the consumer in the economic system. The relationships of personal income to price levels, and of consumer liquid assets and availability of consumer credit to total consumer demand.
will be analyzed. Special consideration will be given to the role of the consumer in determining the amount of national income and the stability of the economic system. Prerequisite: Principles of Economics or Economics of Consumption.

542 Business and Government 4 hrs. Fall

A study of the regulatory policies of government and their impact on private enterprise. The course seeks to explain the need for regulation, and to provide an analysis and evaluation of the various laws from the viewpoint of encouragement, subsidization and control. Special attention will be directed to certain aspects of concentration of economic power, public ownership and nationalization programs. Prerequisite: Principles of Economics. Work in political science may be substituted in special cases by permission of the instructor.

584 Comparative Economic Systems 4 hrs. Fall

The economic institutions and conditions of capitalism, socialism, communism, fascism and the cooperative movement are critically examined as to ideology and actual operation. Prerequisite: Principles of Economics.

586 The Economics of the Soviet Union and Eastern Europe 3 hrs. Winter

A study of Soviet and East European planning practices including an examination of the development in commerce, agriculture and industry in these areas. Also trade among the several East bloc nations will be covered. Prerequisites: Economics 200, 201.

587 Studies in Asian Economics 3 hrs. Winter

The course concentrates on the study of the Japanese, Chinese and Indian economic systems. These models are then applied as basis of comparison to the other Asian economies.

588 Economic Development 3 hrs. Winter

An analysis of the economic factors such as population, resources, innovation and capital formation which affect economic growth. Selected underdeveloped areas will be studied to understand the cultural pattern and economic reasons for lack of development and the steps necessary to promote economic progress. Special attention will be paid to evaluating the effectiveness of the United States foreign-aid program and examining the issues arising as a result of the conflict with the U.S.S.R. Prerequisite: Principles of Economics.

590 Contemporary Communism—A Survey 2 hrs.

This workshop on Communism is designed to give the student an insight for the range of problems that resulted from the spread of Communism in the wake of World War II. The philosophy, economic doctrines, and government of Communism will be covered. The Workshop will be of particular value in acquainting teachers with the available materials on Communism.

154
598 Readings in Economics 1-3 hrs. Fall, Winter

An independent program of study for qualified advanced students to be arranged in consultation with the instructor. Prerequisite: Consent of department head.

Open to Graduates Only

604 Economic Problems 3 hrs. Fall

Some contemporary economic problems in such areas as economic security, labor relations, finance matters related to public expenditures and taxation, governmental controls and the balance between freedom and order are analyzed and studied. Some previous work in economics is desirable but not mandatory.

606 Seminar in the Evolution of Economic Thought 4 hrs. Winter

A critical study and evaluation of the various schools of economic thought with special emphasis on the ideas and theories of the leading economists in the classical, romantic, historical, socialist, neo-classical, institutional, Keynesian, and welfare economic schools. Individual research will provide the basis for class discussion. Prerequisite: A minimum of 9 credit hours including Economics 200.

609 Seminar in Economics 2 hrs. Winter

Offers the graduate an opportunity to investigate contemporary problems in economic theory and analysis. Prerequisite: 4 hours of advanced economic theory or consent of staff.

612 Labor Union Structure and Practice 3 hrs. Fall, Spring

An analysis of the government and operation of American labor unions with particular reference to the problems of union leadership, disciplinary procedures, membership control and the economic and social consequences of these practices.

628 Applied Economics for Teachers 2 hrs. Winter

Designed as a modern aid to in-service teachers and others who desire practical help in managing some of their economic affairs which are more personal than professional. Among items stressed are credit buying, savings, insurance programs, home ownership vs. renting, personal investments, taxes, wills and trust plans.

662 National Income Analysis 3 hrs. Winter

A basic course in economic theory with emphasis on modern theories of output of the economy as a whole and on the uses of these theories as guides to policy. Prerequisite: Economics 200.

ENGLISH

Rogers, Head; Professors Callan, Denenfeld, Holaday, Limpus, Malmstrom, Miller, Nelson and Sadler; Associate Professors Galligan, Macrorie, McNally, and Woods; Assistant Professors Bahlke, Carlson, Combs, C. Goldfarb, R. Goldfarb, Phillips, Rowe and Shafer.
Open to Graduates and Upperclassmen

519 Studies of Non-Western Literatures in Translation 4 hrs.
Studies of significant forms in Chinese, Indian, and other non-western literatures and of their relation to the values and patterns of a particular society. Not offered 1965-1966.

522 Movements in American Literature 4 hrs. Fall
Study of a movement or movements in American literature, such as romanticism, realism, naturalism. Prerequisite: 210.

530 Medieval Literature 4 hrs. Winter
Readings in medieval drama, lyric and narrative poetry, and romances as an introduction to Dante's *Divine Comedy*. All in translation.

531 Studies in the Age of Chaucer 4 hrs. Fall, Winter
Readings in the major works of Chaucer and other representative medieval authors. Prerequisite: 210.

534 Neo-Classical Literature 4 hrs. Fall
English literature 1660-1730 with major emphasis on Dryden, Pope, and Swift. Prerequisite: 210.

535 Eighteenth-Century Literature 4 hrs. Winter

536 Romantic Literature 4 hrs.

537 Victorian Literature 4 hrs.

555 Studies in the Art and Thought of Major Writers 4 hrs. Winter
Study of the works of individual writers of genius selected from among classical writers, European writers, British writers, or American writers; taught by members of the Philosophy and English departments.

566 Creative Writing Roundtable 4 hrs. Fall, Winter
An advanced course in the writing of poetry, fiction and/or drama, with class criticism of each student's writing. The course may be taken again for credit.

598 Readings in English 1-3 hrs. Fall, Winter
Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each student. Approval of graduate English adviser required. May be elected more than once.
Open to Graduates Only

622 Studies in American Literature 3 hrs. Winter
The advanced study of selected aspects of American literature. Prerequisite: one course in American literature or the consent of the graduate English adviser.

640 Poetics 3 hrs. Winter
Systematic analysis of a number of poems with regard to tone, statement, imagery, prosody, and other formal elements. Prerequisite: 210.

641 Studies in Modern Poetry 3 hrs. Fall
An intensive study of the writings of several modern poets. Prerequisite: 210.

642 Studies in European Drama 3 hrs.
Selected areas of European drama in translation from classical times to the present. Not offered 1965-1966.

643 Studies in British Drama 3 hrs.
Selected areas, other than the Shakespearean, of British and Irish drama from medieval times to the present. Not offered 1965-66.

644 The Novel: Form and Technique 3 hrs. Fall
An examination of the significant forms and techniques employed in the novel from its prototypes through its more recent development.

645 Studies in the Modern Novel 3 hrs. Winter
An intensive study of the works of some important novelists of the twentieth century. Prerequisite: 210 or permission of the graduate English adviser.

652 Studies in Shakespeare: Tragedy 3 hrs. Fall
Selected tragedies of Shakespeare. Prerequisite: an undergraduate course in Shakespeare.

653 Studies in Shakespeare: Comedy 3 hrs.

660 Methods of Research in English 3 hrs. Fall
Practice in the efficient use of library resources for studies in literature and language. Prerequisite: permission of graduate English adviser.

661 Seminar in English 3 hrs. Winter
Study of a problem involving an author, a period, or a genre. Prerequisite: 660 Methods of Research in English.

668 Literary Criticism 3 hrs. Winter
A study of the major critical treatises. Prerequisite: two courses in English beyond the required freshman English course.
674 Structure of Modern English 3 hrs. Fall
A study of modern English grammatical theory and practice. Prerequisite: 270 or consent of graduate English adviser.

680 Teaching of High School English 3 hrs. Winter
A study of recent theories and methods of teaching literature and language in the high school.

681 Teaching of Freshman English 3 hrs.
A consideration of the philosophies underlying various courses in freshman English and of methods suited to teaching the communication skills. Not offered 1965-66.

GEOGRAPHY AND GEOLOGY

Jackman, Acting Chairman; Professors Horst and Stout; Associate Professors Kirchherr, Moore, Schmaltz; Assistant Professors Eichenlaub, Heller, McGehee and Raup.

Courses in Systematic Geography
Open to Graduates and Upperclassmen

540 Political Geography 3 hrs. Fall
This course introduces the principles and concepts of political geography as they interact in the evolution of the modern political state. Geopolitical concepts of boundaries and frontiers, the “organic” State, Geopolitik, and theories of global relationships are treated in some detail. Prerequisite: Geography 105 or consent.

541 Geographic Foundations of National Power 3 hrs. Winter
In contrast to the principles and concepts treated in Geography 540, this course takes up the applications of political geography to world power relationships; analyzes the components of national power in their physical and cultural relationships; concepts of autarky, national determinism, possibilism, and supra-nationalism will be studied. Prerequisite: Geography 105 or graduate standing.

542 Historical Geography of North America 3 hrs. Winter
A study of the geographic and related factors as they combined to influence routes of exploration, trade, settlement and travel in North America. The evolution of patterns of settlement which resulted from the interaction of physical and cultural geographic conditions are studied in relation to the development of the continent for human use. Prerequisite: Geography 105.

543 Cultural Geography 3 hrs. Fall
A consideration of the major aspects of the relationship between the physical environment and human occupancy will be followed by more detailed study of the types of livelihood in their geographic settings, population geography, and the urban environment. The place of origin
and patterns of distribution of various cultural systems will be traced. Each semester, certain of these relationships will be singled out for intensive study. Prerequisite: Geography 105 or consent.

544 Agricultural Geography 3 hrs. Winter

A course designed to acquaint the student with world patterns of farming activity, and food distribution. The first part of the course is concerned with the description and analysis of: (a) the distribution of major world crops and domestic animals, and (b) the most common combinations of crops and livestock on farm units. The second part of the course deals with the spatial organization of agriculture in certain selected areas. Prerequisite: Geography 244 or consent. Not offered 1965-66.

546 Manufacturing and Transportation Geography 3 hrs. Fall

The study of the world's dominant manufacturing types, individually and as they occur in association with one another and of the transportation systems that link material sources, manufacturers, and markets. Prerequisite: Geography 244.

556 Land Use Planning 3 hrs. Fall

An examination of the philosophy and role of land-use planning at the national, regional, and local levels; study of those decisions involved in the establishment and design of long-range plans for land utilization, and methods of implementation. Prerequisite: Consent of instructor.

570 Urban Geography 4 hrs. Winter

The study of urban settlements as distinctive geographical units. Among the more significant topics considered are (1) the historical geography of urbanization, (2) characteristics of urban forms in selected world regions, (3) approaches to the functional classification of cities, and (4) the analysis of land use patterns and transportation in the modern city and metropolitan region. Special assignments are designed to acquaint the student with source materials and field techniques utilized in urban research. Prerequisite: Geography 244 or junior standing with at least a minor in geography or the social sciences.

Open to Graduates Only

620 Seminar in Physical Geography 3 hrs. Fall

A review of the current literature and recent developments in the disciplines which become synthesized in physical geography. Each student will explore some aspect of the field in depth. Prerequisites: Geology 532, and Geography 621 and 622, or consent.

621 Studies in Climatology and Meteorology 3 hrs. Winter

Studies at an advanced level in climatology and meteorology. Examination and application of dynamic, complex, and synoptic methods of climatic description. Particular emphasis is given to regional climatic and meteorological phenomena and their relation to the general atmospheric circulation. Prerequisite: Geography 105 and 225 or consent.
Studies in Soils and Vegetation Geography 3 hrs.

