The Graduate Program has been granted
Preliminary Accreditation by the North Central Association
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General Information Concerning the Graduate Program at Whitewater

The School of Graduate Studies of Wisconsin State University-Whitewater offers a program designed to improve instruction in the public schools and to train persons for other services related to the operation of schools. At present, several degree programs are authorized. The Master of Science in Teaching degree is intended for secondary, junior-high and elementary teachers who already are certified to teach. The Master of Arts in Teaching degree program offers an opportunity to earn certification to teach in secondary schools while completing the master’s degree. These programs are offered with several majors or emphases which are specified in detail in the description of the curricula which follows. In addition the School of Graduate Studies offers the master’s degree in the fields of School Business Management and Mental Retardation. Other degree programs are being planned and will be announced at such time as they have been given approval.

The Graduate Faculty

The members of the graduate faculty consist of persons drawn from the regular faculty and of visiting staff members. They are selected on the basis of their experience, training, professional reputation and interest in the graduate program.

The Graduate Faculty Committees

The Graduate Council is the committee responsible for the formulation of policy for the School of Graduate Studies. Its decisions are subject to approval by the entire graduate faculty. Members of the Graduate Council are elected by the graduate faculty. The Graduate Library Committee administers the allocation of funds for the purchase of library material and other matters concerning the development of the library as it pertains to the Graduate School. The Graduate Standards Committee deals with academic standards, probation and dismissal. All committees report their actions to the entire graduate faculty and all committee actions are subject to the approval of that body.
Graduate Assistantships and Scholarships

The School of Graduate Studies is authorized by the Board of Regents of State Universities to offer graduate assistantships and graduate scholarships. These are made available to full time graduate students upon the recommendation of their major department. During 1967-68 twenty assistantships were available with a stipend of $2200.00 for two semesters. This is subject to change.

Information

For information on schedules, programs, assistantships or other matters please visit, write, or call
The School of Graduate Studies
Wisconsin State University-Whitewater
Whitewater, Wisconsin 53190
Phone: (Area code 414) 473-4000, Extension 251

General Regulations of the School of Graduate Studies

GRADUATE COURSES

Courses numbered 500 or higher are graduate courses which may be applied toward the completion of a master's degree. Courses numbered under 500 are undergraduate courses and may not be applied toward the completion of a master's degree. A course taken for undergraduate credit may not later be changed to graduate credit. Courses numbered 500 to 599 are senior-graduate. Not more than half of the work in a degree program nor half of the work in a major field may be taken in courses numbered 500 to 599. A course taken previously for undergraduate credit may not be repeated for graduate credit.

Courses numbered 600 or higher are open only to graduate students.

ADMISSION OF GRADUATE STUDENTS

Admission as a graduate student is required prior to registration in any graduate course (course numbered 500 or higher). Previous admission as an undergraduate or completion of a bachelor's degree does not confer automatic admission as a graduate student. Applications for admission may be obtained from the office of the School of Graduate Studies. Please note that admissions as a graduate student are handled by the office of the School of Graduate Studies. The Admissions Office handles only undergraduate admissions. Ap-
Applicants are asked to have transcripts sent by all institutions of higher education which they have attended. These should be mailed by the Registrars of the schools attended directly to the School of Graduate Studies at Whitewater. It is not possible to grant admission until all transcripts are available. Applications for admission should be submitted at least a month before the beginning of the first term which the applicant plans to attend. The applicant is notified as to his admission status and adviser.

ADMISSION REQUIREMENTS

Students may be admitted to the Graduate School either in Good Standing or on Probation. Certain other special admission categories are established for persons not interested in completing a degree at this institution.

Admission in Good Standing

Admission in good standing is based upon the following requirements:

1. Possession of a baccalaureate or higher degree from an accredited institution.
2. Satisfactory mental and physical health.
3. An undergraduate grade point average of at least 2.75 for all undergraduate work (computed on the four point scale) or an average of 2.90 or higher for the last half of the undergraduate work.
4. In the Master of Science in Teaching and certain other programs certification to teach is required for admission.

Admission on Probation

The requirements for admission on probation are the same as those for good standing admission except that persons may be admitted on probation who have an undergraduate grade point average of 2.25 to 2.74 on the four point scale for all undergraduate work completed. Admission on probation is not permitted in the Master of Arts in Teaching program. Admission is not currently authorized in any graduate program if the grade point average is below 2.25. Applicants with an average below 2.25 are urged to take additional undergraduate work in order to raise the average to the point at which admission may be granted.

An applicant who has earned six or more graduate credits at an accredited graduate school outside the Wisconsin State University System and has a grade point average of 3.0 or higher for this work may enter on a probationary status if he meets all requirements other than the undergraduate grade point average.
OTHER ADMISSION CATEGORIES

Transfer Students

Persons who are attending another graduate school and who wish to take graduate courses at Whitewater to transfer to that institution may do so. The School of Graduate Studies provides a form to be completed by an official of the graduate school to which the credits are to be taken in transfer. The form contains certification that the student is attending the other institution and protects the student by containing provisions for approval of the particular work being taken at Whitewater as applying to the degree at the other institution.

Non-Candidate for Degree Students

Persons who are otherwise qualified for admission and who do not wish to complete the master’s degree at this institution may request admission to take graduate courses on the "non-candidate for degree" basis. It is intended that persons in this status shall be permitted to take a limited number of courses.

It is emphasized that persons who have entered as "Non-Candidate for Degree" or "Transfer" students are not assured that credits taken while attending under this status may later be applied toward the completion of a specific degree at Whitewater. It is further stated that students admitted on these bases who later desire to enter a program leading to the master's degree will be required to meet all the requirements for admission at the time they are admitted to a degree program.

PROBATION AND GRADE DEFICIENCIES

Persons who fail to maintain an average of three grade points for all graduate work completed ("B" average) are placed on academic probation. A student admitted on probation or placed on probation for reasons of academic deficiency must attain a three grade point average by the time he has completed twelve additional graduate credits at this institution. Failure to accomplish this will result in the student's being ineligible to take further graduate work. A student admitted on probation will be placed in the good standing status when he has completed a minimum of six credits of graduate work and has an average of three grade points or higher. A student who has been placed on probation for reason of academic deficiencies in graduate courses shall be returned to good standing when he has attained an average of three grade points, subject to the rule stated
above that he may not take more than twelve graduate credits at this institution while attaining this average.

Not more than one course with a grade of "C" in the major field nor more than two courses with a grade of "C" outside the major field may be counted toward completion of a master's degree. If a grade below "C" is earned in a required course, the course must be repeated in order to be applied toward the completion of a degree.

Program Prerequisites

Students entering the various majors offered should have completed work in the major fields as follows: (These represent minimal requirements. Other requirements are stated in the description of each degree program.)

Business Education: Undergraduate major in Business Education for the Master of Science in Teaching program. Undergraduate major in Business Administration or the equivalent for the Master of Arts in Teaching program.

Elementary Education: Undergraduate major in Elementary Education with certification to teach at elementary level.

History and Social Studies: Thirty-five undergraduate credits from History and Social Studies area with a minimum of thirty credits in History or any Social Studies discipline or fifteen credits from any two History and Social Studies disciplines or the completion of the undergraduate Social Studies area major.

Language, Literature and Speech: At least twenty semester hours in the area of the emphasis.

Mental Retardation: Certification to teach.

Music: Twenty-two credits in music including nine in theory, two in music history, eight in applied music, including conducting, and four semesters of participation in music organizations.

School Business Management: Undergraduate major in Business Education, Business Administration or the equivalent.

Certification to Teach in the M.S.T. Program

The Master of Science in Teaching degree is designed for certi-
fied teachers only. Certification to teach in the area of the graduate major is a prerequisite to admission to a program leading to this degree.

**Deficiencies**

If the major department finds that a student lacks the proper background for graduate studies, it may specify that deficiencies be made up even though the student has met the minimum prerequisites as stated in the section on prerequisites above. In some cases these deficiencies may have to be made up by registering in undergraduate courses which would not be counted toward completion of the master’s degree.

**Registration, Maximum Load**

Before the beginning of each term a schedule of graduate courses is published. The schedule contains complete instructions for registration for a particular term.

Students may not be admitted to a graduate course after the first week of classes in a term.

Graduate students purchase their own textbooks, no text rental is charged graduate students and the textbook library is not authorized to issue rental texts to graduate students.

During a summer session a graduate student in good standing may register for a maximum of eight credits and a student on probation may register for a maximum of six credits provided that he registers for the full eight week summer session. Students registering for less than the full summer session may register for one credit for each week attended plus one additional credit, provided that the total registration does not exceed the maximums stated in this paragraph. During a semester, the maximum registration is fifteen credits. Students on probation are advised to limit their registration to twelve credits.

The University reserves the right to cancel courses for which there is insufficient registration and to close courses to additional registration when, in the opinion of the Dean of the School of Graduate Studies, they are filled.
Transfer of Credit

Students who have completed graduate work at other institutions may transfer it to Whitewater to apply toward the completion of a graduate program subject to the following provisions:

1. The credits must be from an accredited graduate school, be of graduate level at the school where taken and have a grade of "B" or higher.

2. The credits must have been earned within five years prior to time of the student’s admission to this institution as a graduate student.

3. The credits must be of such a nature as to fit into the program of graduate studies undertaken at this institution and be approved by this institution.

4. Not more than fifteen credits may be transferred from other universities operated by the state of Wisconsin nor more than six credits from University of Wisconsin Extension nor more than eight credits from other institutions provided that the total of all credits transferred shall not exceed fifteen. The School of Education normally will not accept more than six credits of graduate level professional education.

5. No credit will be accepted in transfer for a correspondence course.

The student wishing to transfer credit should complete a form available at the Graduate Office and must provide transcripts showing the work if such are not already on file. Applications for the transfer of credit will be accepted when the student has completed at least six credits of graduate work at Whitewater and is in good standing.

