



Department of Mathematical Sciences
PREPARING TO TEACH SECONDARY SCHOOL MATHEMATICS, GRADES 6-12

The most common method to qualify to be a secondary school mathematics teacher is to follow the program for a major in mathematical sciences with an emphasis in mathematics education. General education requirements, as well as required and elective mathematics courses and professional education courses, are listed in the appropriate undergraduate catalog and summarized on page 3 of this document. Recent updates of state and university requirements may not appear in catalogs, so regular contact with your advisor is highly recommended. Postgraduate students, students-at-large and graduate students may be certified whether or not they pursue a second Bachelor's degree.

Prospective secondary teachers should confer with their advisors in Mathematical Sciences by sophomore year and continue to do so each semester. Student teaching is discussed in a required meeting with the Coordinator(s) of Teacher Certification in Mathematics three semesters prior to student teaching. Each student should make a careful plan of courses to ensure all requirements for the program will be met. Students are encouraged to add courses for an endorsement in an additional area.

Guidelines for Meeting Certification Requirements

- 1) Mathematics Major The B.S. Major in Mathematical Sciences with Mathematics Education emphasis is a 75 semester hour program. *See Appendix D for General Education requirements for Initial Teacher Certification.
- 2) Second Teaching Area Endorsement A second teaching area is recommended. See an advisor for endorsement requirements or check ISBE requirements through the State of Illinois. Candidates for Illinois endorsements in other content areas must pass the ICTS Content Area Test in each endorsement area.
- 3) PSYC 102 (Introduction to Psychology) This 3 hr course, a general education elective in social sciences, should be completed before junior standing. It is a prerequisite for EPS 406.
- 4) U.S. History & U.S. Government One 3 hr course in each area should be completed in the first two years. Courses will satisfy general education requirements. (HIST 260 or 261 & POLS 100 or 150)
- 5) Social Issues Experience Documented completion of any First Aid/CPR course offered by the American Red Cross, <http://www.redcross.org/> at a hospital/community center, etc., or experience with drug abuse education or a demonstrated social issue experience in schools. If you are interested, the following courses also satisfy the requirement: KNPE 262 (First Aid & CPR), PHHE 201 (Social & Individual Patterns of Drug Use, PHHE 304 (Drug Use & Abuse), PHHE 437 (Assessment, Treatment & Prevention of Drug & Alcohol Addiction)
- 6) Multicultural Studies 3 hr course: EPFE 201, IDSP 211, TLRN 501X or LTIC 501. Each course satisfies the general education requirement for the B.S. degree.
- 7) Basic Skills Test of the Illinois Certification Testing System You must pass the Basic Skills Test before you can be formally admitted to the Mathematics Teacher Certification Program. Information, study guides & registration materials are online, <http://www.icts.nesinc.com/> Both the Mathematics Content Test & Assessment of Professional Teaching must be passed prior to student teaching.
- 8) EPS 406 (Issues in Human Development and Learning in the Middle School & High School Years) This 3 hr course should be completed during junior year so that doubling up clinical experiences is NOT necessary. Transfer students often take this in spring semester of junior year. PRQ: Jr Standing (60 hr), PSYC 102 (3 hr) & overall NIU GPA of 2.50. CRQ: ILAS 201; EPS 406 is often taken with ILAS 301.

Guidelines for Meeting Certification Requirements (continued)

10) Clinical Experiences

Students must complete 100 clock hours of clinical experiences before student teaching. Clinicals involve observation in both middle school & high school mathematics classes and classroom teaching experiences.