Soil and vegetation patterns are studied to develop the principles and explain the factors which account for areal variation in soil-plant associations. Prerequisites: Geography 105, Introduction to Soils 320; and Biology 100 and 101, or 107; or consent. Not offered 1965-66.

Seminar in Political and Military Geography 3 hrs. Winter

A review of current literature and recent developments in both political and military geography. The geopolitical and geostrategic aspects common to both will be emphasized. Prerequisite: Geography 540, 541, and background in history, politics, and economics; or consent.

Seminar in Historical and Cultural Geography 3 hrs.

A review of current literature followed by selection and study of some aspect of the subject in depth. Prerequisite: Geography 542, 543; or consent. Not offered 1965-66.

Seminar in Economic Geography 3 hrs. Winter

A review of the current literature with emphasis on important developments in economic geography. Prerequisite: Geography 244; or consent.

Seminar: Urban Geography 3 hrs. Fall

A review of the current literature and recent methodological developments in the field of urban geography. Prerequisite: Geography 570 or consent.

Courses in Regional Geography

Open to Graduates and Upperclassmen

South America 3 hrs. Fall

Regional study of the nations of South America with attention to the interrelationships of the physical and cultural environments. Historical background necessary for the interpretation of the present political, social and economic conditions is included. Prerequisite: Geography 105.

Middle America 3 hrs. Winter

Systematic consideration of the physical environment of Mexico, Central America and the West Indies. A problems approach is utilized to reckon with the economic, social and political trends of the region. Prerequisite: Geography 105.

Western and Southern Europe 4 hrs. Fall

Intensive regional study of those Western European nations situated west of the Iron Curtain. The physical elements (climate, landforms, resources, etc.) are examined and the associated cultural elements are identified. Emphasis is placed upon the social and economic activities of contemporary Western Europe. Prerequisite: Geography 105 or consent.
514 U.S.S.R. and Eastern Europe 4 hrs. Winter
Analysis of the physical and cultural geography of the Soviet bloc in the U.S.S.R. and Satellite Nations; survey of the natural environment, resources and human occupancy. Prerequisite: Geography 105 or consent.

515 Monsoon Asia 4 hrs. Winter
Intensive study of the physical and cultural environments of the countries of southern and eastern Asia (from Pakistan to Japan). Problems of population, food supply, and industrial resources are considered in view of the emergence of the states of Monsoon Asia on the world political scene. Special attention is given to the developing economies of Southeast Asia, the role of Japan, and the comparative study of China and India. Prerequisite: Geography 105 or consent.

516 Middle East and North Africa 3 hrs. Fall
Study of the diversity and uniformity—both physical and cultural—of the Middle East and Africa north of (and including) the Sahara. Special attention is given to aridity problems, economic development, petroleum, Arab re-unification movements, and the impact of the Muslim World on the current political scene. Prerequisite: Geography 105 or consent.

517 Middle and South Africa 4 hrs. Fall
General survey of the broad physical realms and the background of contemporary political geography in Africa south of the Sahara; followed by interpretive studies of the major regions and states based on an examination of population distribution, the characteristics of subsistence and commercial agriculture, the availability of power and mineral resources, patterns of transportation, and current programs for regional development. Prerequisite: Geography 105 or consent.

518 The Pacific Realm 3 hrs. Winter
The human and physical geography of the South and Central Pacific, with concentration on Australia, New Zealand, Fiji, and Polynesia. Prerequisite: Geography 105.

Open to Graduates Only

610 Seminar in Regional Geography 3 hrs. Winter
Latin America will be offered in winter 1966.
An intensive study of selected problems of various world regions such as Latin America, Monsoon Asia, Middle East, Sub-Saharan Africa, Southwest Pacific, or U.S.S.R. Regional specialization will vary from semester to semester, permitting students to repeat the course for credit as long as subject matter is different. Subject for any particular semester will be indicated in advance of offering.

695 Background of Contemporary Problems in Michigan 3 hrs.
An intensive interdepartmental course designed to explore in depth the historical and geographical backgrounds of several outstanding present-day problems in Michigan in the areas of resource-use, conser-
vation, agriculture, industry, and urban-rural conflicts. Resource people from other disciplines, governmental agencies and business will provide for a well-rounded treatment of the major problems of Michigan. Prerequisite: Geography 510 or History 310.

### Courses in Geographic Methodology and Research

**Open to Graduates and Upperclassmen**

**566 Field Geography** 4 hrs. Fall

The theory and application of geographic techniques in field investigations; collection and analysis of field data; preparation and presentation of materials. The course is based primarily upon field observations. Prerequisite: Geography 380 or consent.

**568 Quantitative Methodology in Geography (Phy. Sci. Credit)** 3 hrs. Winter

The application of quantitative concepts and methods to the solution of geographic problems. Critical review of research in quantitative geography ranging from the use of common statistical techniques to methods of model formulation in the analysis of spatial interaction. Prerequisite: A course in statistics or consent.

**580 Advanced Cartography (Phy. Sci. Credit)** 3 hrs. Winter

Study of the more complex map projections, the compilation of data and the design of maps and graphs for research papers, and the application of statistical techniques in mapping geographic phenomena. Students are assigned special problems to develop their proficiency in the use of cartography as a tool in research. One hour lecture and 2 two-hour labs. Prerequisite: Geography 380 or consent.

**582 Aerial Photograph Interpretation (Phy. Sci. Credit)** 3 hrs. Winter

The student will acquire proficiency in the fundamental skills of aerial photographic interpretation during the early weeks of the course. Projects assigned during the final weeks will be adapted to the interest and anticipated future work of the student in physical or social sciences.

**598 Readings in Geography** 1-3 hrs. Fall, Winter

Designed for highly qualified majors and graduate students who wish to study in depth some aspect of their field of specialization under a member of the departmental staff. Prerequisite: Consent of departmental adviser and instructor.

**Open to Graduates Only**

**661 Geographic Research and Source Materials** 3 hrs. Fall

Introduction to problem formulation and research design in the investigation of geographical topics, and the preparation of research studies following currently accepted practices of professional geographers. Special attention to professional literature, geographical bibliographies, map intelligence, procedures of information retrieval and
documentation, and data processing. Graduate students in geography are expected to complete this course before enrolling for thesis research. Prerequisite: Consent of departmental adviser and instructor.

664 The Development of Geographic Thought 3 hrs. Winter

The evolution of the philosophies, concepts and methods in use by geographers today is traced and evaluated. Prerequisite: An undergraduate major or minor in geography and consent of instructor.

Courses in Geology

Open to Graduates and Upperclassmen

532 Geomorphology 3 hrs. Winter

A systematic study of the development of land forms as created by the processes of vulcanism, gradation, and diastrophism with interpretation of topographic and geologic maps, and aerial photographs. Prerequisite: Geology 130 or 230.

533 Invertebrate Paleontology 4 hrs. Fall

Morphology, classification, evolution, and stratigraphic distribution of major invertebrate fossil groups. Three lectures and a three-hour laboratory. Prerequisite: Geology 231.

535 Stratigraphy 3 hrs. Winter

Principles of stratigraphy including sedimentation, correlation, facies, tectonics, and sedimentary environments and rocks. Prerequisite: Geology 231.

536 Glacial Geology 3 hrs. Winter

A study of the mechanics of glacier movement, processes of glacial erosion and deposition, and the distribution of glacial features in space and time. Special emphasis will be placed on the glacial geology of the Great Lakes area. Prerequisite: Geology 230 or consent of instructor.

538 Oceanography 3 hrs. Fall, Winter

Physical oceanography and submarine geology. A study of the physical properties of sea water, boundary processes, ocean currents, water masses and circulation in the ocean. Consideration will be given to sedimentary processes, marine sediments and their history, continental shelves, the development of coral reefs, and topography of the ocean floor. Prerequisite: Geology 130 or 230 or consent of instructor.

539 Field Geology 4 hrs.

A study of geologic materials and features in the Upper Great Lakes region. Prerequisite: Geology 130 or 230.

Open to Graduates Only

631 Geology for Teachers 4 hrs.

A study of the more common rocks, minerals and fossils and a consideration of rock structures and the development of landforms with
special emphasis upon Michigan and the Great Lakes Basin. Three hours of lecture and two hours of laboratory.

HISTORY

Dunbar, Head; Professors Brown, Elsasser, Macmillan, Mange, Mowen and Starring; Associate Professors Breisach, Brunhumel, Callan, Castel and Hamner; Assistant Professors Cordier, Hahn, Holder, Hawks, Nahm, Nadel and Sommerfeldt.

I. Courses Dealing with a Restricted Chronological Period or Special Phase of History

Open to Graduates and Upperclassmen

A. Intellectual History

506 Intellectual History of Western Man to 1550 2 hrs. Fall
A study of the leading ideas and intellectual movements in western civilization from the earliest times to about 1550.

507 Intellectual History of Western Man Since 1550 2 hrs. Winter
Modes of thought and expression characteristic of the Renaissance; the scientific revolution of the 17th century; classicism and the baroque in literature and the arts; the 18th century Enlightenment; liberalism and nationalism in the 19th century; materialism and socialism, formation and leading features of the contemporary world view.

509 American Intellectual History 4 hrs. Fall
The development of American thought from colonial times to the present. The writings and ideas of leading American philosophers, educators, theologians, political scientists, economists, and scientists will be read and discussed.

B. United States History

510 Field Courses in Michigan History 3 hrs.
Preliminary readings and lectures are to be followed by about sixteen days of bus travel visiting places of historic interest.

511 Historical Museums Workshop 3 hrs.
This course will consist of lectures, demonstrations, field trips, reading, discussion, and work experiences in museum theory and technique. Not offered 1965-66.

516 Constitutional History of the U.S. to 1877 3 hrs.
The development of constitutional theory and practice, with emphasis on the establishment of the governmental system and federal-state relations. Not offered 1965-66.
517 Constitutional History Since 1877 3 hrs.
Continuation of course 516 down to the present, with emphasis on federal regulation of the economy and civil rights. Not offered 1965-66. Prerequisite: course 516 or consent of instructor.

518 History of United States Foreign Relations 3 hrs. Winter
The formation and evolution of United States foreign policy and foreign relations from the beginnings of the republic to the present.

520 Colonial America 3 hrs. Fall
The English colonies in America, both continental and island, 1607-1763, with emphasis on the development of institutions and imperial policy and administration.

521 Era of the American Revolution 3 hrs. Fall, Winter
The causes, character, and consequences of the American Revolution.

522 The Early National Period, 1789-1848 4 hrs. Fall
The establishment of the national government; political, social, and cultural development; Jacksonian democracy; westward expansion.

524 The Civil War and Reconstruction 3 hrs. Winter
Causes and course of the Civil War; its significance and aftermath.

532 From Reconstruction to the Great Depression: 1877-1929 4 hrs. Fall
An intensive study of industrialism and urbanization, overseas expansion, progressivism, World War I, the 1920's, and the causes of the Great Depression.

533 Recent U.S. History: 1929 to the Present 4 hrs. Winter
The New Deal, the coming of World War II and the impact of the War; America's role in the post-war period.

C. History of European Nations

511 The U.S.S.R. in World Affairs 3 hrs. Fall
The ideological, psychological, political, and economic factors in the evolution of Soviet foreign policy with respect to individual countries, international problems and outer space.

542 Social and Cultural History of the U.S.S.R. 3 hrs. Winter
The history of the principal ethnic groups of the U.S.S.R., Soviet policy towards these groups, and the extent of their assimilation into Soviet society.

544 Medieval England 3 hrs. Fall
English history during the Middle Ages, especially the period after the Norman conquest; the development of economic, social, religious, and governmental institutions.