Grading

Grading is based upon a four grade point system with a grade of "A" providing four grade points per credit. An average of three grade points, "B," is required to remain in good standing as a graduate student. A grade of "P" (Progress) may be assigned in certain courses such as thesis or individual study pending completion of the work. At the time of the completion of such a project a final grade is assigned. If an instructor feels that good reason exists, he may give a grade of "Inc." (Incomplete) in a course at the end of a term. An incomplete grade which has not been made up at the end of a year becomes a failing grade.
Changes in Registration, Cancellation of Courses, Withdrawal from School

The rules of the University, as stated in the Catalog, apply. Changes from one course to another may not be made after the first week of the term. A course may not be cancelled after the fifth week of the semester or after half of the duration of a summer session course. In cases of withdrawal from school the refund regulations as stated in the University Catalog apply and only a partial refund of fees is made. No refund may be made in cases of withdrawal after the fifth week. IT IS OF EXTREME IMPORTANCE THAT A GRADUATE STUDENT WHO WISHES TO CHANGE REGISTRATION, CANCEL A COURSE OR WITHDRAW FROM SCHOOL SECURE AND COMPLETE THE PROPER FORMS WHICH ARE OBTAINABLE FROM THE OFFICE OF THE SCHOOL OF GRADUATE STUDIES. FAILURE TO DO THIS MAY RESULT IN A FAILING GRADE FOR NONATTENDANCE. IF NECESSARY, THE FORMS MAY BE OBTAINED BY MAIL OR REQUESTED BY PHONE.

Fees

Fees are set by the Board of Regents of State Universities and are subject to change without notice. The fees shown are those in effect at the time this bulletin was prepared. The fees include University Center and Activity fees but do not include textbook rental fees which are not paid by graduate students. The cost of textbooks, if assigned, differs widely in various classes but may be expected to total $10.00 to $15.00 per class.

<table>
<thead>
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</thead>
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<td>$19.00</td>
<td>$ 43.00</td>
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<tr>
<td>2</td>
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<tr>
<td>5</td>
<td>95.00</td>
<td>215.00</td>
</tr>
<tr>
<td>6</td>
<td>114.00</td>
<td>258.00</td>
</tr>
<tr>
<td>7</td>
<td>133.00</td>
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<tr>
<td>8</td>
<td>152.00</td>
<td>344.00</td>
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<tr>
<td>9 or more</td>
<td>171.50</td>
<td>381.50</td>
</tr>
</tbody>
</table>

Late registration fee for any registration after the regularly designated registration period as shown on the graduate course schedule — $10.00. Graduation fee — $12.00.
Graduation Requirements

General requirements for graduation are printed here. Specific requirements for each degree are stated with the description of that degree program.

Credit Requirements

A minimum of thirty graduate credits distributed according to the requirements of the specific program being followed is required by the School of Graduate Studies. If more than thirty credits are required in a particular program, this fact will be stated in the program description contained in this bulletin. Undergraduate courses taken to make up deficiencies in background or in supervised teaching will not be counted toward the number of graduate credits required for the degree.

Application for Candidacy and Time Limit

Students who have completed twelve to eighteen credits of graduate work and are in good standing are required to file an application for candidacy form which may be obtained from the Graduate Office. This is intended primarily to determine the student's plans for course work to complete the degree. The student has five years to complete the degree after being admitted to candidacy. Any extension of this time requires action by the Graduate Council and will have to be based on good cause.

Seminar Paper or Thesis Option

Students are permitted to select either of two plans in respect to the thesis or seminar paper. One or the other plan must be followed in order to complete the master's degree.

PLAN A. Preparation of a thesis for which up to six credits may be earned in the major field. This credit may be applied toward the completion of course requirements in the major field. An oral thesis examination is required.

PLAN B. Preparation of a seminar paper growing out of the required seminar, Education 701, dealing with some problem of teaching in the student's area of specialization. No graduate credit is given for the seminar paper. Regulations require that the paper be completed not later than one year after completion of Education 701, Seminar. This time limit may be extended by the Dean.

Students should consult with their adviser or the Dean of the School of Graduate Studies before making a choice. Each paper is expected to contain evidence of research on the part of the student and must be submitted in a form and quality specified by the School
of Graduate Studies. The degree is not conferred until this require-
ment has been met. Theses and papers should be submitted in final
acceptable form at least a month before the end of the term in which
one plans to graduate.

Application for Graduation and Comprehensive Examinations

An application for graduation and an application for the compre-
hensive examinations may be secured from the Graduate School of-
fice. These forms must be completed and returned in the first week
of the summer session or the first month of the semester in which the
student plans to graduate. A graduation fee of $12.00, subject to
change, should be paid with the filing of the request for graduation.

Comprehensive Examinations

The passing of comprehensive examinations in the major field is a
requirement for the completion of a master's degree. Examinations
are written and are intended to take approximately three hours. Com-
prehensives are given once each term. Questions may be concerned
with any graduate work done in the major, including credits transfer-
ered from elsewhere. Comprehensive examinations are graded
either “passed” or “failed.” A student receiving a “failed” grade may
take examinations one additional time but a full term must elapse
between the first and second attempt.

Seminar and Introduction to Research Requirement

Education 701, Seminar - Problems in Teaching, is a required
course unless specifically waived in a particular program. The
course is offered in several sections and the student shall select the
section which fits his program or major. At the time of the publication
of this bulletin, sections are authorized for secondary students, sec-
ondary Business Education students, and elementary students. Stu-
dents in the junior high program are advised to register in the sec-
ondary section. Students in the School Business Managers program
should register in the Business Education section.

Students who entered the graduate program after January 1, 1967,
are also required to take Education 640, Introduction to Research, as
a prerequisite to the seminar. Students who entered earlier are urged
to register for Education 640.
Residence Requirements

At least half of the graduate work required in any master’s degree program must be taken in residence on this campus. Evening and Saturday courses are considered as residence credit. Work taken at Pigeon Lake in the Biological Sciences is designated as residence credit; however, a student in that field must have been registered as a full time student at Whitewater for one summer or the equivalent in order to complete the degree at this institution.

General Notices

The information contained in this bulletin supersedes previous publications. Assurance cannot be given that courses listed here will be given in any specific term. Courses and programs approved after the publication of this bulletin may be offered even though they are not listed here. Fees are subject to change without notice. Graduate students are responsible for the meeting of terms and conditions specified here for completion of the degree and exceptions to the regulations may not be made except through actions taken by authorized committees of the Graduate Faculty or the entire Graduate Faculty in a regular meeting.

Wisconsin State University-Whitewater reserves the right not to release a student’s record or any information based upon the record when the student has failed to discharge any obligation, financial or otherwise, to the University.

A student completes a degree program under the terms and conditions specified at the time he entered the program. When new conditions for graduation are stated, however, a student who feels that the new terms are to his advantage may request permission from the Dean of the School of Graduate Studies to meet them. Such permission will be given if it seems in the best interest of the student and the institution.

Programs Leading to the Master’s Degree

The Master of Science in Teaching Degree

The Master of Science in Teaching degree is offered for secondary, junior-high and elementary teachers. Students in an elementary or secondary program must be certified to teach in the area of the graduate major. Students may be admitted to the junior-high program with certification to teach either in elementary or secondary schools. A total of at least thirty graduate credits, properly distributed, is required in the program. Students are required to pass comprehensive examinations in the major field before being awarded the degree. A thesis or seminar paper is required.
WISCONSIN STATE UNIVERSITY-WHITEWATER

The Master of Science in Teaching-Secondary

The Master of Science in Teaching for secondary teachers is offered with majors in the following areas: Business Education; History and Social Studies (with an emphasis either in Geography or History and supporting work in Economics, Political Science and Sociology); Language, Literature and Speech (with an emphasis in English or Speech-Drama); Music (students in the music major may emphasize either secondary or elementary music); Mathematics and Science (with an emphasis only in Biology at this time).

Requirements for the M.S.T. for Secondary Teachers

At least thirty credits of graduate work distributed as follows:
Liberal Arts Foundations 6 to 9 credits.
Professional Education 6 to 9 credits.
(The work in Professional Education must include Education 701, Seminar in Problems of Teaching. Persons admitted as graduate students at Whitewater after January 1, 1967, must also take Education 640, Introduction to Research.)
Credits in the major field 12 to 18 credits.
Thesis or Seminar paper and Comprehensive examinations are required.

The Master of Science in Teaching for Junior High Teachers

Certification to teach either in elementary or secondary schools is required for admission to the program. Requirements differ for those certified for elementary and secondary teaching. A total of at least thirty graduate credits is required. Persons completing the program must have a major outside of education; this should total at least 34 credits in an academic field. One may combine undergraduate and graduate credits in completing this 34 credit major. It is also considered advantageous to have a 22 credit minor. The program is offered with majors in the following fields: Mathematics and Science (Biology emphasis only); History and Social Studies (History or Geography emphasis); Language Literature and Speech (English or Speech emphasis). Persons certified to teach in secondary school usually will have met the requirements of having a major. Persons entering the program with elementary certification may have to take additional work beyond the minimum number of credits in the program to complete the number of credits required for a major. In addition to the major requirement, specific courses are required depending upon the program being followed.
Conversion of Secondary Teachers to Junior High Teachers

Persons already certified to teach in secondary school are required to take work in the following areas:
- Junior High Curriculum — 3 credits
- Adolescent Psychology — 3 credits
- Introduction to Guidance — 3 credits
- Teaching Reading in Elementary Schools — 2 credits
- Seminar, Education or major field — 2-3 credits
- Education 640, Introduction to Research is required for those admitted after January 1, 1967 — 2 credits

Conversion of Elementary Teachers to Junior High Teachers

Persons already certified to teach elementary school are required to take work in the following fields:
- Junior High Curriculum — 3 credits
- Psychological Foundations of Education OR
  Adolescent Psychology — 3 credits
- Seminar in Education or major field — 2-3 credits
- Education 640, Introduction to Research is required for those admitted after January 1, 1967 — 2 credits
  Additional requirements for the M.S.T. in Junior High

The remaining credits necessary to complete the degree may be taken in major and minor fields. Thesis or seminar paper and comprehensive examinations are required.

The Master of Science in Teaching for Elementary Teachers

Certification to teach at the elementary level is required for admission to the program. A minimum of thirty credits of graduate work is required for the degree. Course work shall be distributed as follows:
- Professional Education, up to 15 credits
  (This may include Educational Foundations Courses, courses in elementary education and such other education courses as the adviser may approve. It must include Education 701, seminar. For persons admitted after January 1, 1967, Education 640, Introduction to Research, 2 credits, is required.)
- Graduate work in areas outside of Professional Education — 15 credits
The total of work done in Professional Education and in other areas must be thirty graduate credits.
Students in the Elementary M.S.T. program may distribute their work both in Education and areas outside of Education in such a way as to provide a general program or they may, with the consent of their adviser, arrange their course in such a way as to provide an opportunity to specialize in areas such as mathematics, reading, or social studies.

The thesis or seminar paper and comprehensive examinations are required.