- For ILAS 201, ILAS 301, MATH 401 and MATH 413, students must have a completed Criminal Background Check with no record, and documentation of a current negative TB test submitted to the Coordinator of Teacher Certification in Mathematics
- ILAS 201 (1 hr; 20 clock hr) recommend sophomore year
- ILAS 301 (2 hr; 50 clock hr) recommend junior year, concurrently w/EPS 406
- MATH 401 (1 hr; 40-50 clock hr) recommend concurrently w/MATH 412 & after EPS 406.
- ILAS 201 and ILAS 301 applications may be downloaded from www.math.niu.edu under Teacher Certification, Applications.
- ILAS 201 and ILAS 301 applications are due the first Wednesday in October for Spring Semester and first Wednesday in March for the Fall Semester
- MATH 401/MATH 413 Student Teaching Applications may be downloaded from www.math.niu.edu under Applications and are initially due the First Friday of the semester immediately prior to the semester you take MATH 401.
- Approximately one week before registration, Permits to Register for ILAS 201, ILAS 301 and MATH 401 may be obtained in the Department of Mathematical Sciences, Watson 320.
- Applicants w/teaching experience in grades 6-12, as verified by an employer, may not need to complete all of the pre-student teaching clinical experiences, at the discretion of CLAS.

11) Admission to the Teacher Certification Program

- Admission requires approval by the Department of Mathematical Sciences. Application for admission is done through a conference with a Department Advisor two semesters prior to student teaching.
- Formal admission to the program is a pre-requisite to Student Teaching.
- For Department approval, students are expected to meet the criteria listed in Appendix A.

12) Student Teaching

- The Student Teaching Application must be submitted to, and tentatively approved by, the Coordinator of Teacher Certification in Mathematical Sciences two semesters prior to the semester of Student Teaching.
- The Department of Mathematical Sciences grants final permission for students to student teach in mathematics upon satisfaction of the requirements listed in Appendix B.
- All three tests required by the Illinois Certification Testing System must be passed before the beginning of student teaching.
- Senior or graduate standing is required. Student teaching (MATH 413) is offered in both Fall and Spring. See Appendix C for additional information.
- Choice of schools is generally restricted to schools in the quadrilateral bounded on the North-South by I-90 and US 30/US 34; East-West by I-294 and IL Route 2.



Secondary (6-12) Mathematics Teacher Certification Requirements
PLANNING & MEETING THESE REQUIREMENTS IS A STUDENT RESPONSIBILITY

Checklist of non-mathematics requirements (See Appendix D)

- _____ COMS 100 Fundamentals of Oral Communication (3)
- _____ ENG 103 & 104 (6) or ENG 105 (3)
- _____ PSYC 102 Introduction to Psychology (3)
- _____ U.S. History (3)
- _____ U.S. Government (3)
- _____ English literature course or LIT course (taught in English) to fulfill Humanities requirement (3)
- _____ Humanities Electives (6)
- _____ Science (courses in 2 fields; at least 2 courses in one field, including one lab course) (9)
- _____ Social Issues (First Aid/CPR Certification or approved course/experience)
- _____ Interdisciplinary Studies (usually EPFE 201) (3)
- _____ Basic Skills Test, Illinois Certification Testing System
- _____ ILAS 201 Clinical Experience; 20 clock hours (1)
- _____ EPFE 400 Foundation of Education (3)
- _____ ILAS 301 Clinical Experience; 50 clock hours (2)
- _____ EPS 406 Issues in Human Development and Learning in MS/HS (3)
- _____ TLSE 457 Systems for Integrating the Exceptional Student in the Regular Classroom (3)
- _____ **ADMISSION TO THE MATHEMATICS TEACHER CERTIFICATION PROGRAM**
- _____ ETR 440 Secondary Classroom Assessment (3)
- _____ Mathematics Content Area Test, Illinois Certification Testing System
- _____ Assessment of Professional Teaching, Illinois Certification Testing System

Checklist of mathematics, statistics, & computer science courses

- _____ MATH 229 Calculus I (4)
- _____ MATH 230 Calculus II (4)
- _____ MATH 232 Calculus III (4)
- _____ MATH 240 Linear Algebra and Applications (4)
- _____ CSCI 240 C++ (4) or CSCI 230 FORTRAN (4)
- _____ STAT 350 Introduction to Probability and Statistics (3)
- _____ MATH 353 Geometry (3)
- _____ MATH 360 Model Building in Applied Mathematics (3)
- _____ MATH 401 Clinical Experience; 40-50 clock hours (1)
- _____ MATH 410 Methods of Instruction in the Mathematics Curriculum for Middle School (3)
- _____ MATH 412 Methods of Instruction in the Mathematics Curriculum for Secondary School (3)
- _____ MATH 413 Student Teaching (12)
- _____ MATH 420 Algebra I (3)
- _____ MATH 430 Advanced Calculus I (3)