545 Victorian England 3 hrs. Winter
The character of Victorian England and its impact on the world.
D. European History

552 The Medieval Church
The impact on Christianity of classical culture, and the barbarian invasions; the church and feudalism; church-state relations; the rise and fall of papal theocracy, scholasticism, and mysticism.

533 Social and Economic History of the Middle Ages
The feudal system, the role of merchants and bankers, education, life in the town, medieval science and the arts.

554-555 The Renaissance and Reformation
(554) The Renaissance: life, thought, and art of the period; humanism, social and economic life in Renaissance Europe and (555) The Reformation: The breakup of the Medieval church and its significance.

557 Seventeenth Century Europe
The Thirty Years War and the shifting of power relationships; colonial enterprise and colonialism; absolutism; the rise of science; the baroque spirit.

558-559 The Old Regime, the French Revolution and Napoleon
(558) The Old Regime: the development of absolutism; institutions, life and thought of the 18th century with special emphasis on France and (559) The French Revolution and the Napoleonic era; the overthrow of the French monarchy; the rise and fall of the Napoleonic Empire; the spread of revolutionary principles throughout Europe.

560 Continental Europe, 1815-1914
The reaction following the Napoleonic wars; revolutions in behalf of liberalism and nationalism; the emergence of new states; the growth of nationalism and imperialism.

562 Europe From 1914-1945
The origins and nature of World Wars I and II; the Great Depression; rise of Fascism, Nazism, and Communism.

563 Europe Since 1945
The recovery of Europe from World War II; the movement towards European unity. The cold war; NATO and the defense of free Europe.

E. Latin America and Canada

571 Mexican History
The evolution of Mexico from the Wars of Independence to the present, with special attention to relations with the United States.
575 Canadian History 4 hrs. Fall

A survey of Canadian History from the time of the earliest French settlements to the present with emphasis on Canada's political and economic development within the British Commonwealth of Nations.

F. The Far East and Africa

580 China Since 1912 3 hrs.

The impact of the West on China before and after the Revolution of 1912; transition from Nationalism to Communist China; origins and growth of Communist China, its impact on world peace, its aims and aspirations. Not offered 1965-66.

581 Modern Japan 3 hrs. Winter

The opening of Japan to the West; the rise of Japanese militarism; World War II; the Allied occupation; Korea under Japanese rule; domestic and foreign affairs since World War II.

588 Africa in the Twentieth Century 3 hrs. Winter

Political, social, and economic developments in Africa south of the Sahara, 1885 to the present; the rise and fall of colonialism in Africa and the emergence of independent states.

II. General Courses

592 The Literature of History 2 hrs. Winter

Selected writings of great historians with the purpose of evaluating different approaches to history, the use of sources, handling of controversial matters, and developing appreciation of good history.

593 The Philosophy of History 2 hrs. Fall

An inquiry into the conscious and unconscious attitudes toward history, which, when systematized, are philosophies of history. The thought and positions of such thinkers as St. Augustine, Ibn Khaldun, Marx Dilthey, Spengler, Toynbee, and Jaspers.

594 War in the Modern World 3 hrs. Winter

The evolution of military theory and doctrine; modern mobile warfare; guerilla and revolutionary warfare since World War II; strategic problems in the era of ballistic missiles.

598 Independent Research in History 2-3 hrs. Fall, Winter

Research on some selected period or topic under supervision of a member of the History faculty. Approval of instructor involved and chairman of the Department Honors Committee must be secured in advance of registration.
III. Service Courses

569 Background of Recent European History 2 hrs. Winter
For seniors and graduate students not majoring in History. The movement forward European unity; the cold war; currents of contemporary thought; economic development; changing political and cultural patterns.

629 The West in American History 2 hrs. Fall
Especially for graduate students not working for a M.A. in history. Exploration, trade, transportation, settlement, Indians, land, and government developments and problems are studied. (Open only to Graduate Students.)

IV. Courses Open Only to Graduate Students

A. Studies in History (courses in which, through lectures, reading, reports, and discussion topics in an historical field are explored in depth. Where only general field is indicated, the specific field will be specified in the schedule of classes when the course is offered.)

610 Studies in Michigan History 3 hrs.
628 The History and Culture of the Old Northwest 3 hrs. Winter
637 Studies in Recent United States History 3 hrs.
Not offered 1965-66.
652 Medieval Studies 3 hrs. Fall
658 The Enlightenment 3 hrs. Winter
662 Studies in Russian History 3 hrs.
Not offered 1965-66.
664 France Since Napoleon 3 hrs. Winter
667 Studies in Recent European History 3 hrs.
Not offered 1965-66.
686 The Far East Since 1945 3 hrs. Fall
695 The Background of Contemporary Michigan Problems 3 hrs.
Offered in cooperation with the Geography Department.
Not offered 1965-66.

B. Seminars (Courses which focus on research and the preparation of papers. The specific field of each seminar, when offered, will be indicated in the schedule of classes)

626 Seminar in Early American History 2 hrs. Winter
636 Seminar in Recent American History 2 hrs. Spring
646 Seminar in Ancient and Medieval History 2 hrs. Winter
656 Seminar in Early Modern European History 2 hrs. Fall
666 Seminar in Recent European History 2 hrs.
Not offered 1965-66.
C. Professional Courses

690 Historical Method 2 hrs. Fall

Designed to introduce students to and familiarize them with the tools, techniques, and principles of historical research and writing. The principal reliance is upon exercises in the application of historical method to specific problems.

LANGUAGE

Wonderley, Head; Professor Rothfuss; Associate Professors Giedeman, Jones, Noble, Osmun, and Salz.

Language Teaching Courses

Language 558 Modern Language Instruction 3 hrs.

Primarily for prospective teachers of French, German, Russian or Spanish in the secondary and elementary school. Problems common to the four languages are considered. The bases for the course are the principles underlying language learning and current methodology and practice.

The comparable teaching course for Latin, 557 Teaching of Latin, is described under Latin offerings.

French

Open to Upperclassmen and Graduate Students

French 541 Summer Proseminar in France 4 hrs.

A summer study of French language, literature, and culture concentrated at Grenoble and Paris. Designed especially for teachers and advanced college students of French, the course consists of three weeks of formal classes at the University of Grenoble with regularly scheduled lectures and discussions in the French language on questions relating to French history, institutions, social problems, linguistics, and teaching methods. The session at Grenoble is supplemented by twelve days of organized inspection of cultural monuments in Paris with full explanations by an instructor for all points visited. Each student submits a term paper investigating one phase of his studies of particular interest to him. Graduate or undergraduate credit. Offered in summers of 1966 and 1969.

French 550 Independent Study in French 1-3 hrs.

Directed, individual study of a specific topic in a French literary or linguistic area. Departmental approval required for admission.

French 551 Advanced French Composition 3 hrs. Fall

Intensive practice with written French. Prerequisite: six hours of French, 316-317-556 or equivalent.
French 552  Advanced French Conversation  3 hrs.

Intensive practice with spoken French. Prerequisite: six hours of French 316-317-556 or equivalent.

French 556  French Conversation for Elementary Education Teachers  3 hrs.

Conversational practice with subject matter and vocabulary geared to the particular needs of students planning to teach French on the elementary school level. Open only to students in the elementary education curriculum. Prerequisite: French 316, 317, or equivalent.

French 560  Studies in French Literature  3 hrs. Fall, Winter

Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: six hours selected from French 322, 326, 327, 328, 329, 550. Representative topics which may be treated in this area include:

Medieval and Renaissance Literature—Outstanding works from the Chanson de Roland (in modern French) to the end of the sixteenth century.

Seventeenth Century Literature—Preclassic period: Reforms of Malherbe, préciosité, Descartes, beginnings of classical drama, and Corneille. Also, Classic period: significant works from the beginning of the reign of Louis XIV to his death.

Eighteenth Century Literature—Analysis of outstanding works of the period.

Twentieth Century Literature—General analysis of representative works from the beginning of the century to the end of the Second World War. Also, particular emphasis on contemporary drama and post-war literature.

Open to Graduates Only

French 600  French Classical Drama  3 hrs.

Drame classique. Seventeenth century French tragedy and the comedies of Molière.

French 601  Voltaire and Rousseau  2 hrs.

Voltaire et Rousseau. Influential ideas of the eighteenth century expressed in the writings of Voltaire and Rousseau.

French 602  Contemporary French Novel  3 hrs.

Roman contemporain. Representative novels of the twentieth century.

French 620  Seminar  2-4 hours Winter

Seminar. Topic to be selected from a French literary or linguistic area.
German

Open to Upperclassmen and Graduate Students

German 510 The Central European Area 2 hrs.

Investigates cultural aspects necessary for an understanding of Central Europe. Countries included are Germany, Austria, Switzerland, and Czechoslovakia. Historic, geographic, social and religious factors are treated. No foreign language prerequisite.

German 550 Independent Study in German 1-3 hrs.

Directed, individual study of a specific topic in a German literary or linguistic area. Departmental approval is required for admission.

German 552 Advanced German Composition and Conversation 4 hrs. Fall

Intensive practice with written and spoken German. Required for graduate students. Prerequisite: six hours of German 316-317-556 or equivalent.

German 556 German Conversation for Elementary Education Teachers 3 hrs.

Conversational practice with subject matter and vocabulary geared to the particular needs of a student planning to teach German on the elementary school level. Open only to students in the elementary education curriculum. Prerequisite: 3 hours of German 316-317 or equivalent.

German 559 History of the German Language 3 hrs. Winter

Survey of the development. Prerequisite: six hours of "500" level German or equivalent.

German 560 Studies in German Literature 3 hrs. Fall, Winter

Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: German 326 or 328 or equivalent. Representative topics which may be treated in this area include:

The Novelle—Survey of the development with representative selections.

Lyric Poetry—Survey of the development with significant selections.

Nineteenth Century Drama—Primarily Kleist, Grillparzer, Hebbel, and Hauptmann.

Twentieth Century Drama—Representative selections.

Open to Graduates Only

German 600 Goethe 3 hrs.