The Master of Arts in Teaching Degree

The Master of Arts in Teaching degree is designed for persons who hold a bachelor’s degree from an accredited institution but who lack the courses required for certification. In a single program it offers the master’s degree, certification to teach in secondary school and an opportunity to strengthen or develop teaching areas. The program is offered only for training as a secondary teacher at this time. At present only graduate students admissible in good standing are eligible to enter this program. (See the section on admission requirements.) A minimum of thirty graduate credits and eight undergraduate credits in Supervised Teaching is required for completion of the program. The requirements for certification to teach in secondary school must be met in order to receive the degree. In the event that the applicant for the program has an undergraduate major for which there is not a demand in respect to the need for teachers, he will be advised to develop another major. This may require additional work as an undergraduate in the new major area in order to qualify for admission as a graduate student in that area. Such undergraduate work would not be counted toward the master’s degree. In order to be certified, a major of 34 credits in the field is required. It is strongly recommended that a minor of at least 22 credits be completed in addition. In completing the major and minor the student may count both graduate and undergraduate credits.

Majors offered: The Master of Arts in Teaching is offered with a major in the following areas: Business Education; History and Social Studies (with emphasis either in Geography or History); Language, Literature and Speech (with emphasis either in English or Speech); Music, Mathematics and Science (with emphasis in Biology only). The degree is offered only for training as a secondary teacher.
Requirements for the Master of Arts in Teaching

Graduate Credit in Professional Education—12 credits minimum

To include courses in Educational Psychology, Measurements, methods in the major and Education 701, Seminar, Problems of Teaching. Students who were admitted after January 1, 1967, must take Education 640, Introduction to Research.

Undergraduate credits in Supervised Teaching — 8 credits

Graduate credits in major or minor fields to strengthen or develop teaching areas — 18 credits minimum

Total minimum number of credits in the program — 38

Thesis or seminar paper and comprehensive examinations are required.

The Master of Science in Education-Mental Retardation

The program is designed to train teachers of the mentally retarded. Certification to teach at some level is required for admission. Persons entering the program are expected to have had undergraduate courses in arts and crafts, music methods, art methods or both. A minimum of thirty graduate credits is required.

Requirements for the M.S. in Education-Mental Retardation

Liberal Arts Foundation — 3 credits

Educational and Psychological Foundations — 6 credits

General Area of the Exceptional Child — 9 credits

Specialized Area of Retardation — 12-18 credits

A thesis or seminar paper and comprehensive examination are required.

Master of Science in School Business Management

The program is designed to meet the requirements of school business managers. Possession of a bachelor's or higher degree from an accredited institution with a major in Business Administration, Business Education, or the equivalent is required. A minimum of thirty credits is required for completion of the degree.
Requirements for the M.S. in School Business Management

**REQUIRED COURSES**

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<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>Bus. Ed. 670</td>
<td>Intro. to School Business Management</td>
<td>2 or 3</td>
</tr>
<tr>
<td>Educ. 673</td>
<td>Legal Aspects of Education</td>
<td>2 or 3</td>
</tr>
<tr>
<td>Bus. Ed. 672</td>
<td>School Fund Accounting</td>
<td>2 or 3</td>
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<tr>
<td>Educ. 701</td>
<td>Seminar</td>
<td>2</td>
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</tbody>
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Students admitted after January 1, 1967, are required to take Educ. 640, Introduction to Research, 2 credits

**ELECTIVES IN BUSINESS**

<table>
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<tr>
<th>Course Code</th>
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<td>Administrative Office Services</td>
<td>3</td>
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<td>Bus. Ed. 623</td>
<td>Internship</td>
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<td>Bus. Ed. 547</td>
<td>Data Processing</td>
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<td>Bus. Ed. 548</td>
<td>Programing Business Data</td>
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<td>Machine Analysis and Management</td>
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<td>Bus. Ed. 721</td>
<td>Accounting Systems and Procedures</td>
<td>3</td>
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<td>Bus. Ed. 722</td>
<td>Office Communication Systems and Procedures</td>
<td>3</td>
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<td>Acctg. 453</td>
<td>Auditing</td>
<td>3</td>
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<tr>
<td>Bus. Ad. 536</td>
<td>Purchasing &amp; Material Management</td>
<td>3</td>
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<td>Insurance</td>
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<td>Collective Bargaining</td>
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<td>Budget and Controls</td>
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<td>1 to 6</td>
</tr>
<tr>
<td>Bus. Ed. 698d</td>
<td>Workshop for School Business Officials</td>
<td>1 (may be repeated)</td>
</tr>
</tbody>
</table>

**ELECTIVES IN EDUCATION**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educ. 560</td>
<td>Principles of Vocational and Adult Educ.</td>
<td>2</td>
</tr>
<tr>
<td>Educ. 703</td>
<td>Psychological Foundations of Educ.</td>
<td>3</td>
</tr>
<tr>
<td>Educ. 702</td>
<td>Philosophical Foundations of Educ.</td>
<td>3</td>
</tr>
<tr>
<td>Educ.</td>
<td>School Community Relations</td>
<td>3</td>
</tr>
<tr>
<td>Educ.</td>
<td>Curriculum Theory</td>
<td>2 or 3</td>
</tr>
<tr>
<td>Educ. 673</td>
<td>School Plant Planning &amp; Const.</td>
<td>2 or 3</td>
</tr>
</tbody>
</table>

Thesis or seminar paper and comprehensive examinations are required.
Graduate Course Offerings
Course Numbers

500 Series — Senior-Graduate Courses. Not more than half of the credits earned, either in the student's entire program or in the major field may be in courses in the 500 series.

600 and 700 Series — Courses open only to graduate students.

Credit in courses numbered under 500 cannot be applied toward the completion of an advanced degree.

Group I. Liberal Arts Foundations

Art 601  Art and the Artist in Contemporary Culture  3 credits
A slide lecture and discussion course to acquaint students with theories concerning art today as it is affected by the society in which we live... its thought patterns, as well as the social, political, economic and religious setting.

Art 701  Historical and Philosophical Concepts of Arts  3 credits
A general education course designed for those students with little or no background in art. The course will attempt to develop understanding of the philosophical and aesthetic aspects of art in both its historical and contemporary phases. It will deal with the arts in the life of the individual and with the functions of the arts in society.

Biol. 701  Integrated Biological Principles  3 credits
A liberal arts foundation course designed to integrate the subject of biology and relate it to other natural sciences, social sciences and humanities, by the exploration of major biological concepts. Open to experienced elementary and secondary school teachers who have had an introductory course in biological science and who are not specializing in a biological science. Includes laboratory and field work.

Bus. 601  The Consumer in Contemporary Society  3 credits
A study of our own decision making to acquire goods and services. A reading and discussion course for all teachers in elementary and secondary schools. A case study approach to understanding larger economic problems that arise because of the way we behave as consumers.
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Econ. 703</td>
<td>The American Economy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The role of economic systems. Structure and operational concepts in the American economy. The role of government in the American economy.</td>
<td></td>
</tr>
<tr>
<td>Econ. 763</td>
<td>Current Economic Problems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An examination of the basic economic issues and goals, including economic growth, international economic policy problems, monetary and fiscal policy, wage and inflation issues, problems of competition and monopoly, and relations of government and free enterprise.</td>
<td></td>
</tr>
<tr>
<td>Eng. 701</td>
<td>Language in Society</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Historical growth and continuing development of the English language and its uses in society, including a study of current usage and principles for evaluating language in use. For experienced elementary and secondary school teachers who have completed the lower division course requirements in English and who have not had similar work.</td>
<td></td>
</tr>
<tr>
<td>Eng. 702</td>
<td>Literature and the Human Experience</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>An introduction to the study of literature as an instrument for man's understanding and taking possession of his own experience. A few central works in poetry and prose will be studied. Prerequisite: Completion of six credits of Sophomore Literature.</td>
<td></td>
</tr>
<tr>
<td>Geog. 601</td>
<td>Basic Concepts in Geology</td>
<td>3</td>
</tr>
</tbody>
</table>
|          | A graduate level course covering the important aspects of both physical and historical geology. Laboratory studies will stress the recognition of the common rocks, minerals and fossils with emphasis on those found in Wisconsin. Two or three field trips will be conducted for field studies. Open to all students that have not had Geology 311 or 312 or their equivalents in other institutions.
Geog. 701 World Populations and Resources 3 credits
A study of the elements of populations, its numbers distribution, and characteristics with an analysis of selected population, their resource bases, and related problems. Open to experienced elementary and secondary school teachers who have met the introductory lower division course requirements in history and the social studies for their particular bachelor's degree program and who have not had similar work.

Hist. 702 Great Issues in Western History 3 credits
Discussion of selected issues in European and American history based upon a study of the courses. Open to experienced elementary and secondary school teachers who have met the introductory lower division course requirements in history and social studies for their bachelor's degree program and who have not had similar work.

Math. 703 Fundamental Concepts of Mathematics 3 credits
A course designed to acquaint the student with some of the basic concepts and structures of mathematics. Ideas of modern mathematics, elementary logic, comparison of classic and modern geometry, and development of the basic number systems are considered. Open to experienced elementary and secondary school teachers who have had high school mathematics and who are not specializing in mathematics.

Music 701 Music in Contemporary Culture 3 credits
The study of selected masterpieces representing the various cultures which are part of our musical heritage. The work will include studies toward the aesthetics and criticisms of the music, the history and background of its composer and his music to contemporary thought.

Phil. 601 Great Issues in Western Philosophy 3 credits
A study of four major works from ancient, medieval, modern and contemporary philosophy in their historical setting. Basic questions, such as "What exists?" "What is knowledge?" and "What is volition?" will be probed for the purpose of learning the replies of leading philosophers in the western tradition.
Phy. Sc. 702  Physical Science  3 credits
An examination in depth of certain developments in physical science from the standpoint of the principles involved and the impact on man's thought and way of life. Open to experienced elementary and secondary school teachers who have had an introductory course in a physical science.

Pol. Sc. 601  Foundation of Politics  3 credits
A general introduction to the science of politics in all its aspects. The course is concerned both with American and European politics as well as international problems.

Religion 611  World Religions  3 credits
The origins, beliefs, practices, and development of six major world religions: Hinduism, Buddhism, Confucianism, Judaism, Christianity, and Islam.

Speech 703  Foundations of Oral Communications  3 credits
The aim of this course is to develop an understanding of the foundations of and some skills in oral communication.

Speech 704  Foundations of Dramatic Art  3 credits
This course is an intensive study of the theater as an art and as a cultural force. The approach is an aesthetic and historical consideration of dramatic literature and the interpretative arts of the stage, motion pictures, radio and television.
GROUP II. PROFESSIONAL EDUCATION

EDUCATIONAL FOUNDATIONS AND SEMINARS

Students in elementary education may combine work in educational foundations and specialized education courses. Students in secondary education normally take their professional education work in the educational foundation areas. All students in the Master of Science in Teaching program are required to take the appropriate section of Seminar 701. Students admitted after January 1, 1967, are required to take Education 640.

604  SOCIOLOGICAL FOUNDATIONS OF EDUCATION  3 CREDITS

Designed to relate the discipline of sociology to the field of education, to provide a meaningful background to social experiences, and to acquaint the student with relevant research in the field of educational sociology. Open to elementary and secondary teachers.

605  EDUCATIONAL CLASSICS  3 CREDITS

Selected writings which have been of significance to education will be explored in some depth. For each work, the social context in which it was written will be examined and the author’s thesis and purposes will be analyzed. Expert opinion as to its educational value will be reviewed.

640  INTRODUCTION TO RESEARCH  2 CREDITS

A basic course in the methods of research in education including a study of the literature and techniques of research, the planning and conduct of a research paper, the basic types of research with emphasis upon experimental design, the collection, analysis and interpretation of data and a brief introduction to the statistics used in research. This course is a prerequisite to Education 701, Seminar, and is required for persons entering the graduate program after January 1, 1967.

701  SEMINAR, PROBLEMS IN TEACHING — ELEMENTARY  2 CREDITS

Definition of problems and issues, critical examination of the research literature and planning of experimental investigations. Open to elementary teachers. See note under Problems in Teaching — Secondary. For persons entering the graduate program after January 1, 1967, Education 640, Introduction to Research, is a prerequisite.
Seminar, Problems in Teaching — Secondary 2 credits
Definition of problems and issues, critical examination of the research literature and planning of experimental investigations. Open to secondary teachers. Students normally take the seminar after they have completed 6 to 8 credits of graduate work. It is recommended that the seminar be taken during the second summer in residence if the student is completing the degree in summer sessions. For those persons electing to present a seminar paper instead of a thesis, the paper is begun in the seminar and the student has two semesters following the seminar in which to complete it. Under unusual circumstances this time may be extended with the permission of the Dean of Graduate Studies. For persons entering the graduate program after January 1, 1967, Education 640, Introduction to Research, is a prerequisite.

Seminar, Problems in Teaching—Business Education 2 credits
The seminar is a specified offering for Business Education teachers. It is required of all majors in that field. A general description is contained in Seminar, Problems in Teaching — Secondary. For persons entering the graduate program after January 1, 1967, Education 640, Introduction to Research, is a prerequisite.

Philosophical Foundations of Education 3 credits
An examination of critical issues in education; their ideological and social bases. Open to experienced elementary and secondary school teachers with a certificate to teach.

Psychological Foundations of Education 3 credits
Designed to provide psychological background relative to human abilities and behavior; individual differences, learning; and evaluation; with implications for teaching. Open to experienced elementary and secondary school teachers with a certificate to teach.

Specialized Education Courses

Psychological Testing 3 credits
Emphasis is placed on the principles of psychological testing. An attempt is made to teach the student how to evaluate and interpret psychological tests and to judge the merits of new tests as they appear. The course would be appropriate for any-
one who plans to use tests, such as the teacher, counselor, school psychologist, personnel psychologist in industry or government and the clinical psychologist. The nature of the course provides continuing opportunities for illustrating and applying the principles of psychological measurement. It is required that students have a basic course in statistical methods prior to taking this course, or be taking one concurrently.

526 Teaching English in Secondary Schools 3 credits
To familiarize the student with adolescent behavior, needs and interests as they may apply to the teaching of the language arts. To acquaint the student with current trends in the curriculum. To examine the content of the language arts with specific emphasis on language, composition and literature. To illustrate methods of planning and presenting the content. To familiarize the student with the available materials for teaching the language arts.

529 Teaching of Science in Secondary Schools 3 credits
To acquaint the students with basic educational techniques. To develop in the students the ability to utilize effectively techniques peculiar to the science program: namely, laboratory learning. To acquaint the students with new approaches to science. To familiarize the students with the new developments in the science curriculum. To help the students gain a broad vision of their teaching profession, their science area, and their responsibilities to all students. To provide students with at least two full days of observations in selected high schools.

530 Teaching Social Studies in Secondary Schools 3 credits
Subject organization; selection of content; methods of presentation; test construction; resources and equipment; objectives in the social studies area.

531 Teaching Speech in the Secondary Schools 3 credits
To develop an awareness on the part of the student of the importance of speech education as an integral factor in the total educational enterprise. To help and encourage the student to develop for himself a workable philosophy of speech education. To improve the student's skill in preparing courses of study, units, and lesson plans adapted to the needs and abilities of his students. To suggest methods of and improve skill in evaluating his own work as well as that of his students. To give the student direction in planning and conducting extra-curricular activities.
535 Graphics Presentation 3 credits
A course designed to train teachers in the preparation and use of graphic media, to include training in techniques and the use of graphic preparation equipment. Students will be expected to prepare a number of major graphic projects.

550 Introduction to Guidance and Counseling 3 credits
The purpose of this course is to help students prepare to understand the guidance programs of elementary and secondary schools. The work will help them to gather and organize materials to be used by guidance directors and to open for the student the possibilities of further work in education and vocational guidance. Elective. Prerequisites: Psychology 211 and Education 212 or Education 222.

555 Teaching Emotionally Disturbed Children 3 credits
A review of behavior disorders in children, specific techniques in handling these problems in a classroom, the psychological role of the teacher, aspects of working with parents of disturbed children.

556 Mental Retardation 3 credits
The course will review the early identification and care of the mentally deficient child, the retarded child in a family setting, diagnosis of retardation, patterns of development, special approaches to therapy and rehabilitation.

557 Education of the Mentally Retarded 3 credits
A course which covers methods specific to teaching and training retarded children. Included are a review of early educational programs, special class programs, teaching procedures in specific subject areas and the procedures affecting social adjustment.

558 Audio-Visual Education 3 credits
A senior-graduate course designed to familiarize teachers with various types of audio-visual materials and the philosophy and techniques for their effective use in the classroom. Some practical classroom experience in operation and presentation of these materials is provided.
562 School Safety Management
3 credits
Designed as a required course in the Safety Education minor to better prepare prospective teachers in the techniques and methods best used in coordinating the entire school safety program. Also designed for teachers and school administrators and others responsible for directing or supervising safety programs in the school. Deals with the problems, policies, practices, and procedures involved in the organization, administration and supervision of a comprehensive accident prevention and safety education program for the school.

563 Industrial Safety Management
3 credits
This course is designed for future teachers who desire a minor in Safety Education and for business administration students who may go into the Industrial Management field.

564 Language and Learning Disorders
3 credits
Consideration of development of symbolic processes, organic factors disruptive to cognitive developments, physiological impairments in the learning process, and approaches in the education of children with such disabilities. Prerequisite: Completion of Psychology of Exceptional Children or consent of instructor.

565 Traffic Safety Education
3 credits
The course is designed especially for teachers and safety leaders. Development of principles and practices of safety. Understanding of traffic safety problems. New methods and techniques for safety.

600 Individual Studies
1-2 credits
Projects may be completed under the conditions explained in Business Education 600.

611 Early Childhood Education
2 credits
A study of historical and philosophical foundations, the goals and objectives, current practices, and significant research relative to early childhood education.

650 Teaching Data Processing
3 credits
Content, materials and techniques in teaching data processing in secondary and technical schools. Includes development, present status and trends in data processing. Special emphasis on physical facilities and equipment.
651 Administration of Educational Media Programs  2-3 credits
Consideration of administrative policies and practices pertinent to operation of effective media programs in schools, school systems, and higher education institutions. Includes such aspects as development planning, fiscal management, education and coordination with overall instructional development objectives of the system. Prerequisites: Education 458 or approval of instructor.

655 Construction and Use of Classroom Tests  3 credits
A course especially for experienced teachers. The role of testing, test planning, item-writing, essay testing, test administration, scoring, interpretation of scores, analysis and grade assignment. Prerequisites: A basic course in educational measurements and evaluations and graduate standing.

661 Modern Math in the Elementary School  2 credits
A consideration of current trends in method and curriculum in elementary school arithmetic; the scope, sequence and content of the modern arithmetic program with special emphasis on modern innovations in arithmetical content and method; and the relationship of methods, curriculum and evaluation to child development.

663 Social Studies in the Elementary School  2 credits
A comprehensive consideration of the objectives, content, methods including unit procedures, materials, including objectives, models and exhibits as well as textbooks, collateral reading, maps and globes; and means of evaluating in the social studies.

664 Reading in the Elementary School  3 credits
Problems arising in a well-rounded reading program; development of basic reading abilities and skills; improvement of attitudes and tastes; adjusting materials and methods to individual needs.

666 Corrective Reading  3 credits
A comprehensive consideration of types of reading and study difficulties, the principles and techniques of diagnosing such difficulties and the methods and materials useful to the classroom teacher in the remediation of reading problems. Students who have previously taken the graduate course in Reading in the Elementary School would not normally take this course without consent of the instructor.
667 Diagnosis of Reading Difficulties  3 credits
A course especially designed for teachers interested in becoming qualified for the Wisconsin Certificate of Specialist in Reading. Special reading instruction in activities which can be successfully performed in a reading-laboratory situation including all those normally carried on in a regular classroom, plus those requiring special equipment to diagnose and treat the dynamics of reading difficulty.

670 Supervision of Student Teachers  2 credits
Students will study the role of the cooperating teacher in guiding student teachers in applying the general and professional training which they have acquired in their preparation for becoming a teacher. Open to teachers with two or more years' experience. Provision may be made for separate sections for elementary and secondary teachers. Previous restrictions preventing credits earned in the course from being applied toward the completion of a degree have been repealed and the course may be counted in meeting requirements for credits in professional education.

673 Legal Aspects of Education  2-3 credits
A study of the statutes and judicial decisions of Wisconsin and other states affecting public school education. Legal authority, powers and liabilities of school personnel, legal control and limitations of school finance, curriculum and property. Authority and responsibilities of school personnel. School districting; taxation and expenditure of funds.

675 Junior High Curriculum  3 credits
Historical foundations and development; underlying philosophies and unique functions; nature and needs of the junior high school student; recommended and promising curriculum innovations; organization and administration of the program with special attention to the problems of both the teachers and administrators.