Das Werk Goethes. The literary and cultural contributions of Goethe, excluding Faust. Alternates with German 640.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Time</th>
<th>Terms</th>
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</thead>
<tbody>
<tr>
<td>German 601</td>
<td>Faust</td>
<td>3 hrs.</td>
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<td></td>
<td>Goethes Faust. Significant selections from parts I and II of the poem. Alternates with German 641.</td>
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<tr>
<td>German 640</td>
<td>Basic Middle High German</td>
<td>3 hrs.</td>
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<td></td>
<td>Einführung in die mittelhoehdeutsehe Sprache. Introduction to MHG language and literature.</td>
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<tr>
<td>German 641</td>
<td>Middle High German Literature</td>
<td>3 hrs.</td>
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<td></td>
<td>Die mittelhoehdeutsehe Dichtung. Literary selections. Prerequisite: German 640 or equivalent.</td>
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<tr>
<td>German 620</td>
<td>Seminar</td>
<td>2-4 hrs.</td>
<td>Fall, Winter</td>
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<td>Ausgewählte Gegenstände aus dem Gebiete der Germanistik. Topic to be selected from a German literary or linguistic area.</td>
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**Latin**

Open to Upperclassmen and Graduate Students and Others by Permission of the Instructor

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Time</th>
<th>Terms</th>
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<tbody>
<tr>
<td>Latin 550</td>
<td>Independent Study in Latin</td>
<td>1-3 hrs.</td>
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<td></td>
<td>Directed, individual study of a specific topic in a Latin literary or linguistic area. Departmental approval required for admission.</td>
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<tr>
<td>Latin 552</td>
<td>Latin Writing</td>
<td>3 hrs.</td>
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<td></td>
<td>Practice in the fundamentals of correct expression. Required for Latin majors. Prerequisite: Latin 326 or 327 or equivalent.</td>
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<tr>
<td>Latin 557</td>
<td>Teaching of Latin</td>
<td>3 hrs.</td>
<td>Fall</td>
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<tr>
<td></td>
<td>For prospective teachers of Latin in the elementary or secondary school. Principles, problems, and current practice.</td>
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<tr>
<td>Latin 560</td>
<td>Studies in Latin Literature</td>
<td>3 hrs.</td>
<td>Fall, Winter</td>
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<td></td>
<td>Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: Latin 326 or 327 or equivalent. Representative topics which may be treated in this area include:</td>
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<td></td>
<td>Satire—Rome as pictured in the Conversations of Horace and the invectives of Juvenal. Readings on the origins and development of satire as a genre.</td>
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<td>History—Reading and appraisal of Livy and of Tacitus as historians and literary artists.</td>
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<td></td>
<td>Bucolic Poetry—Readings from Vergil’s Eclogues and Georgics plus selections from later writers of bucolic poetry and discussion of its development as a literary form.</td>
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<td></td>
<td>Lyric and Elegiac—Broad readings in Roman poetry, centering around Catullus, Ovid, Martial and the other poets of love. Discussion of the origin and influence of elegy as a poetic form.</td>
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Medieval Latin—A study of the period 500-1500 A. D. when Classical Latin was blending into the new vernaculars to form eventual Romance Languages. Prose and poetic readings include a variety of themes reflecting the intellectual, cultural, and religious thinking of the times.

Latin 568 Mythology 3 hrs. Winter
Investigates the origins, elements, and interpretations of the principal myths and legends of Greece and Rome and their preservation not only in literature, but also in painting, music, and sculpture. No prerequisite.

Latin 575 Classical Drama in Translation 3 hrs. Fall
Readings and analysis of selected plays of Aeschylus, Sophocles, Euripides, and Aristophanes as dramas and as expressions of the Greek view of life. Some attention to Roman drama.

Russian
Open to Upperclassmen and Graduate Students

Russian 550 Independent Study in Russian 1-3 hrs.
Directed, individual study of a specific topic in a Russian literary or linguistic area. Departmental approval required for admission.

Russian 510 Russian Civilization 3 hrs.
Survey of the historical, cultural, and philosophical development of Russia from its origins to the present. Prerequisite: Russian 201 or equivalent.

Russian 556 Russian Conversation for Elementary Education Teachers 3 hrs.
Conversational practice with subject matter and vocabulary geared to the particular needs of students planning to teach Russian on the elementary school level. Open only to students in the elementary education curriculum. Prerequisite: Russian 201 or equivalent.

Russian 560 Studies in Russian Literature 3 hrs.
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: six hours of 300-level Russian or equivalent. Representative topics which may be treated in this area include:

- Poetry—Selections from classic masterpieces and contemporary poetry.
- Eighteenth Century Literature—Survey of the classical and pre-romantic periods.
- Nineteenth Century Literature—Representative selections from the period.
Twentieth Century Literature—Primarily Gorky, Blok, Mayakovsky, Leonov, and Sholokhov.

Spanish

Open to Upperclassmen and Graduate Students

Spanish 550 Independent Study in Spanish 1-3 hrs.
Directed, individual study of a specific topic in a Spanish literary or linguistic area. Departmental approval required for admission.

Spanish 556 Spanish Conversation for Elementary Education Teachers 3 hrs.
Conversational practice with subject matter and vocabulary geared to the particular needs of students planning to teach Spanish on the elementary school level. Open only to students in the elementary education curriculum. Prerequisite: Spanish 316 or equivalent.

Spanish 560 Studies in Spanish Literatures 3 hrs. Fall, Winter
Topic varies according to genre, author, or period and will be announced. Each of these courses carries separate credit, although all are listed under 560. Thus, a student may take any or all of the offerings at various times. Prerequisite: Spanish 328 or 329 or equivalent. Representative topics which may be treated in this area include:

- Cervantes—Don Quixote and other works of Cervantes together with his life and thought.
- Seventeenth Century Theater—Main works of Lope de Vega through Calderon de la Barca.
- Nineteenth Century Novel—Development of the regional novel from Fernán Caballero through Blasco Ibáñez.
- Generation of '98—Thought and works of typical representatives as Unamuno, Ortega y Gasset, and Azorín.
- Contemporary Theater—Evolution and analysis of the characteristics.
- Spanish-American Short Story—Significant short stories along with the cultural and social background.
- Contemporary Spanish-American Novel—The twentieth century novel along with the cultural and social background.

Open to Graduates Only

Spanish 600 Golden Age Prose 3 hrs.
Study and comparison of the major prose types of the period with special attention to the picaresque novel.

Spanish 602 Contemporary Spanish Novel 3 hrs.
Study of forms and trends.
Spanish 603  Spanish-American Modernism  3 hrs.
    Study of the rise and development of major works of the period.
Spanish 606  Medieval Spanish Literature  3 hrs.
    Linguistic and literary analysis from the time of the Cid to the
    fifteenth century.
Spanish 608  Nineteenth and Twentieth Century Spanish Poetry  3 hrs.
    Study of trends from Romanticism to present times and analysis of
    works of the major poets.
Spanish 620  Seminar  2-4 hrs.
    Topic to be selected from a Hispanic literary or linguistic area.

MATHEMATICS

Powell, Head; Professors Beeler, Hannon, McCully and Seber; As-
    sociate Professors Alavi, Leja and Meagher; Assistant Professors
    Chartrand, Hsieh, Petro, Schriener, Turner and Vollmer.

Open to Graduates and Upperclassmen

500  Differential Equations  3 hrs. Winter
    This course is a continuation of linear ordinary differential equa-
    tions studied in Math 223 or 306. Topics included: simultaneous
    linear equations, equations with variable coefficients, series solutions
    leading to Bessel, Legendre and other functions, partial differential
    equations, method of separation of variables in Laplace's and related
    equations. Prerequisite: Math 223 or 306 (Math 380 recommended).

506  Programming for Computers  3 hrs. Fall, Winter
    Designed to give preparation in the organization and general use
    of high speed computing machines used in scientific and engineering
    computations. The language of the Computer, Symbolic Programming
    System, and Fortran II will be used to prepare programs. Problems such
    as exponential, multiplication of matrices, inverse of a matrix, solution
    of polynomials, numerical integration, and solution of a differential
    equation will be prepared to be run on the Computer. Prerequisite:
    Math 223 or equivalent.

507  Numerical Analysis  3 hrs. Winter
    Numerical methods involving polynomial evaluation, Legendre poly-
    nomials, Chebyshev polynomials, differences, integration, solution of differ-
    ential equations and linear programming. Prerequisite: Math 223 or
    306 and Math 506.

508  Automatic Programming Systems  3 hrs. Fall
    A thorough study of the internal organization of the Fortran Com-
    piler. Each student will be required to construct a compiler. Prerequisite:
    Math 506.
530 Vectors and Matrices 3 hrs. Fall
Properties of n-dimensional vector spaces, linear transformations, and matrix algebra are studied. Prerequisite: Math 330.

540 Introduction to Higher Geometries 3 hrs. Winter
Topics will be selected from: projective geometry, affine geometry, non-euclidian geometry and elementary topology. Mappings of a geometric nature and their properties will be considered in the development of each topic. Prerequisite: Math 380.

550 Teaching of Secondary Mathematics 3 hrs. Fall, Winter
In this course consideration is given to curriculum problems and trends in secondary school mathematics and to specific problems of teaching mathematics effectively to secondary school students. Prerequisite: Math 380.

552 Teaching of Elementary Mathematics 2 hrs. Fall, Winter
In this course consideration is given to curriculum problems and trends in elementary school mathematics and to specific problems of teaching mathematics effectively to elementary school children. Prerequisite: Math 150 or equivalent.

560 Mathematical Statistics 3 hrs. Fall
Probability spaces, mathematical expectation, moment generating functions, some special distributions of the discrete and continuous type, sampling theory, independence, statistical inference, transformations of variables. Prerequisite: Math 380 or equivalent.

561 Mathematical Statistics 3 hrs. Winter
A continuation of Math 560. Point estimation, maximum likelihood estimates, sufficiency and stochastic independence, limiting distributions, some distribution free problems, statistical hypotheses, quadratic forms and some multivariate distributions. Prerequisite: Math 560.

570 Advanced Calculus 3 hrs. Fall, Winter
This course along with Math 571 constitutes a further study of calculus beyond that covered in Math 122, 123, 222, and 223. The two semester sequence will include an abstract treatment of vector spaces and linear transformations. The gradient, curl, divergence and exterior derivative will be obtained from a single basic derivative. The various multiple integral theorems will appear as special cases of a general Stoke's formula concerning the integration of exterior forms. Prerequisite: Math 380 (530 recommended).

571 Advanced Calculus 3 hrs. Winter
(See description of Math 570). Prerequisite: Math 570.

580 Number Theory 3 hrs. Fall
Diophantine equations, congruences, quadratic residues, and properties of number theoretic functions. Prerequisite: Math 380 or equivalent.
Independent Study in Mathematics 1-3 hrs. Fall, Winter

Advanced students with good scholastic records may elect to pursue independently the study of some topic having special interest for them. Topics are chosen and arrangements are made to suit the needs of each particular student. Prerequisite: Approval of head of department.

Open to Graduates Only

Fourier Series and Boundary Value Problems 3 hrs. Fall

Topics covered include Fourier Series and Fourier Integrals and a further study of boundary value problems and special functions beyond those covered in Math 500. Prerequisite: Math 500; 570 or equivalent.

Operational Mathematics 3 hrs. Winter

Topics covered include the study of the theory and application of Laplace Transform and other linear integral transformations. Prerequisite: Math 500; 676 or equivalent.

Abstract Algebra I 3 hrs. Fall

Algebraic system studied include groups and sub-groups, rings and ideals, and fields. Quotient structures and ring extensions are discussed in detail. Prerequisite: Math 530.

Abstract Algebra II 3 hrs. Winter

A continuation of 630. Topics will be selected from: modules, linear transformations, Galois Theory, Gaussian domains, Noetherian rings, and structure of rings. Prerequisite: Math 630.

Point Set Topology 3 hrs. Winter

Elementary properties of topological spaces, metric spaces, compact spaces, and continuous functions. Prerequisite: Math 570.

Real Analysis I 3 hrs. Fall

Basic topological and metric properties of the real line, real-valued functions, convergence, continuity and bounded variation. Prerequisite: Math 570.

Real Analysis II 3 hrs. Winter


Complex Analysis 3 hrs. Fall

Cauchy Theory, series expansion, types of singularities, analytic continuation, and theory of residues. Prerequisite: Math 570.

Seminar in Applied Mathematics 1-3 hrs.

Seminar in Topology

Seminar in Algebra

Seminar in Geometry

Seminar in Probability and Statistics
697 Seminar in Analysis

The prerequisite for any seminar will be the approval of the Instructor in charge.

The following courses are primarily for teachers and in general will not apply towards the M.A. in Mathematics.

610 Concepts of Mathematics 4 hrs.

This course will include the following topics: sets, relations, functions, equivalence and order relations, axiomatics, groups, rings, fields, logical structure of elementary algebra, integers, rational and real numbers, inequalities, mathematical induction. Prerequisite: Consent of Department Head.