680 Teaching Foreign Language Speaking and Listening Skills in the Elementary School  3 credits
The course, along with Education 681 and 682, is designed as an intensive study of the teaching of foreign language in the elementary schools. The three courses are designed to be taken at the same time as a full time summer program for qualification of teachers as language instructors through fourth grade level.
WISCONSIN STATE UNIVERSITY-WHITEWATER

681 Teaching Foreign Language Reading in the Elementary School 3 credits
See Education 680 above.

682 Teaching Foreign Language Writing in the Elementary School 2 credits
See Education 680 above.

698 Workshop and Special Studies
Variable credit, see individual announcements. Special workshop projects in areas to be determined by the department. Workshops and special study projects are frequently established to meet the needs of students during an individual term. The schedule for each term indicates the courses being offered in this category.

699 Thesis
Credit by arrangement. A total of from three to six credits is authorized.

721 The Exceptional Child 3 credits
A survey of the needs and nature of children who are mentally retarded, gifted, emotionally disturbed, or who have visual, hearing, speech, or motor handicaps. Intended both as an introductory course for those preparing to teach exceptional children and as a course designed to assist the regular classroom teacher in recognizing and interpreting the significance of development deviations.

722 Issues in Elementary Education 3 credits
Current critical issues in education on the state, national, and international levels, with particular reference to the elementary schools.

723 Foundations of Educational Measurement 3 credits
Introduction to a theory of mental measurement with particular reference to measuring or assessing intelligence, achievement, validity, types of scales, types of norms, etc., will be considered.

724 Individual Intelligence Testing 3 credits
An intensive study of the Stanford-Binet and Wechsler Scales. Test standardization, reliability, and validity will be thoroughly reviewed. Practice will be given in administration, scoring, and interpretation.
725 Field Work with Exceptional Children 3 credits
Practical experience in state and community agencies and in public school programs for exceptional children.

741 Principles of Appraisal and Evaluation in Education 3 credits
Introduction to methods of appraising abilities by means of the I.Q., E.Q., Centile score, and standard scores. Consideration of such devices and techniques as interest inventories, personality inventories, achievement batteries, aptitude tests, intelligence tests, sociometry, and projective techniques. Students will take, score, and interpret commonly used tests in class.

762 Curriculum in the Elementary School 3 credits
A consideration of basic concepts of curriculum development; the relations of foundation areas to the problems of curriculum. Assistance to the individual teacher in understanding procedures and plans for bringing about curriculum changes at the local level. Opportunity to put theory into practice with guidance from the instructor.

765 Science in the Elementary School 2 credits
Study of the present courses of study in elementary science, basic principles of science appropriate to elementary grades, techniques of teaching the science principles, materials used in the teaching of science, and the techniques of evaluation in science.

771 Introduction to Mental Retardation 3 credits
An introduction to the etiology and the social, educational, and vocational aspects of mental retardation.

772 Education of the Educable Mentally Retarded 3 credits
Instructional practices in the education and vocational preparation of educable mentally retarded youth within the adolescent age range.

Phy. Ed. 578 Physical Education for the Exceptional Child 3 credits
The course emphasis is on exploring physical education programs for the self-contained classroom teacher and for recreational leaders in institutional setting and day care centers who deal with exceptional children who are handicapped in physical activities.
Group III. Courses in the Specialized Areas of Major and Associated Fields

Business Education

540 Methods and Materials of Teaching Distributive Education 2 credits
A practical analysis of the various methods, teaching devices and sources of information in teaching salesmanship, merchandise information and display. Teaching content of the various related courses will be analyzed. Prerequisite: Admission to professional education.

543 Administrative Office Services 3 credits
The solution of office problems from the point of view of the supervisor, including principles of management and office organization with consideration to physical facilities, the general nature of office work, personnel relations, and managerial control of office output.

547 Data Processing 2 credits
An introduction to computer systems designed to provide a foundation for detailed study of specific systems.

548 Programming Business Data 3 credits
Analysis of the functions and capabilities of a specific data processing machine in order to become familiar with the tools and raw material necessary to be a programmer. Includes exercises and case studies.

560 Principles of Vocational and Adult Education 2 credits
The purpose is to acquaint the student with the historical development of vocational education, the philosophy on which it is based, the principles and practices to implement this philosophy, and the organization of vocational education in public secondary and vocational schools. Special study will be made of the implications of the Vocational Education Act of 1963.

561 Organization and Operation of Vocational Programs 2 credits
A study of the purposes, objectives and philosophy of vocational office and distributive education including the principles of establishing and operating formal instructional programs with the actual distributive and office practice.
562 Coordination Techniques
A study of the background and development of effective coordination techniques; the need for high school and post high school programs; school and community relations. Consideration will be given to selection and placement of trainees, development of training stations, advisory committees and potential opportunities for program growth. Prerequisite: Business Education 461-561 or consent of instructor.

600 Individual Studies
An opportunity for a student to explore more deeply a specific field of study. The student and adviser will decide upon a specific field, and with the consent of the professor the student may take 1-2 credits of work. Not more than 4 credits can count within the 30 credits for the master’s degree. If the study is not completed by the end of the term, a grade of "P" may be given pending completion. Completion must occur within a year after the end of the term.

610 Improvement in Instruction of Skill Subjects
A study of the teaching of skill subjects with the purpose of improving the end product, the time involved in the learning, and the attitudes of learners and teachers. The psychological aspect of learning skills, as well as varied methods, devices and findings of pertinent research will be examined.

611 Improvement of Instruction in Accounting and Basic Business Education
A study of the objectives, instructional materials available, teaching techniques and testing procedures reported in current literature and recent research.

621 Trends in Business Teaching — Secretarial
A course designed to improve instruction through an evaluation of pertinent research and current literature; analysis of course materials, objectives, planning, evaluate devices, and management of the classroom.

622 Trends in Business Teaching — Basic Business and Accounting
A course designed to improve instruction through analysis of current objectives, new materials, revised methods, and accepted evaluation techniques. Includes a review of research and current literature. Prerequisite: One year of teaching experience.
623 Internship 3-6 credits
A course designed to be undertaken by qualified business teachers and prospective teachers through participation in a work-study program in certain business offices. This course is designed to correlate classroom training and experience with office experience and standards.

624 Current Problems in Business Education 1-3 credits
A study of the problems currently confronting the supervisor, teacher and student of business education.

625 Occupational Information and Vocational Guidance in Business Education 3 credits
Guidance procedures particularly appropriate for use with secondary and vocational school business education students. Specific study of problems encountered by high school and vocational school business teachers such as occupational information, job analysis, interviewing techniques, employment and training opportunities, placement, follow-up, and psychological testing. For experienced business teachers only.

626 Principles of Stenographic Concepts 2-3 credits
A course designed to develop an understanding of the Stenograph machine as a medium for direct computer input. Theory and use of "touch shorthand." It is presumed that all participating in this course will have a knowledge of skill building as presented in undergraduate courses.

627 Administration and Supervision of Business Education 3 credits
Administration and supervisory problems of business education programs in secondary and post-secondary schools. Topics include local, state and federal programs; financial support; physical layout, equipment and furniture; training, selection, assignment and evaluation of teachers; curriculum development; public relations and publicity.

631 Machine Analysis and Management 2 credits
A panoramic view of machines likely to be used by secondary school graduates in business offices. An opportunity for business teachers in secondary schools to use effectively the machinery found in up-to-date offices. A study of the administrative procedures, curriculum problems, machine operation, standards of performance, and principles for setting up a machine's laboratory.
670 Introduction to School Business Management 2-3 credits
A course designed to acquaint the student with the responsibilities of the school business administrator in the school system.

672 School Fund Accounting 2-3 credits
Designed for school business administrators or students aspiring to such positions. Organized with emphasis on the Uniform Financial Accounting System for Wisconsin School Districts. Local options in accounting systems.

674 School Plant Planning 2-3 credits
A study of school plant needs of the local district: school building survey, site selection, estimating enrollments, economy, modernization of old school buildings, and functional planning of various areas of the school building.

698a Shorthand Workshop 1 credit
To provide teachers of shorthand with an understanding of recent developments, experimental approaches, and the application of research to their teaching.

698b Typewriting Workshop 1 credit
To provide business teachers with an understanding of recent developments, experimental approaches, and the application of research to their teaching in typewriting.

698c Workshop in Office Practice 2 credits
This workshop will be concerned with the planning and scheduling of classes in duplicating, voice transcription, latest office machines and business filing practices. Procedures will include demonstrations, applications, lectures, and study and specification of new teaching techniques in Business Education.

698d Workshop for School Business Officials 1 credit
This workshop is planned to benefit all who are responsible for school business affairs whatever their official title. The workshop is designed primarily to discuss problems, find solutions, and apply them to the local level.

699 Thesis 1-6 credits
If a student elects a thesis instead of a seminar paper, a total of not more than six credits may be given for work on a thesis throughout the sessions in which the thesis is being written. Credit during a given session to be arranged with major professor and paper adviser.
Accounting Systems and Procedures  
A study of the significant developments in accounting procedures on organizational patterns and business practices and their effect on the clerical labor force; techniques and procedures by which information is gathered and made available for processing in accounting; and data processing in accounting procedures. This course is designed primarily for the high school teacher of bookkeeping.

Office Communications, Systems, and Procedures  
The modern office as the center of communications for the business enterprise. Exploration of worker competencies necessary for employment in the office of today. Designed for business teachers in secondary and vocational schools who are concerned with preparing students for office occupations.

Basic Business Concepts  
A course designed to better interpret economics of our economy and consumption through an understanding of economic and consumer principles. An opportunity to understand the most pertinent information relating to the history, importance, measurement and process of the growth of our economy as they relate to national goals and future welfare. A second objective is to understand the principles of producing and selling goods and services. A third objective will be to utilize economic and consumer principles for teaching in the secondary schools.

History and Social Studies Area  
GEOGRAPHY

Physiography of North America  
A study of the structure, development, and interpretation of the land-forms in each of the physiography regions of the United States, Canada, and Mexico.

Political Geography  
A study of the variation of political phenomena from place to place in relation to variations in physical and cultural environments.