612 Probability and Statistics 4 hrs.

This course will include the following topics: probability models, sampling, conditional probability, random variables, binomial distribution, normal distribution, estimation, tests of significance. Prerequisite: Consent of Department Head.

613 Elementary Theory of Numbers 4 hrs.

This course will include the following topics: division algorithm, primes, fundamental theorem of arithmetic, congruences, diophantine equations, historical background. Prerequisite: Consent of Department Head.

614 Mathematical Logic 4 hrs.

This course will include the following topics: sentential connectives, theory of influence, symbolizing language, quantifiers, formal and informal proofs. Prerequisite: Consent of Department Head.

615 Intermediate Analysis 4 hrs.

This course will include the following topics: limits, continuity, differentiation, integration, applications. It will stress concepts rather than techniques. Prerequisite: Consent of Department Head.

617 Foundations of Geometry 4 hrs.

The first part of the course will be a survey of analytic geometry in space using vector methods. The second part will be an axiomatic development of projective geometry and analytic projective geometry in n-dimensions. Prerequisite: Consent of Department Head.

619 Numerical Methods 4 hrs.

This course will include the following topics: automatic programming, systems for digital computers, matrices, inequalities, areas, other selections from numerical analysis. The participants will actually use the IBM 1620. Prerequisite: Consent of Department Head.

650 Mathematics for Elementary School Teachers 2 hrs. Winter

Emphasizes the concepts and foundations of the mathematics commonly taught in the elementary school, and of associated problems of
learning and teaching. Each student will be expected to study and report on some special problem or aspect of the teaching of arithmetic.

652 Mathematics for Junior High School Teachers 2 hrs. Fall

This course is designed to acquaint the student with modern trends in Junior High School Mathematics. Several current programs will be studied to determine what topical content should be included and the treatment to be given to this content in a modern mathematical program for Junior High School Students.

654 Curriculum Studies in Algebra and Geometry 4 hrs. Winter

Current recommendations, materials, and methods related to teaching mathematics in secondary schools are used as the basis for reports and projects to be prepared and given by the students. Prerequisite: Consent of Department Head.

MUSIC

Carter, Head; Professors E. Adams, Matthews, Meretta and Stulberg; Associate Professor E. Beloof, Faustman; Assistant Professors Fink, Hardie, Heiles, Osborne, Ryan, Work.

Open to Graduates and Upperclassmen

530 Advanced Choral Conducting 1 hr.

Supervised experience in conducting vocal groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: Choral Conducting.

531 Advanced Instrumental Conducting 1 hr.

Supervised experience in conducting instrumental groups. The student may be called upon to prepare an ensemble for public performance. Prerequisite: Instrumental Conducting.

510 Elementary School Music 2 hrs.

Emphasizes the place of music in the curriculum and the use of music in the day to day activities of the classroom. The fundamental musical skills are developed in order to assist the teacher to achieve these objectives.

541 Music Supervision and Consultation 2 hrs.

A study of the structuring and implementation of a music education program in the schools, in terms of three organizational relationships: the music administrator or supervisor, the scheduled music teacher, and the unscheduled music consultant. Relation of music specialist to classroom teacher.

544 Analysis and Evaluation of Music Education Materials 2 hrs.

A study of the theoretical bases for, and practice in analyzing and evaluating music for use in music education programs.
Modal and harmonic counterpoint as exemplified by the composers of the fifteenth, sixteenth, seventeenth, and early eighteenth centuries. Modern counterpoint. Practical application through the writing of strict counterpoint in the five species, double counterpoint, obligators, descants, canons and fugues. Prerequisite: 260 and 261.

A continuation of 560.

Original work in composition dealing with the larger forms in both the vocal and instrumental fields. Prerequisite: Composition.

A continuation of 562.

A survey of the musical forms, large and small, used from the Baroque period to the present day. Analysis of both structure and texture of representative works of the various periods and styles.

A study of the characteristics of the various instruments, application in arranging for various instrumental combinations including accompaniments for solos, vocal and instrumental. Covers arranging for both band and orchestra. Prerequisite: 260 and 261.

A continuation of 567.

A survey of the choral and instrumental music of the Baroque masters such as J. S. Bach and G. F. Handel. Special attention to the cantatas, oratorios, motets, passions, and masses.

Examination of the chief works of the period by composers such as Stamitz, Mozart, and Haydn, with intensive study into the symphony and its derivation commencing with the Mannheim School; also chamber music, concertos, operas and sacred music.

Music of the important composers of the period such as Beethoven, Brahms, and Wagner, along with historical, cultural and political backgrounds of the works. Special attention to growth of Nationalism in the music of various countries.

The problems involved in producing a musical show in public schools such as selection of the production, casting, lighting, scenery construction, publicity, makeup, etc., will be studied in the process of developing a public performance by the class.
Open to Graduates Only

640  Band Techniques and Organization  2 hrs.


641  Choral Techniques and Organization  2 hrs.

The study of choral activities in relation to organization, repertoire, style, diction, singing technique, balance, blend, tone quality, phrasing, rehearsal technique and conducting.

642  Philosophy and History of Music Education  2 hrs.  Winter

Designed to acquaint the student with the development of music education in the United States and how this development is the reflection of a growing philosophy of music education.

643  Psychology of Music Education  2 hrs.  Fall

Personal and social needs, motives and goals in relation to music in education. The function of musical achievement and aptitude tests in music education. Psychological aspects of behavior pattern in musical organizations. Physical, social and psychological factors involved in a developmental music program.

650  Seminar in Music Education  2 hrs.

Each participant will be expected to develop a project which is of interest to him, but each project will be subject to group discussion, review and analysis. The lectures and reading will deal with the whole field of Music Education.

658  Techniques of Research in Music Education  2 hrs.

Available research in music education will be analyzed as to method and technique. Outlines will be submitted for proposed studies involving the techniques thus discovered, and one will be developed.

659  The Teaching of Applied Music (on demand)  2 hrs.

Survey of teaching problems involved in music of various periods and styles. Critical analysis of performances in student's major performance medium, as well as other media will be required. Pedagogical problems of teaching both secondary and university age level students will be considered.

660  The Teaching of Theory (on demand)  2 hrs.

Analysis of various techniques, philosophies, and materials used in teaching theory. Analysis of relative strengths and weaknesses. Application of what we know about the learning processes to theory and the practical application of theory to all musical study.
665 Band Arranging 2 hrs.
Instruction in scoring for small wind instrument ensembles, and
the band. Opportunity will be provided to hear the results of each
student's work. Offered even-numbered summers.

672 Medieval and Renaissance Music 2 hrs.
Polyphonic music of the fifteenth century. Dunstable, Dufay,
Ackeghem, Obrecht, Josquim and contemporaries. Polyphonic music of
the sixteenth century. Italian, French, Spanish, English and German
schools of secular and sacred vocal music. Palestrina and the later de-
velopment of the Palestrina style.

673 Contemporary Music 2 hrs.
A survey of trends in European music and music of the Americas
from about 1910 to the present day. Particular attention and emphasis
placed on the music since 1920. Works by Stravinsky, Bartok, Hindemith,
Copland, Villa-Lobos and others will be studied.

690 Graduate Recital 2 hrs. Fall, Winter
Presentation of a full-length recital in the student's area of con-
centration (applied music or composition). This course will also require
an appropriate document relative to the repertoire performed. The
course will be evaluated by the faculty teaching in that area. By consent
of instructor.

Applied Music 1-4 hrs. Fall, Winter, Spring, Summer
Qualified students may take graduate study in Applied Music for
a total of four semester hours per semester in the major performance
area and for a total of two semester hours in a minor performance area
(one semester hour per semester). Requires sixty or 120 minutes per
week of instruction and the necessary practice.

H36-H39 Harp
H56-H59 Piano
H76-H79 Organ
H96-H99 Voice
Z36-Z39 Stringed Instruments
Z56-Z59 Brass Instruments
Z76-Z79 Woodwind Instruments
Z96-Z97 Percussion Instruments

PHILOSOPHY AND RELIGION

Loew, Head; Assistant Professors Emblom, Ellin and Grundler.

501 Hinduism and Buddhism 3 hrs. Fall
A study of Hinduism and Buddhism in terms of their historical devel-
opment, systems of thought, and contemporary revival. Special emphasis
on reading and analysis of original sources available in English trans-
lation.
Representative Western Philosophers 3 hrs.

Concentrated study of not more than three philosophers. The topic is selected by the instructor and varies from semester to semester. The philosophers may constitute a group, such as the continental rationalists or the British empiricists, or they may be great individual thinkers from several periods of western philosophy. Prerequisite: Phil. 360-1-2-3, or consent of the instructor.

Epistemology 3 hrs. Fall

Reading and discussion of works which present theories of consciousness, knowledge, and truth. Prerequisite: Philosophy 251 or any 300-level course in philosophy. Not offered 1964-65.

Metaphysics 3 hrs. Winter

An examination of theories of reality, existence, being, substance, and causality.

Studies in Reformation and Post-Reformation Theology 3 hrs. Winter

A study of Reformation and post-Reformation theology with major emphasis on those elements most important to an understanding of Protestant-Catholic differences.

Philosophy of History 3 hrs. Fall

An inquiry into the conscious and unconscious attitudes toward history which, when systematized, are philosophies of history. Consideration is given to their effect on the writing and interpretation of history. The range of thought includes the positions of such men as St. Augustine, Ibn Khalidun, Marx, Dilthey, Spengler, Bulmann, Toynbee, and Jaspers.

PHYSICS

Bradley, Head; Professors Derby, Kruglak, and Nichols; Associate Professor Miller; Assistant Professors Carley, Dotson, Hoyar, Oppliger, and Stark.

Open to Graduates and Upperclassmen

Analytical Mechanics 3 hrs. Fall

The topics include statics, dynamics of a particle and of a rigid body, Lagrange's and Hamilton's equations are introduced. Vector methods are used frequently. Prerequisite: Physics 212, Math IV.

Fundamentals of Electricity and Magnetism 3 hrs. Winter

This is a theoretical course providing a thorough investigation of electric and magnetic fields. The applications of the theorems of Stokes and Gauss are emphasized, and Maxwell's equations are developed. Prerequisite: Physics 212, Math IV.
552 Applied Spectroscopy 3 hrs. Winter

This is a combined class and laboratory course on methods of spectrographic analysis. The topics studied include the history of spectroscopy, the origin of line spectra, spectrographic instruments, and modern techniques of qualitative and quantitative analysis. Prerequisite: Physics 212, Physics 352, or consent of instructor.

560 Modern Physics I 4 hrs. Fall

This course includes an introduction to quantum mechanics with selected applications, the one-electron atom, radiative transitions, atomic shell structure, and atomic and molecular spectroscopy. A knowledge of differential equations is assumed. It is recommended for seniors. Prerequisite: Physics 212, Math IV.

561 Modern Physics II 4 hrs. Winter

The first part of this course covers quantum statistics and an introduction to solid state physics. The latter part is a study of nuclear physics including properties of nuclei, nuclear reactions and models, and the particles of physics. Prerequisite: Physics 560.

598 Selected Topics 1-4 hrs. Fall, Winter

The following courses are for graduate students only and may be selected only after consultation with the physics graduate adviser:

Open to Graduates Only

612 Current Developments in Physics 2 hrs.

This course consists of demonstration-lectures and discussions of some of the outstanding developments in physics in recent years, such as nuclear energy and its applications, artificial radioactivity, elementary particles, high energy accelerators, semi-conductors and transistors and ultrasonics. Special attention will be given to make the course of practical value to high school teachers of science. Prerequisite: one year of General College Physics.