Meteorology and Climate  
A study of the atmosphere with considerable emphasis on elements of weather, weather maps, and forecasting, as well as the distribution of climate in the world.
<table>
<thead>
<tr>
<th>554</th>
<th>Cartography</th>
<th>3 credits</th>
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<td></td>
<td>This is basically a laboratory course concerned with the drafting of maps, utilizing several basic techniques with modern equipment. Other considerations will include the history of mapmaking, public and private mapping agencies and map interpretation.</td>
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<tr>
<th>560</th>
<th>Urban Geography</th>
<th>3 credits</th>
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<tbody>
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<td></td>
<td>A study of the locations, size, spacing, types, and functions of urban settlements followed by consideration of the elements of a city, their inter-relations and changes.</td>
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<tr>
<th>565</th>
<th>Air Photo Interpretation</th>
<th>3 credits</th>
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<tbody>
<tr>
<td></td>
<td>Theory and procedures in use of aerial photos for mapping, planning, identifying, and classifying information obtainable from aerial photos. Actual preparation of maps on land use changes, industrial identification and topographic plotting will be stressed.</td>
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<thead>
<tr>
<th>645</th>
<th>Advanced Cartography (Experimental)</th>
<th>3 credits</th>
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<tbody>
<tr>
<td></td>
<td>Application of cartographic methods to field of geography. Mapping of quantitative data related to population studies, regional analysis, measures of distribution.</td>
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<thead>
<tr>
<th>661</th>
<th>Anglo America</th>
<th>3 credits</th>
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<tr>
<td></td>
<td>A study of Anglo America with emphasis on a systematic approach. Regions will be selected for microgeographic studies. Reading from many sources will be stressed.</td>
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<tr>
<th>662</th>
<th>Western Europe</th>
<th>3 credits</th>
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<td>An advanced lecture and research course in the regionalization of northern, western, central and southern Europe, emphasizing those physical or cultural factors which give unity to places.</td>
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<tr>
<th>663</th>
<th>Geography of Latin America</th>
<th>3 credits</th>
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<td>An analysis of the natural environment, cultural patterns, resource development, and geographic patterns of Central and South America.</td>
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<tr>
<th>664</th>
<th>East and South Asia</th>
<th>3 credits</th>
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<td>This course will emphasize the present and potential world importance of the countries and regions in relation to their respective physical basis, site and situation, population, and cultural technological attainment.</td>
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666  Geography of Sub-Saharan Africa  3 credits
A thematic geographical analysis focusing on the major regions of Africa, south of the Sahara. Emphasis will be placed on the particular problems and potentials of development within the selected regions.

667  Australia and Oceania  3 credits
Australia and Oceania: Treatment of the geography of the Pacific Realm including New Zealand and Australia. The number, location, distribution, physical characteristics, and history of the islands and their inhabitants is considered in relation to the rest of the world.

668  Geography of the Soviet Union  3 credits
Soviet Northwest and the Volga, the Ukraine, the Urals, Transcucucus area, Central Asia, Soviet Siberia.

669  Southwest Asia and North Africa  3 credits
Geography of Southwest Asia and North Africa: a study of the land and people of this part of the world concerning the validity of it as an arid region and cultural region.

690  History and Nature of Geography  2 credits
A combination lecture and seminar course related to the development of geographic thought. The courses will include the compilation of biography of noted geographers.

695  Population Geography  3 credits
A study of the patterns of the world population in relation to physical and cultural phenomena, and treatment of dynamics and composition of populations as related to their support bases.

698  Special Studies in Geography  2-4 credits
A student may elect to work in Special Studies for two credits in a given semester. This course may be repeated once. Written, oral and cartographic proof of accomplishment will be required.

699  Geography Thesis  2-6 credits
Up to six credits in geography may be earned by writing an acceptable thesis as a partial fulfillment of the requirements for the Master of Science degree. Prerequisite: Consent of adviser and chairman of the department.

781  Geography of the Far East  3 credits
A study of the physical and economic geography of the Far East.
504 History of Economic Thought  2 credits
Exposition of the development of economic ideas from the Ancient World to Lord Keynes, their historical backgrounds, and biographies of prominent economists. Prerequisite: Economics 211, 212.

511 Intermediate Economics Analysis I  3 credits
Price and modern microeconomic theory; pricing of products and factors of production under different market structures; modern approaches to theories of consumption and production; general equilibrium theory. Prerequisites: Economics 211, 212.

512 Intermediate Economic Analysis II  3 credits
Income and modern macroeconomic theory; general aggregative systems; national income determination theory; composition and measurement of the national income; analysis of income generation; government policy. Prerequisite: Economics 211, 212.

536 Regional Economics  3 credits
Theory of regional analysis, problems of regional research such as location of industry and regional resources. Prerequisites: Economics 211 and 212.

559 Comparative Economic Systems  3 credits
A study of different types of economic organizations: capitalistic, socialist, communist; some of their numerous varieties: Fascist Italy, Nazi Germany, Welfare States, Communist China, Titoist Yugoslavia. Special emphasis on the economy of the Soviet Union. Prerequisites: Economics 211.

699 Thesis  1-6 credits
Original research supervised by an adviser. A committee of three, including the adviser, will evaluate the acceptability of the thesis and number of credits allowable. Adviser and other committee members will be appointed by department chairmen after consultation with student. A total of from 3 to 6 credits is authorized. Prerequisite: Graduate standing and 28 credits in undergraduate and graduate economics courses. Some of these may be taken concurrently with approval of adviser.
Current Economic Problems 3 credits
An examination of the basic economic issues and goals, including economic growth, international economic policy problems, monetary and fiscal policy, wage and inflation issues, problems of competition and monopoly, and relations of government and free enterprise. Prerequisite: Economics 211 and graduate standing.

HISTORY

Problems in American History 2-3 credits
New and conflicting view points on selected topics including the causes of the American Revolution, American Imperialism, Versailles, World War II, Yalta, etc. Prerequisite: Undergraduate major or minor in history or social studies or consent of the instructor.

Problems in European History 3 credits
A study in social, cultural and intellectual history with emphasis on major trends and problems, research and interpretation in European studies. The rise of science and the enlightenment, revolutionary movements of the seventeenth to the twentieth centuries, the emergence of new ideologies, Totalitarianism, and Internationalism, the variant patterns of national development.

Recent American History 3 credits
The economic, political and social development of the twentieth century.

Individual Studies 1-2 credits
Projects may be completed under the conditions explained in Business Education 600.

American Intellectual and Cultural History 3 credits
A study of American intellectual life from the colonial period to the present in relation to politics, economic and social development.

Greek Civilization 2-3 credits
A brief historical account of the growth of Greek Civilization, with more intensive coverage of the Greek contribution to political thought and practice, drama, philosophy, and art. Prerequisite: An undergraduate history or social studies major or minor, or consent of instructor.
652 Roman Civilization 2-3 credits
A brief survey of the course of Roman history, with special attention given to the particular Roman contribution to government, administration, law, engineering, literature, philosophy, religion, and art. Prerequisites: An undergraduate history or social studies major or minor, or consent of instructor.

655 The Renaissance 2-3 credits
Renaissance historiography, economic, political and cultural developments of the Italian and Northern Renaissance. Religion in the Renaissance.

659 Pro-Seminar in Far Eastern History 2-3 credits
Study of the natures of traditional East Asian governments and economics at the beginning of the nineteenth century, and analysis of changes in the past hundred and fifty years with special emphasis on the resistance of native "autocratic traditions," and the conditions under which Western technology, institutions, and ideas are fitted into the native economic, political and social configurations.

672 Russia and the Near East in Modern Times 3 credits
A study, using proseminar methods, of the importance of Russia and the Near East in modern times with special reference to such problems as political, social and economic development; influence upon western civilization and culture; periods of expansion and conquest; religious, aesthetic, and philosophic contributions and history, governmental and constitutional development.

690, 691 Seminar in Twentieth Century America 3 credits
A graduate seminar with concentration on specific studies within selected areas of the twentieth century. An evaluation of historical evidences will be stressed and conflicting interpretations of events will be evaluated. In alternate years different phases of the course will be emphasized.

699 Thesis
Credit by arrangement.

721 American Historians 3 credits
A study of theory and methods in the writing of American history. Special attention is given to the purpose, interpretations, leading ideas and works of selected leading American historians.
736 The Reformation 3 credits
A study of (1) the sixteenth century origins of the Protestant churches and of (2) the reforms in the Catholic Church at that time. The course takes into account the political, economic, social and intellectual factors affecting religious developments. Prerequisite: Undergraduate major or minor in history, or group social studies major, or consent of the instructor.

POLITICAL SCIENCE

512 Contemporary Political Ideas 3 credits
The major political idea systems of today's world will be described and analyzed. The following movements and ideas will be treated: democracy, capitalism, socialism, anarchism, communism, elitism and nationalism.

552 The "Isms": Democracy, Fascism, Socialism, Communism 3 credits
To acquaint students with those systems of political thought and their diverse applications that have been dominant in our century.

553 Government and Politics of the Communist World 3 credits
A study of the political structures, institutions and processes of the nations of the Communist world. This course emphasizes the comparative study of Soviet, Chinese, Yugoslav and Polish types of communism.

756 International Organization 3 credits
To acquaint the student with the objectives of international organizations for maintaining international peace and security. Three aspects are considered: peaceful settlement of disputes, regulation of armament, and enforcement measures.

SOCIOLOGY

554 History of Social Thought 3 credits
The main currents of social thought from early civilization to the present.

555 Sociology of the Family 3 credits
A sociological analysis of the family, its historical development of structure and function. The contemporary aspects of the family in a changing cultural milieu.
**Language, Literature and Speech**

**Area Specialized Courses**

### ENGLISH

**600 Individual Studies**
Projects may be completed under the conditions explained in Business Education 600.

**699 Thesis**
Credit by arrangement.

**771 Advanced Studies in Inter-Group Relations**
Advanced studies in aspects of social interaction as it relates to social groups. Attention to contemporary situations with emphases on relationships, status, leadership, social power bureaucracy and both formal and informal organization. Prerequisite: Nine credits in Sociology or consent of instructor.

**772 Theories of Society**
A critical analysis of elements of systematic theories looking toward the functional application of theory to contemporary research and social systems. Prerequisite: Nine credits in Sociology or consent of instructor.

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**551 Chaucer**
The language and art of the greatest Middle English poet as he reflects the culture of his time.

**566 History of Literary Criticism**
An examination and comparison of the major works of criticism from Aristotle to Eliot. Prerequisite: Eighteen credits in literature or consent of the instructor.

**600 Individual Studies**
Projects may be completed under the conditions explained in Business 600.

**610 Structure of English IV: Problems in Grammatical Analysis**
(1) To give the student an opportunity to do advanced work on a topic applicable to teaching; (2) To acquaint the student with problems and possibilities in the linguistic analysis of English (Including English literature); (3) To give the student a chance to develop methods or theories of grammatical analysis. Prerequisite: SE, I-III, or the equivalent, or permission of the instructor.
626 Modern Grammatical Theory  3 credits
The topics to be taken up will be Structural Grammar, Tog-
memic Grammar, Transformational Grammar, and Statification-
al Grammar. The course will emphasize theory, not practical
application of theory. Prerequisite: English 351. English 373 is
desirable but not necessary.

645 Twentieth Century Poetry  3 credits
Reading and discussion of the work of seven modern poets:
Wallace Stevens, W. C. Williams, Ezra Pound, J. C. Ransom,

662 Tudor Poetry and Prose  3 credits
The course will examine representative non-dramatic works
of Tudor England in the context of the literary and philosophi-
cal assumptions of the period. Organization of the material will
emphasize dominant types and forms, as pastoral poetry, com-
paint and satire, the sonnet, Ovidian poetry, prose fiction, and
literary criticism. The last portion of the course will be given
over to an intensive study of Edmund Spencer's Faerie
Queene.

670 Seminar in English  2 credits
A careful reading of a major British or American writer of both
intrinsic and historical importance. The selection (e.g., Spen-
cer, Joyce, Frost, Faulkner) will be announced well in advance
of registration.

690 Bibliography  2 credits
To acquaint graduate students with the basic tools and meth-
ods of research.

698 Workshop in Creative Writing  3 credits
A course designed especially for the serious writer of fiction,
verse, or literary criticism. Its aim will be to help the student
learn something about the techniques necessary for the artis-
tic embodiment of his ideas, to help him judge the significance
of those ideas, and to enlarge his critical abilities in general.
A writer who has achieved national distinction will be brought
in to assist in the course. Prerequisites: Instructor's permis-
sion.
698 Workshop in the Arts of Speaking and Writing 1 credit
A one week graduate workshop for teachers of language arts and English to review intensively the basic principles of teaching, speaking and writing. The workshop will focus attention upon an analysis of the factors involved in the growth of students in the abilities of speaking and writing. These factors will be organized into two sequential growth curriculums: one in the art of speaking and one in the art of writing. Accompanying these outlines will be a considerable body of detailed materials providing content and method for effective classroom instruction, practice of skills and examination of results. The final outcome of this workshop should be a group of leading teachers able to set up in their own school systems new and vital programs in the arts of speaking and writing.

699 Thesis
Credit by arrangement.

725 Rhetoric of Written Communication 3 credits
Observation of and practice in composition. Some time is devoted to standards and judgment of high school themes, but most to the student's own writing.

746 Studies in American Romanticism 3 credits
Intensive reading of representative works by Hawthorne, Melville, Emerson, Thoreau and Whitman.

747 American Novelists, I 3 credits
A study of selected novels of Cooper, Hawthorne, Melville, Twain, Howells, James and Crane.

748 American Novelists, II 3 credits
An extensive reading in the novels of Norris, Dreiser, Wharton, and others including Faulkner.

749 Modern Literature 3 credits
A study of selected poems, novels, plays and short stories of significant twentieth century writers from Yeats, Joyce, and Shaw through Frost, O'Neill and Hemingway.

750 The English Novel 3 credits
An extensive study of the development of the genre from Defoe through the eighteenth and nineteenth centuries to Hardy.

751 Studies in American Realism 3 credits
A close examination of American realism through intensive reading of Clemens, Howells and James.
752  Milton       3 credits
An intensive study of Milton, the emphasis determined by the
experience of the class: e.g., Christian humanism, genre, biogra-
phy, intellectual traditions of the Renaissance.

761  Shakespeare  3 credits
Careful reading of about six plays; some observation of the
most useful textual, historical and structural criticism.

799  Seminar in Victorian Literature  3 credits
Individual studies in the dominant ideas and methods of repre-
sentative Victorian poetry, novels, essays and dramas, seen
within their cultural contexts.

SPEECH AND THEATER

501  Directing Debate Activities  3 credits
Specific information for prospective teachers who may direct
high school debate. The course is open both to speech
majors and others interested in debate. Prerequisite: Experi-
ence in debate or direction of debate or consent of instructor.

531  Communication Theories  3 credits
Theoretical models of communication emphasizing oral com-
munication. Designed for the Speech major. Familiarity with
the various theoretical approaches to the study of oral lan-
guage by speech and other disciplines.

556  American Theater History  3 credits
To trace the development of the theater in America, its impact
on and its reflection of cultural, political, economical, and so-
cial movements in the United States.

557  Classical Rhetoric  3 credits
A study of those theories of public speaking developed by the
ancient Greek and Roman thinkers, particularly Plato, Aris-
totle, Cicero and Quintilian. Prerequisite: Speech 141.

558  American Public Address  3 credits
A view of the principles of speech criticism. Studies in Ameri-
can public address since 1850, including Lincoln, Bryan,
T. Roosevelt, Wilson, F. D. Roosevelt, John F. Kennedy and
their contemporaries. Prerequisite: Speech 141 and 153 or 457
or graduate standing and consent of instructor.
567 Neo-Classical Rhetoric 3 credits
A study of the theories of public speaking developed in the late Roman Empire and the Medieval period with emphasis on such persons as Seneca, St. Augustine, Alcuin, Thomas, Aquinas and others.

600 Individual Studies 1-2 credits
Projects may be completed under the conditions explained in Business 600.

653 Advanced Public Speaking 3 credits
To supplement the theoretical study of speech by presenting an opportunity for advanced students to prepare and deliver speeches.

664 Speech for Exceptional Children 3 credits
To provide the student with an understanding of theories and principles concerning the diagnosis and management of voice and articulation disorders. To acquaint the student with the research being done in the areas of voice and articulation disorders.

698 Workshop in the Arts of Speaking and Writing 1 credit
Refer to English 698.

699 Thesis
Credit by arrangement.

776 Speech in the Elementary School 3 credits
Consideration of techniques useful in speech improvement program in the elementary school: oral reading, story telling, group reading, choral speaking, creative dramatics, puppetry, speech making, discussion, listening, assembly programs.

777 Presentational Problems of Oral Interpretation 2 credits
Designed to assist the elementary or secondary teacher in improving his own skills in reading aloud. A study of the techniques useful in presenting various forms of literature.

791 Contemporary Drama 3 credits
The function of the theater as a social force in the twentieth century. Emphasis on form and content of the drama in the modern theater with consideration of motion pictures and television.
Bacteriology

Prerequisites: At least ten hours of biological sciences, part of which must be from the general field of botany and part from zoology. In addition, chemistry through and including Organic Chemistry will prove to be extremely valuable.

Genetics

To present a well rounded view of modern genetics. Emphasizes basic principles; materials, and techniques are used that will permit application and give understanding to the present problems of genetics. Prerequisite: Biology 141-142, Chemistry 141.

Endocrinology

A study of the production, secretion and mechanism of action of hormones, the hormonal regulation of metabolism, growth and reproduction, and the reciprocal interrelationship of the nervous and endocrine systems in animals. Prerequisite: Biology 142.

Plant Anatomy

A study of the internal structure of vascular plants, with emphasis on seed plants, including cellular, tissue, and organ levels of organization, principles of morphogenesis, comparative anatomy and evolution, ecological correlations and economic products. Basic microtechniques will be introduced. Prerequisite: Biology 141 and a course in vascular plant morphology or permission of the instructor.

Plant Physiology

Protoplasm, translocation, plant metabolism, chemosynthesis, plant respiration, plant growth and reproductive growth. Prerequisite: Biology 141, either Chemistry or Physics 141-142. Preferably both.

Invertebrate Zoology

A comprehensive study of the structure, life cycles and importance of the major groups of vertebrates.

Entomology

This course includes a study of the classification, identification and life cycles of insects. Insects of economic importance will be considered. A collection of insects will be required. Prerequisite: Biology 142 or equivalent.
553 Animal Histology  4 credits
Animal tissues, the minute structure of normal animal tissue, and identification of tissues. Human slide preparations used. Includes two lectures and two two-hour laboratories per week. Prerequisite: Biology 142 or equivalent. Biology 253 and 254 strongly recommended.

554 Vertebrate Field Biology  4 credits
A study of the classification, distribution, ecology, life history, field techniques and literature survey of the vertebrates. Special emphasis is given the vertebrates of Wisconsin. Prerequisite: Biology 141-142 or equivalent required; Biology 253-254 recommended.

555 Parasitology  3 credits
The classification, identification, life cycles and habits of protozoan, helminthic and arthropod parasites of men and domestic animals. Prerequisites: Biology 141-142, 451-551 or equivalents.

556 Radiation Biology  4 credits
An understanding of radion biology as a field of scientific endeavor, potential hazards of fallout and other sources of radiation. Various kinds and effects of radiation.

560 Introductory Mycology  3 credits
A comprehensive study of all fungal phyle emphasizing taxonomy, morphology, phylogeny and physiology. Economic uses of fungi in food production, fungal deterioration and industrial application. Prerequisite: Biology 357 or equivalent.

600 Individual Studies  1-2 credits
Projects may be completed under the conditions explained in Business Education 600.

630 Human Protozoology  2 credits
This course is designed primarily to acquaint the student with the morphology, physiology, life history, diagnosis and prevention of protozoan diseases of man. Host resistance, parasitic carriers, reservoirs and control are also considered. Two one-hour lectures and one two-hour laboratory period per week.

699 Thesis
Credit by arrangement. A total of from three to six credits is authorized.

721 Ecological Biology  4 credits
Interrelationship between plants and animals in respect to their environments, including community organization, behav-
ior, and field recognition of flora and fauna. Two hours of lecture and two two-hour laboratories plus several extended field trips. Prerequisites: Biology 141-142 or equivalent. Biology 353-454 recommended.

722 **Plant Physiology** 3 credits
The general physiology of plants, methods of demonstrating and determining rates of plant processes: nutrition; adjustment to environment; factors influencing growth and development. Prerequisites: one year of biology, a year of college chemistry, and an elementary knowledge of physics. The course will consist of lectures, demonstrations, laboratory work, and one field trip to the University of Minnesota Agricultural Campus Plant Physiology Laboratories to observe apparatus and techniques used in research.

723 **Field Zoology** 3 credits
Field trips; observing habitats and collecting local animals; identification and study of collected species. Prerequisite: One year of biology.