622 Quantum Mechanics 3 hrs. Winter

This course is designed to provide a foundation of fundamental techniques of calculation for more advanced work in physics and chemistry of atoms, molecules, nuclei and solids. An attempt will be made to provide an understanding of the principles of the subject through the Schroedinger-Heisenberg Equations as well as through the formal operator theory of Dirac. Discussing the simple and representative systems of the simple harmonic oscillator and the one electron atom, the course will confine itself almost solely to the non-relativistic approximation.

624 Statistical Mechanics 3 hrs. Fall

This course deals with concepts of probability and statistics as applied to physics with particular emphasis on the kinetic theory of gases. Topies covered will include Laplace's formula, Stirling's formula, normal Distribution Law, Maxwell distribution of velocities, canonical ensemble, and Gibbsian ensemble.
630 Classical Mechanics 3 hrs. Fall

This course deals with the Hamiltonian method of mechanics and develops the variational principles and the equations of Lagrange. Examples of point mass and rigid body problems are examined by these methods. The principles of relativity are introduced by establishing the Lorentz invariance requirement for the Hamiltonian. Canonical transformations, angle and action variables; theory of small vibrations, are introduced in a way that makes the historical bridge between classical and quantum mechanics.

662 Electricity and Magnetism 3 hrs. Winter

This course deals with the Hamiltonian method of mechanics and dependent electromagnetic fields and their interaction with matter. Radiation, wave motion, scattering, and relativity, are several of the topics in the latter part of the course. Vector analytical notation is used exclusively.

POLITICAL SCIENCE

Weber, Head; Professors Clark, Greenberg, Plano and Stine; Associate Professors Batson, Ebel, Kaufman, Olton and Phillips; Assistant Professors Kim, Klein, McAnaw and Ritchie.

Seminar topics will vary from year to year: Enrollment in successive years permitted. Schedule of classes will indicate credit to be given for courses designated as variable credit.

600 courses are open to graduates only

MAJOR AREAS

American Government

500 Municipal & Urban Government 4 hrs. Fall, Winter

An intensive analysis, with library and field research exercises, of the ecology, legal powers and limitations, administrative structure, decision-makers, and process of government in urban America. Alternative arrangements for governing metropolitan areas will be examined and compared. Prerequisite: 302 suggested.

502 Problems of American Government 3 or 4 hrs. Winter

A critical examination of major problems facing national, state, or local government with emphasis upon contemporary efforts to reach solutions to such problems. Significant issues such as agriculture, education, taxation, welfare, labor and business will be considered. The subject matter will vary from semester to semester and students may repeat the course. Prerequisite: Junior standing.

600 Seminar: State or Local Government 3 or 4 hrs. Fall

Supervised study-research on questions of significance in (local) (state) government. Problems considered will vary from semester to semester. Students may repeat the course.
Politics

510 The Political Process of Government 5 hrs.

An analysis of political behavior in the United States with particular reference to the growth and internal dynamics of interest groups; the characteristics of the party system; the role of both groups and party in relation to public opinion and to the operation of the legislative, executive, and judiciary. Not open to students who have taken Political Science 310. Not to be offered 1965-66 school year.

610 Seminar: U. S. Politics 3 or 4 hrs.

Analysis of political instruments, leadership, and techniques as exemplified in the United States political system. Students will pursue research projects. The course will give emphasis to either public policy formation, political parties, political behavior, or pressure groups and propaganda. The course may be repeated. Not to be offered 1965-66 school year.

Public Law

524 Constitutional Law and Civil Liberties 4 hrs. Fall, Winter

A study of the interpretation of the United States Constitution as embodied in the opinions of the United States Supreme Court. The political and social situation giving rise to great constitutional controversies are studied in the context of the role of law and judges. Subject areas covered include national-state relations, judicial, legislative and executive power, with special attention to contemporary developments in civil liberties and civil rights. Prerequisite: 324 suggested.

526 Administrative Law and Public Regulation 4 hrs. Fall

A study of the requirements for, and the limits on, the exercise of administrative powers by public officials charged with regulating significant aspects of the social and economic life of the nation. Special attention is paid to the extent of government regulation and the means of safeguarding individual rights through fair administrative procedures and judicial control over administrative determinations. Prerequisite: 200 or a course in Economics.

620 Seminar: Public Law 3 or 4 hrs. Winter

Study and research on major topics of interest in the judicial process, administrative law, constitutional law, and civil liberties. Individual papers and reports will be presented. Topics considered will vary from semester to semester and students may repeat the course.

Public Administration

530 Problems of Public Administration 3 or 4 hrs. Winter

Consideration of issues and problems of current interest in the field of public administration. This course is intended to provide advanced work for undergraduates and also to serve as an introduction to the field
for graduate students without previous training in public administration. Prerequisite: for undergraduates, 330.

630 Seminar: Public Administration 3 or 4 hrs.

Study and research on selected major topics in public administration. Independent reports will be made. Subject matter will vary and the course may be repeated. Prerequisite: 330, 530 or consent of instructor. Not to be offered 1965-66 school year.

Comparative Government

540 Problems of Foreign Political Systems 3 or 4 hrs.

Course will consider selected problems of the governments and political systems of Western and Eastern Europe, Asia, Africa, and Latin America. The specific problems, topics, and countries to be studied will be announced each semester. May be repeated. Not to be offered 1965-66 school year.

640 Seminar: Comparative Government 3 or 4 hrs. Fall

Independent research and seminar presentation for each student are stressed. The topic and area of concentration may include Europe, Asia, Africa or Latin America and will vary from semester to semester. May be repeated.

International Relations

550 Problems of International Relations 3 or 4 hrs.

An intensive introduction for seniors and graduate students who have had no previous work in the international field. The course surveys the subfields of international politics, law, organization, and foreign policy. Constitutes a prerequisite to any other 500 or 600 level international courses for such students. May not be taken by students who have had Political Science 250. Not to be offered 1965-66 school year.

554 International Law and Organization 4 hrs. Winter

Explores systems, methods, and agencies developed by states for meeting their common problems. Examines also the legal relations of nations in war and peace, international legal theory and institutions. Emphasis is placed on the United Nations and regional political, military, and economic agencies. Prerequisite: political science 250 or 550.

650 Seminar International Relations or Foreign Policy 3 or 4 hrs. Winter

Study and research on major topics of current international political, organizational, legal, or foreign policy significance. Individual papers and reports will be presented. The content of the course will vary from semester to semester and the subject to be studied will be indicated in advance. May be repeated.
Political Theory

560 Comparative Political Idealogies 4 hrs. Fall
A consideration of the functions of ideology in various political systems. Communism, Fascism, and Democracy are directly considered.

660 Seminar: Political Thought 3 or 4 hrs. Winter
An analysis of problems and subject matter considered by political philosophers and significant to the social sciences. Various issues arising in political thought, certain periods in history, or regions of the world may be considered. Subject considered will vary and the course may be repeated.

Reading and Special Studies

598 Studies in Political Science 1-4 hrs. Fall, Winter, Spring, Summer
An opportunity for advanced students with good scholastic records to pursue independently the study of some subject of interest to them. Subjects are chosen and arrangements made to suit the needs of individual students. Prerequisite: Approval of Head of Department and instructor.

690 Scope and Method in Political Science 3 hrs. Fall
A deliniation of scope and substance of political science and its relationship to other social sciences. Major conceptions of methodology as embodied in current leading studies in the discipline; the present state of systematic theory in political science; and the role of value theory in political research.

PSYCHOLOGY

Kuffel, Head; Professors Asher, Fatzinger and Schmidt; Associate Professors McGinnis, Mountjoy, Robertson and VonHolt; Assistant Professors Jochem, Koronakos, Lyon, Nangle and Thor.

Open to Graduates and Upperclassmen

510 Advanced General Psychology 4 hrs. Fall, Winter
Lecture and discussion of general topics in the behavioral sciences. Primarily for the advanced undergraduate major or beginning graduate student.

512 Physiological Psychology 3 hrs. Fall, Winter, Summer
A survey of the interrelationships of neurological, physiological, and behavioral processes.

516 Psychology of Learning 3 hrs. Fall, Winter, Summer
An introduction to some of the basic principles of learning.
530 Statistics 3 hrs. Fall, Winter, Summer
An introduction to basic statistical procedures and concepts. Primarily for education majors.

541 Psychology of Economic Behavior 3 hrs. Fall, Winter
An analysis of psychological theory and practice applied to the study of behavior in purchasing, consumption, selling, marketing, and effects of economic incentives. Stress will be placed on experimental findings and techniques of survey research.

542 Human Factors in Engineering 3 hrs. Fall, Winter
A survey of research on the adaptation of equipment, products and environment to man’s use.

550 Criminal Psychology 3 hrs. Fall
An examination of modern psychological principles involved in law making, law enforcement, adult and juvenile criminal personalities, correction and treatment methods, predictive measurements and special problems.

560 Introduction to Clinical Psychology 3 hrs. Fall, Winter, Summer
A study of the role of the clinical psychologist. An examination of the current techniques of behavior assessment and behavior modification.

574 Experimental Social Psychology 3 hrs. Winter
Methodology of small group research with emphasis upon design and application.

595 History of Psychology 3 hrs. Fall
The historical and philosophical foundations of contemporary American psychology.

598 Special Projects in Psychology 2-4 hrs. Fall, Winter, Summer
This will be a readings course for the purpose of enabling graduate students to develop a background, knowledge and competency in specific areas.

Open to Graduates Only

613 Comparative and Physiological Psychology Lab 3 hrs. Winter
Phylogenetic and ontogenetic comparisons of behavior with relation to structure and function. Lecture and laboratory.

614 Motivation and Emotion 3 hrs. Winter
An introduction to the experimental analysis of psychological and physiological aspects of motives, incentives, and emotions.

617 Experimental Psychology of Learning 3 hrs. Fall, Winter
An intensive study of selected topics with special emphasis upon the techniques employed in the experimental analysis of behavior in the human and infra-human organisms. Lecture and laboratory.
618 Experimental Psychology of Perception 3 hrs. Fall  
An examination of the current facts and theories of sensation and perception. Lecture and laboratory.

623 Advanced Abnormal Psychology 3 hrs. Fall, Winter, Summer  
Comprehensive study of pathological behavior patterns with consideration of experimental studies and theoretical approaches to causes and treatment.

624 Personality Theory 3 hrs. Fall, Winter, Summer  
Consideration and evaluation of the major theories of personality with emphasis on those theories having implications for counseling and therapy. An examination of experimental evidence and illustrative case studies.

634 Advanced Statistics 3 hrs. Fall, Winter  
Small sample theory and analysis of variance as applied to principles of experimental design.

635 Correlation Methods 3 hrs. Winter, Summer  
A study of simple, partial and multiple correlation techniques. An examination of non-parametrics will also be made.

644 Personnel Selection and Training 3 hrs. Fall  
Emphasis on the psychological principles and methodologies used in the selection, classification, and training of employees.

645 Psychology of Work 3 hrs. Winter  
Emphasis is placed upon an investigation of worker attitudes, morale, motivation, supervisory styles, and social interaction as determiners of employees productivity and job satisfaction.

661 Psychological Counseling 3 hrs. Fall, Winter, Summer  
A consideration of some theories of psychological counseling and their relationships to evaluation, program planning, and technique. Individual and group counseling, and methods appropriate for different developmental levels, and kinds and degrees of psychopathological severity will be discussed.

662 Counseling Practicum 2 hrs. Fall, Winter, Summer  
Closely supervised practice in clinical counseling. Emphasis is placed on diagnostic evaluation, planning, technique, interpersonal factors.

663 Seminar in Clinical Assessment 2 hrs. Winter, Summer  

680 Advanced Tests and Measures 2 hrs. Fall, Summer  
Studies of principles of psychological test construction with particular emphasis on maximum performance tests.
681 Personality Measures (Non-projective) 2 hrs. Winter, Summer

Studies of the principles of objective personality measurement, the findings of studies using these tests and their applications.

682 Individual Testing 2 hrs. Fall, Winter, Summer

Theory and basic concepts underlying the use of individual tests of intelligence. Experience under supervision in administration, scoring and interpretation of the Wechsler Adult Intelligence Scale (WAIS) and the Wechsler Intelligence Scale for Children (WISC).

683 Individual Testing 2 hrs. Fall, Winter, Summer

Theory and basic concepts underlying the use of individual tests of intelligence. Experience under supervision in administration, scoring and interpretation of the Stanford-Binet Intelligence Scale, Form L-M.

684 Projective Techniques 3 hrs. Fall

Survey of the theory of projective psychology and the basic concepts of projective measurement. Emphasis is placed on the administration, scoring, and interpretation of the Rorschach. The Revised Bender-Gestalt, Porteus Maze, TAT, and figure drawing tests are also considered. Supervised practice. Clinical and School Psychological Examiner only.

685 Advanced Projectives 3 hrs. Winter

An intensified study of and supervised practice in Rorschach, Revised Bender-Gestalt, Porteus Maze, figure drawing, and other projective tests. Emphasis on selection and interpretation of projective test battery. Psychology 684 or permission of instructor. Clinical and School Psychological Examiner only.

696 Systematic Psychology 3 hrs. Fall

An intensive study of current theories in psychology with emphasis on the philosophy of science and the logic of system building.

SCIENCE DIVISION

Professors G. Mallinson, J. Mallinson.

Open to Graduates Only

610 Science for Elementary Teachers 2 hrs. Summer, Fall

Indicates the part played by science experiences in the development of children, acquaints teachers with types of science content and teaching procedures suitable in elementary education.

620 The Teaching of Science 2 hrs. Fall

Analyzes and evaluates the objectives of science as a high-school subject and considers modern practices with respect to such topics as classroom method, motivation, laboratory work, directed study and like problems.
SOCIAL SCIENCE DIVISION

Professors Kercher, Seibert and Stine; Assistant Professors Dykstra, Johnson and Fox.

Open to Graduates and Upperclassmen

504 Social Studies Seminar: England  6 hrs.

A foreign study seminar especially designed for teachers and advanced college students in the social studies. It consists of regularly scheduled lectures and discussions on British life, institutions, social problems and international relations. Following twelve days of travel in the British Isles, the seminar will be in formal session at Oxford University, England, for a period of about four weeks. After Oxford, the party will spend approximately a month touring several countries on the Continent. Graduate or undergraduate credit, up to a maximum of three semester hours in any one department may be distributed among economics, history, political science and sociology. Offered next summer 1966.

506 Studies in the Non-Western World  2 hrs.

Gives teachers an awareness of social forces operating outside of Western Civilization. The workshop approach will be used to introduce students to such problems in Asia and Africa as industrialism, nationalism, self-government, social integration, population explosion, and the Western impact. The answers which two-thirds of the world are now giving to these problems cannot help but affect Western society. The ultimate objective is to provide teachers with selected resource materials and initial awareness of dynamic forces shaping over half the world. Not offered 1965-66.

Open to Graduates Only

600 Seminar in the Teaching of Social Studies  2 or 3 hrs.

Assists teachers of social studies to evaluate their philosophy and teaching methods in the light of accepted principles and current practices in social studies instruction. Students will be encouraged to do individual studies which will enable them to remedy their own weaknesses. Prerequisite: Open only to graduate students who are teaching or have taught social studies in the public schools. Not offered 1965-66.
SOCIIOLOGY AND ANTHROPOLOGY

Kercher, Head; Professors Bouma, Horton, Hunt, Manis; Associate Professors Maher, Reid, Schellenberg; Assistant Professors Eshleman, Garland, D. Louis, H. Lewis, R. J. Smith, and Walker.

Open to Graduates and Upperclassmen

500 History of Social Thought 3 hrs.
A critical survey of the social thinking of outstanding students of society from Plato to those of modern social science. Prerequisite: Sociology 200 or 600, or equivalent.

504 Sociological Theory 3 hrs. Fall
A study of the major theoretical approaches in contemporary sociology. Prerequisite: 9 hours of sociology.

514 Juvenile Delinquency and the Community 3 hrs. Fall, Winter
A study of juvenile delinquency as a social problem. Extent, causative factors, methods of treatment and programs of prevention and control are covered. When possible, extensive use of community resource people is made. Prerequisite: Sociology 200 or 600, or equivalent.

515 Social Conflict 3 hrs. Fall
An examination of causes of social conflict, strategies in pursuing conflict, and forms of conflict resolution in conflicts between individuals, between groups, and between nations. Prerequisite: 15 hours of Sociology, political science and economics.

523 Contemporary Social Movements 3 hrs. Fall
A study of the growth and place in contemporary society of selected social movements, including communism, fascism, Ku Klux Klan, the Townsend movement and the like. Prerequisite: Sociology 200 or 600, or equivalent.

524 Advanced Social Psychology 3 hrs. Winter
A study of selected theoretical, methodological and substantive problems in Social Psychology. Prerequisite: Sociology 220 or equivalent.

532 Culture and Personality 3 hrs. Winter
An investigation of the interaction of culture and personality with particular attention to the role of culture as a force in the development of the individual. Prerequisite: Sociology 200, or 230 or 600, or the equivalent.

533 Changing Social Systems—Sub-Saharan Africa 2 hrs. Winter
A study of the erosion of traditional tribal systems and the rise of secondary associations and social systems in sub-Saharan Africa resulting from the impact of European Culture and other contemporary world influences. Prerequisite: 200 or 230 or consent of instructor.
534 Peasant Societies in Cross-Cultural Perspective

A cross-cultural study of the development of peasant groups as a cultural type. Theoretical and substantive emphasis is on the cultural antecedents of peasant societies, the conditions promoting change from folk to peasant status, and the relationships between peasant groups and urban, national societies. Prerequisite: 330 and one of 334, 335, 336, 337 or consent of instructor.

536 The Dynamics of Culture Change

An inquiry into the dynamics of culture through a study of the principal theories of cultural change and their application to concrete situations such as the rise of complex civilizations and the reaction of non-western societies to contact with the West. Prerequisite: 200, or 230 or 600 or equivalent.

537 Politics in Primitive Societies

Theoretical and descriptive analysis of the political aspect of primitive societies; the relation of politics to technological development, habitat, and social organization. Prerequisite: 330 or consent of instructor.

538 Law in Primitive Societies

A study of law in primitive societies using the theory and method of comparative legal dynamics. The relation of law to the whole of culture; the function and evolution of law as revealed by the study of primitive societies ranging from simple to complex. Prerequisite: 330 or consent of instructor.

554 Sociological Analysis of Population

Applications of selected sociological theories to analyze and interpret population characteristics and processes such as size, growth, social structure, and social change. Prerequisite: 9 hours of sociology or permission of the instructor.

556 Social Stratification

An analysis of the structuring of societies along social class and caste lines. Emphasis is placed on the class structure of the United States and its implications for educational, occupational and political policies. Prerequisite: Sociology 200 or 600 or consent of instructor.

558 Social Forces in Underdeveloped Areas

An examination of the social factors which influence the growth of industrialization in underdeveloped areas. These factors include cultural tradition, social class stratification, and the problems involved in a shift from rural to urban residency. Case materials from private business enterprises, missionary and educational ventures, U. S. Foreign Aid projects included. Prerequisite: Sociology 200, 330 or 600.

560 Principles of Social Work

A course designed for students without social work experience. It constitutes a general introduction to the basic principles and processes
of social case work and social group work. Prerequisite: minimum of 5 semester hours of sociology.

572 Community Agency Resources 2 hrs. Fall, Winter
A study of community agencies and resources for those concerned with family and personal problems. Emphasis is placed upon the availability of these resources and their effective use by business and industry, speech therapists, guidance counselors, teachers, etc.

573 The Sociology of Political Behavior 3 hrs. Winter
Systematic sociological theory and research applied to the study of American political behavior, including such topics as power, decision making, leadership, and communications. Prerequisite: 6 hours of sociology or consent of instructor.

574 Sociology of Religious Institutions 2 hrs. Winter
A study of the social role of religious institutions and beliefs with particular reference to the United States; the relation between religious and other aspects of society. The course considers social factors affecting the development of different types of religious institutions and the influence of religion on American society. Prerequisite: Sociology 200 or 600.

575 Industrial Sociology 3 hrs. Fall, Winter
A study of human relations in business and industry; the functioning of informal groups and the varying roles of leadership; problems of depersonalization, of worker morale and output, and of labor-management articles.

576 Sociology of Education 2 hrs. Fall, Winter
The classroom as a social situation analyzed in terms of the interaction between teacher-student and student-student. The educative process as a function of the interpersonal relations among teachers and between teachers and administrators. The school as a social system as it affects and is affected by the community in which it is located and society at large. Prerequisite: Sociology 200 or 600, or equivalent.

577 Comparative Institutional Studies 2 hrs. Winter
A comparative study of the structure and the functioning of selected aspects of culture in selected counties or areas and America. The courts, the educational system, the welfare state, class stratification, correctional institutions, political organization and the basic structure of government are considered. Prerequisite: Sociology 200 or 600, or equivalent.

578 Social Structure of the Soviet Union 3 hrs.
A sociological analysis of contemporary Soviet society focusing on the patterns and functions of its basic institutions—the family, government, education, and industry. Consideration will also be given to the existing stratification system in terms of class formation and distribution of power. Prerequisite: 200, 330 or 600, or consent of instructor.
579 Social Structure and Social Change in Japan 2 hrs. Spring

Introduction to Japanese society, focusing upon the contemporary processes of industrialization and urbanization and their impact upon Japanese family life, village organization, urban community, class structure and personality. Prerequisite: sociology 200 or 600 or equivalent.

580 Introduction to Social Statistics 3 hrs. Fall, Winter

An introduction to statistical reasoning with particular reference to social science research. Views statistics as an aspect of scientific inquiry and considers problems of analysis and interpretation of typical social science data. No prerequisite required but some background in algebra is recommended.

592 Family Life Education and Counseling 2 hrs. Winter

Provides the student with a working knowledge of the methods and materials appropriate in the school, the church and other social situations, for working with individuals and small groups who desire preparation for marriage and parenthood. Some attention will be given to the techniques for handling counseling opportunities arising out of these teaching situations. Prerequisite: 200 or 600, or consent of instructor.

598 Readings in Sociology 1-4 hrs. Fall, Winter

Offers graduate students with good scholastic records an independent program of study, arranged in consultation with the instructor. Prerequisite: Honors Program, or consent of the Head of the Department.

Open to Graduates Only

600 Social Dynamics of Human Behavior 2 hrs. Fall, Winter

The concepts of sociology, cultural anthropology and social psychology essential to understanding human development and social behavior are systematically explored and integrated. The student is taught how to assess the concrete social situations in which he finds himself, and in which he observes other people from day to day. This course is not open to those who have had a foundation course in sociology.

604 Seminar in Sociological Theory 2 hrs. Winter

An advanced, intensive study of certain selected theoretical topics of contemporary significance. Prerequisite: One course in social theory.