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**CHEMISTRY**

551 **Physical Chemistry, an Introduction** 3-4 credits
An elementary introduction requiring no calculus. For secondary teachers, majors and minors from other departments, pre-medical and other pre-professional students other than chemical pre-professional. Three one-hour lectures per week for three credits. Another credit can be earned for laboratory work when this is offered by the department. Prerequisite: A year of general chemistry, one semester of organic chemistry and one of analytical chemistry.

554 **History of Chemistry** 2 credits
Lectures and reports tracing the development of the science of chemistry and its relationship to some contemporary history in other areas. Two one-hour lectures per week.

555 **Advanced Organic Chemistry** 3 credits
An extension of the basic course covering selected topics from the theories and chemistry of organic structures. Prerequisite: A year's course in general organic chemistry.

751 **Intermediate Chemistry I** 3 credits
Concerned with atomic structure; oxidation-reduction theory; chemical bonding; stoichiometry. Prerequisite: One year college chemistry.
MATHEMATICS

552 Modern Algebra  3 credits
An introduction to such topics as sets, groups, rings, ideals, integral domains and fields, together with an algebraic development of the rational, real and complex number fields. Prerequisite: Mathematics 255.

553 Linear Algebra  3 credits
Polynomials, groups, vectors and vector spaces, systems of linear equations, determinants, linear transformations and matrices. Prerequisite: Mathematics 255.

767 Modern Geometry  3 credits
A study of the foundations of geometry from the axiomatic point of view. Synthetic and analytic projective geometry, Affine geometry, Euclidean plane geometry and the various non-Euclidean geometries and their relation to each other are considered. Prerequisite: Mathematics 253.

PHYSICS

552 Atomic Physics  4 credits
A study of the atomic structure of matter giving special consideration to its electrical properties periodic system, radiation, x-rays, atomic spectra, Pauli Principle, molecular structure, theory of relativity, etc. Prerequisite: Physics 350, Calculus 254 or concurrent registration.

553 Nuclear Physics  4 credits
A study of the known properties of the nucleus giving special emphasis to isotopes, nuclear structure, natural and artificial radioactivity, x-rays, gamma rays, alpha decay, beta decay, gamma decay induced nuclear transformation, nuclear fission, reactors, etc. Prerequisite: Physics 452-552 and Calculus 254 or concurrent enrollment.

Music

APPLIED MUSIC

656 Advanced Conducting  2 credits
Advanced study and analysis of conducting techniques. Score reading and interpretation of masterpieces from standard instrumental and choral repertoire.

667 Advanced Instrumental Techniques (Strings)  2 credits
An advanced course in string techniques. Prerequisite: Music 367 or equivalent.
668 Advanced Instrumental Techniques (Woodwind, Brass, Percussion) 1 credit
An advanced course in the theory and practice of playing the woodwind, brass and percussion. Prerequisite: Music 367 or the equivalent. May be repeated one semester for credit.

677 Advanced Voice Class 1 credit
Group instruction in singing techniques with emphasis on posture, breathing, diction and tone production for students whose major performance is not voice. May be repeated one semester for credit.

680, 681, 682 Artists Course in Applied Music 1-2 credits

687 Advanced Piano Class 1 credit
Group instruction in piano technique, sight-reading and accompaniment for students whose major performance is not piano. May be repeated once for credit. Prerequisite: Music 280 or equivalent.

MUSIC LITERATURE AND HISTORY

641 Music of the Baroque and Classical Periods 2 credits
A study of the vocal and instrumental literature of the periods extending from 1600 to 1825. Emphasis is placed upon characteristics of style as found in the works of representative composers of the periods.

642 Music of the Nineteenth and Twentieth Centuries 2 credits
A study of the vocal and instrumental literature of the periods extending from 1825 to the present. Emphasis is placed upon characteristics of style as found in the works of representative composers of the periods.

MUSIC THEORY

551 Sixteenth Century Counterpoint 2 credits
A study of the sixteenth century style of contrapuntal writing, especially the works of Lassus and Palestrina. Emphasis on developing a technique for writing polyphonic music in the style of these composers. Prerequisite: Music 252.

552 Eighteenth Century Counterpoint 2 credits
A study of the eighteenth century style of contrapuntal writing, especially the works of J. S. Bach. Emphasis on developing a technique for writing polyphonic music in the style of Bach. Prerequisite: Music 252.
555 Form and Analysis  2 credits
A study of the structure of music beginning with the motive and continuing through the larger forms such as sonata-allegro, variation, and rondo. Accomplished through analysis of standard music literature. Prerequisite: Music 252.

651 Training in Advanced Musicianship  3 credits
A unified approach to the fundamentals of musicianship integrating sightsinging, ear-training, written harmonization, keyboard harmony, and analysis. Dictation of melodic, harmonic, rhythmic, and contrapuntal materials. Prerequisite: Music 252 and 352 or equivalent.

653 Advanced Arranging  2-3 credits
Techniques in scoring both small and large vocal and instrumental ensembles. Students enrolling for three credits are required to complete an additional special project in arranging, or to present a written report of research in the area of instrumentation approved in advance by the instructor. Prerequisite: Music 443 or equivalent.

655 Composition  2-3 credits
Original work in various forms and idioms. Students enrolling for three credits are required to submit a composition in one of the more extended forms. Prerequisite: Music 252, 452 and the consent of the instructor.

**MUSIC EDUCATION**

636 Problems in Teaching and Supervising General Music  2-3 credits
A detailed study of the problems involved in teaching and supervising the general music program in the elementary, junior high and senior high school. Special attention is given to problems of objective, organization, operation, materials and procedures.

637 Problems in Teaching Instrumental Music  2-3 credits
A detailed study of the problems involved in teaching instrumental music in the elementary, junior high and senior high schools. Special attention is given to problems of organization, operation, materials and procedures encountered in the program.
638 Problems in Teaching Choral Music 2-3 credits
A detailed study of the problems involved in teaching choral music in the elementary, junior high and senior high schools. Special attention is given to problems of organization, operation, procedure, and materials.

PSYCHOLOGY

541 Introduction to Statistical Methods 3 credits
Basic concepts and techniques in the analysis and interpretation of research data. Descriptive statistics such as frequency distribution, central tendency, variability. Introduction to statistical inference, normal-curve sampling theory, simple t-tests. Introduction to correlation. Prerequisite: A basic psychology course. Laboratory work is required.

554 Abnormal Psychology 3 credits
An introduction to the study of behavior pathology with particular emphasis on the inception, development and maintenance of various possible modes of adjustment, both normal and deviant.

555 Group Dynamics 3 credits
The purpose of this course is to study the interaction within small groups. Analysis will be in terms of group structures and group processes. Emphasis will be placed on the relationship between the individual member and the group. Prerequisite: Psychology 211, 355, Soc. 211.

591 Systems of Psychology 3 credits
An overview of major psychological theories and theoretical issues, with historical perspective. Designed to assist the advance student in organizing and integrating his knowledge of factual content in psychology and to complete a strong foundation for graduate study. Lectures, discussion, oral reports, term papers.

607 Seminar in Child Psychology 3 credits
A review of historical trends and recent developments in theory and research and their relation to applied child psychology.

608 Theory and Problems of Adolescent Development 3 credits
Approaches to the study of adolescence, research methods, maturation, identity, problems of adjustment, evaluation and treatment.
611 Psychology Pro-seminar I  3 credits
An intensive review of psychology as a social science. Topics include psychometrics, learning, development, personality, social, abnormal, counseling, and clinical psychology. Sections of the course may be passed separately by prior examination. Prerequisite: Permission of Psychology Department.

615 Research Design I  3 credits
The course will include a careful study of some of the more frequently used methods for evaluating research. The content will include a review of chi-squares, t-tests, and correlation, trend analysis, analysis of variance and covariance, and other methods will be studied. Prerequisite: One course in statistics.

624 Human Learning  3 credits
Emphasis on the variables affecting the acquisition of verbal processes and concepts. The role of organizational factors is stressed. Classical S-R and mediational paradigms are evaluated in relation to transfer effects. Methods in assessing long term and short term extension as well as theory concerning these processes are described. Prerequisites: Psychology 611 or 323 or equivalent with consent of instructor.

644 Theories of Personality  3 credits
A critical analysis of the major personality theories. Psychoanalytic, socially oriented, and self-actualization theories will be covered. Prerequisites: Psychology 611 (Pro-seminar I.)

645 Psychopathology  3 credits
Review and analysis of research literature and theory in the area of behavior deviation. Prerequisites: Psychology 445 or equivalent.

693 Assessment of Personality  3 credits
Basic procedures in assessing personality structure and dynamics including the diagnostic interview, case history, non-projective and projective tests. Supervised evaluation of these techniques will be provided. Prerequisites: Education 723, Psychology 611.

694 The Theories of Psychotherapy and Counseling  3 credits
An intensive study of the major principles and approaches to psychological theory and counseling. Designed as a foundation course in preparation for practicum training in psychological therapy. Prerequisites: Psychology 615, Psychology 645.
695 Interview and Counseling Techniques 3 credits
A review of the literature on interview techniques as a method of assessment and as a method of helping. Students will observe and discuss demonstrations conducted by faculty members. In addition, students will conduct, tape and analyze interviews themselves. Prerequisites: Psychology Proseminar or consent of instructor.

696 Supervised Clinical Practicum I 3 credits
Supervised training in school related settings relating theoretical understanding of personality and case handling and consultation through a variety of psychological and educational assessment and treatment procedures. Prerequisites: Psychology 611, 645, 693.

697 Supervised Clinical Practicum II 3 credits
A continuation of Supervised Clinical Practicum ("Supervised training in a school related settings relating theoretical understanding of personality and case handling and consultation through a variety of psychological and educational assessment and treatment procedures.") With more use of diagnostic and therapeutic techniques of increased complexity. Prerequisites: Psychology 611, 645, 693, 697.

Supporting Courses in Which a Major In Not Currently Being Offered

LIBRARY SCIENCE

620 Library Orientation for Graduate Students Non-credit
The course consists of a series of lectures and demonstrations to acquaint the graduate student with library, the card catalog, journal indexes, abstracts, bibliographic forms and other reference tools.

ART

621 Trends in Art Activities 3 credits
A course designed to acquaint the teacher with recent trends and practices in the teaching of art. The sources of contemporary knowledge of the function and structure of art education, the child and his growth in art expression, the development of skills, and building the art curriculum will be considered during lecture-discussion sessions. A variety of materials and techniques will be explored.