610 Social Pathology and Personal Deviation 2 hrs.

A study of the social aspects of personal deviation. Subject-matter would include consideration of the alcoholic, the drug addict, the marginal man and the sexually maladjusted. Course considers deviate behavior in light of social background, causative factors and possible therapy. Prerequisite: Sociology 200 or 600, or equivalent.
615 Techniques of Intercultural Adjustment 2 hrs. Winter

A study of intercultural processes of adjustment involving different racial, national and religious groups. The factors giving rise to present-day conflict situations are examined and special emphasis is given to techniques of adjustment through individual and community action. Prerequisite: Sociology 200 or 600, or equivalent.

616 Seminar in Social Problems 2 hrs.

A detailed study of a social problems area through student reports and seminar discussion. Instructor will select specific topic. Course is intended to provide intensive joint exploration of significant sociological issues. Not offered 1964-65.

624 Primary Group Dynamics 2 hrs. Fall

A study of the forces that influence the outcomes of primary group activity. The effects of diverse personalities, of varying leadership roles, of person-to-person interaction and of the responses of the group as a whole are considered. Principles of effective group dynamics are practiced, as well as observed and studied, in the educational setting. Prerequisite: Sociology 200 or 600, or equivalent.

663 Integration of Education and Social Work Techniques 3 hrs. Winter

This course is a specialized social work course restricted to students in preparation for teaching the adult blind. It is designed to afford an opportunity for a discussion of behavior and the effect of behavior on learning and of counseling and guidance as aspects of a sound teaching relationship. Field observations and some limited work with blind clients will give the student a chance to present realistic situations in group discussion as problems in learning. Prerequisite: consent of instructor.

673 Formal Organization 3 hrs. Winter

This course analyzes the nature of large-scale, formal organizations, concentrating on their structure, types of organizational goals, processes of control, authority and leadership, and the relationship of organizations to their social environment. Examples of organizations will be selected from different areas such as education, government, medicine, science, leisure and industry. Prerequisite: 9 hours of sociology.

676 The School and the Community 2 hrs. Fall, Winter

The school as a social institution in the American community. Interaction between the school and the other basic social institutions and their values. The sociological significance of community structures, processes and problems for school-community relationships.

680 Seminar in Research Methodology 2 hrs. Fall

Examine the assumptions, logic and techniques of sociological research, with examples from current research reports and student projects. Prerequisite: One course in research methods.
683 Supervised Research 2 hrs. Fall, Winter

All entering graduate students must register for this course. Purpose is to assist student in selecting, formulating, designing, conducting and reporting the thesis or essay. Includes continuing reports by students of their research progress. Those who plan to do a thesis may, with permission of the instructor and the graduate adviser, continue with Graduate Studies 700 Thesis in Sociology.

685 Advanced Social Statistics 3 hrs. Winter

A study of advanced statistical techniques of special importance to sociology. The emphasis is on procedures designed for analyzing problems involving a large number of variables. Included among the topics studied are multiple and partial correlatives and regression, analysis of variance, factor analysis and scaling. Prerequisite: 580 or equivalent.

692 Family Development 2 hrs. Fall, Winter

The family is analyzed over its entire cycle from marriage to the death of the spouses with special attention devoted to the developmental tasks each family member and the family as a unit must accomplish for family adjustment. The course is designed to provide students who may work with families in one capacity or another with a theoretical framework for diagnosing sources of maladjustment. Prerequisites: Sociology 200 or 600 or consent of instructor.

SPEECH

York, Head; Professors Becker, Brown and Van Riper; Associate Professors Bate, Buys, Erickson, Helgeson and Kuykendall; Assistant Professors Bowen and Smith.

Open to Graduates and Upperclassmen

510 Studies in Oral Interpretation 3 hrs. Winter

Projects in reading and analysis of literature designed to intensify the student’s application of the theory and principles of oral interpretation.

520 Studies in Theatre 3 hrs. Fall

Selected study within the range of the several aspects of theatre including backgrounds, theory and production. Emphasizes concepts rather than skills.

530 Studies in Public Address 3 hrs. Winter

Selected areas of detailed study within the total range of public address.

531 Public Speaking 3 hrs. Fall

The intensive study of speech organization, audience adaptation, and delivery. Includes practice in speaking. Research project required.
532 Persuasion 3 hrs. Winter
Study of factors of human behavior and their ethical implications as related to oral communication. Class activities include research, experimentation and discussion.

540 Studies in Broadcasting 3 hrs. Fall
Analysis in depth of specific issues affecting broadcasting.

544 Broadcasting Regulations 3 hrs.
The role of self-regulation and governmental regulation of the broadcasting industry.

545 Broadcasting Criticism 3 hrs. Winter
Analysis and criticism of programs and programming. Study of writings of major radio and television critics.

560 Studies in Speech Education 3 hrs. Winter
Selected studies in background, methods, materials and procedures in any one of the several speech areas.

561 Teaching Speech in the Elementary School 3 hrs. Winter
Examination of the linguistic development of pre-school and elementary school children, the functions of language, study of the nature of the emotional and physical development of children as related to symbol using behaviors, study of materials and methods for effecting desired behaviors in children's thinking, communicating and enjoyment.

562 Teaching Speech in the Secondary School 4 hrs. Fall, Winter
An examination of the cultural objectives of our time and a determination of the role oral communication plays in a democracy, study of the communication process by model building, examination of the model in order to determine what objectives are related to the oral communication curriculum. A study is made of curriculum content, methods, materials and systems of evaluating the teacher's behavioral objectives.

564 Creative Dramatics for Children 4 hrs. Fall, Winter
Study of the principles, materials and techniques of dramatics with children as a classroom activity in elementary grades. Observation of demonstration groups. Emphasizes creative dramatics and includes the creative approach to formal dramatics.

Open to Graduates Only

600 Problems in Listening 3 hrs.
Explores the role of listening in learning. Research in the field is examined and appraised. Listening tests are taken and discussed. Class members design listening projects or research projects. Focus increases sensitivity to the impact of speech.
610 Seminar in Oral Interpretation 3 hrs. Fall
Oral interpretation as related to techniques and materials of individual and group readings. Provides opportunity to explore problems of various forms and practices in oral interpretation.

620 Seminar in Theatre 3 hrs.
Provides study of broad inter-related aspects of historical and contemporary theatre. Topics include acting, directing, design (scenery and costume) and criticism.

630 Seminar in Public Address 3 hrs.
Explorations into rhetoric, public address, argumentation, and discussion developed from historical and topical perspectives.

631 Group Problem Solving 3 hrs.
Study and practice of the dynamics of groups of various kinds, as well as the methods of arriving at group decision. Includes the understanding of leader and participant roles. Occasionally offered as a workshop course.

640 Seminar in Broadcasting 3 hrs. Winter
Exploration of topics and problems in broadcasting, such as the evolution of radio and television, or the services and responsibilities of the media to non-specialists.

660 Seminar in Speech Education 3 hrs.
Each student selects an area of interest which he pursues independently during the term and reports his findings periodically to his class and instructor. In addition, the history of the profession, ethics and professional practices, research in psychology and speech related to teaching speech, are studied.

662 School Assemblies and Community Programs 2 hrs.
Designed for teachers, administrators, and others who have a role in planning and presenting programs. Stresses the values obtained from assemblies and programs, and deals with organization, planning, presenting, and evaluating such programs. Includes gathering of ideas and materials, as well as experience in planning and participating in programs.

664 Seminar in Creative Dramatics 3 hrs.
Considers relationships of theory, materials and techniques of Creative Dramatics to child development and creative teaching in the elementary school.

Speech Pathology and Audiology

550 Voice and Speech Science 3 hrs. Fall, Winter
This course, for majors in speech pathology and audiology, deals with the embryology and neurology of the speech and hearing mechanism as well as with pitch, intensity, duration and wave composition char-
characteristics of speech signals. Prerequisite: Physiological Processes of Speech (Speech 304).

552 Stuttering and Allied Disorders 4 hrs. Fall, Winter

Designed to provide the student with more detailed knowledge of the nature, causes, and development of stuttering and other serious functional speech disorders. The literature is surveyed, and the various methods for treating these disorders are described in details.

555 Basic Procedures in Audiology 4 hrs. Fall, Winter

A study of the fundamentals of audiology and audiometry. Includes coverage of physics, anatomy, physiology and pathology of hearing; administration and interpretation of hearing tests; and rehabilitation techniques. Observation of and practice in hearing testing included.

556 Aural Rehabilitation 4 hrs. Fall

Study of fundamentals and techniques of speech reading, auditory training, and general rehabilitation of the hearing impaired. Survey of research, methods and materials. Experience in preparation and presentation of lesson plans. Prerequisite: Basic Procedures in Audiology (Speech 555).

558 Organic Speech Disorders 4 hrs. Fall, Winter

This course is concerned with the diagnosis and treatment of the speech disorders of organic origin; aphasia, cerebral palsy, cleft palate and laryngectomy. Prerequisite: Voice and Speech Science (Speech 550).

559 Advanced Procedures in Audiology 4 hrs. Winter

An advanced course in Audiology dealing with hearing disorders and medical techniques of treatment; the significance of certain hearing tests in otologic diagnosis; and a study of hearing aids and hearing aid evaluations. Clinical experience in hearing evaluation also included. Prerequisite: Basic Procedures in Audiology (Speech 555).

Open to Graduates Only

650 Seminar in Speech Pathology 2-6 hrs.

A. Speech Science (2 hrs.)

This course considers instrumentation, procedures and techniques employed in perceptual, physical and physiological analyses of normal voice and speech. Pertinent literature systematically reviewed. Prerequisite: Voice and Speech Science (Speech 550).

B. Voice and Articulation (2 hrs.)

Selected aspects of voice and articulation disorders are critically investigated through the review of relevant literature and through individual study projects. Prerequisite: Voice and Articulation (undergraduate) (Speech 252).

C. Stuttering (2 hrs.)

Therapeutic procedures and methodologies are analyzed and evaluated with reference to major theories of stuttering and pertinent re-
search literature. Prerequisite: Stuttering and Allied Disorders (Speech 552).

D. Cleft Palate and Laryngeal Disorders (2 hrs.)
This course systematically surveys clinical and research literature in the area of cleft palate and laryngectomy problems with specific reference to interprofessional clinical management procedures. Prerequisite: Organic Speech Disorders (Speech 558).

E. Language Disorders (2 hrs.) Winter
Factors which affect language development and symbolic behavior are studied in terms of etiology, symptomatology, and treatment.

653 Diagnosis and Appraisal 5 hrs. Fall, Winter
This course is intended to provide the basic information needed in the examination of persons with speech and hearing disorders. Interviewing techniques, examination procedures in assessing disabilities, etiology and prognosis for voice, articulation, rhythm, language and hearing disorders are the basic content of the course. Experience in the outpatient clinic is provided.

656 Speech Therapy 2 hrs. Fall
This course includes a historical and philosophical survey of the profession of speech pathology as it is practiced in different settings and as it relates to other helping professions. Theories and treatment of major communication disorders are studied systematically with particular reference to interprofessional cooperation in therapeutic processes. Not open to majors in speech pathology except with consent of instructor.

658 Speech Pathology 3 hrs. Fall
In this course the basic pathology of the disorders of communication is examined in terms of servo-system theory, learning theory, and psychopathology.

659 Organization and Administration of Clinical Program 3 hrs. Winter
This course is intended to acquaint the student with the specific problems involved in the organization and administration of speech and hearing services in various clinical settings; hospital clinics, college speech and hearing clinics, special education programs and rehabilitation centers.