One Additional Course From:

- _____ MATH 380 Elementary Combinatorics (3)
- _____ MATH 416 Topics in Mathematics for Teachers (3)
- _____ MATH 434 Numerical Linear Algebra (3)
- _____ MATH 435 Numerical Analysis (3)
- _____ MATH 440 Elements of Complex Analysis (3)
- _____ MATH 444 Linear Programming and Network Flows (3)
- _____ MATH 450 Introduction to Topology (3)
- _____ MATH 480 Number Theory (3)

One Additional Course From:

- _____ MATH 421 Algebra II (3)
- _____ MATH 423 Linear and Multilinear Algebra (3)
- _____ MATH 431 Advanced Calculus II (3)
- _____ MATH 456 Linear Geometry (3)
- _____ STAT 470 Introduction to Probability Theory (3)
- _____ MATH 480 Number Theory (3)

SAMPLE PROGRAMS OF STUDY

Note: Many other combinations of courses are possible.

Four year program (Spring Student Teaching)

	<u>Fall Semester</u>	<u>Spring Semester</u>
Year 1	MATH 229 (4)	MATH 230 (4)
Year 2	MATH 232 (4) CSCI 240 (4) STAT 350 (3)	MATH 240 (4) MATH 360 (3) ILAS 201 (1) EPFE 400 (3)
Year 3	MATH 353 (3) MATH ELEC2 (3) EPS 406 (3) ILAS 301 (2)	MATH 410 (3) MATH 420 (3) TLSE 457 (3)
Year 4	MATH 401 (1) MATH 430 (3) MATH 412 (3)* MATH 416 (ELEC1) (3) ETR 440 (3)	MATH 413 (12)

Four and a half year program (Fall student teaching)

Year 3	MATH 240 (4) MATH 360 (3) ILAS 201 (1) CSCI 240 (4)	STAT 350 (3) MATH 420 (3) EPS 406 (3) ILAS 301 (2)
Year 4	MATH 353 (3) MATH 430 (3) EPFE 400 (3) TLSE 457 (3) MATH 410 (3)	MATH 412 (3)* MATH 416 (ELEC1) (3) MATH ELEC 2 (3) MATH 401 (1) ETR 440 (3)
Year 4.5	MATH 413 (12) **	

*Maximum of two math content courses may be taken in the semester MATH 412 is taken.

**Other courses may/will need to be taken, except in the semester of student teaching.

APPENDIX A
DEPARTMENT OF MATHEMATICAL SCIENCES POLICY
Granting, Delaying, or Denying Approval For Admission to Teacher Certification

- I. Normally, the Department of Mathematical Sciences approval will be granted to mathematics majors and/or certification candidates who, during the semester of application:

Attend a mandatory Teacher Certification Advisement Session with a designated representative of the Department of Mathematical Sciences. The session is normally held two semesters prior to the semester of student teaching. At this time, students should meet the following requirements:

- A. Have a minimum GPA of 2.25 in Mathematical Sciences courses which are available for credit toward the major and/or certification
 - B. Have a minimum GPA of 2.25 in Mathematical Sciences courses numbered above 231 available for credit toward the major and/or certification
 - C. Have a minimum overall NIU GPA of 2.50 (undergrad or post grad) or a minimum overall
 - D. At NIU, have completed: MATH 232 or MATH 240 & at least one MATH or STAT course numbered 350 or above, or have completed at NIU, two MATH or STAT courses numbered 350 or above
 - E. Have completed, or be enrolled in, courses including 70 clock hours of pre-student teaching clinical experiences
 - F. Pass the Basic Skills Test of Illinois Certification Testing System
- II. Normally, approval will be delayed for an applicant who does not satisfy IA, IB, IC or ID; delayed status will be changed to Approved status when removal of deficiencies is reported by the applicant to the Department. If an applicant's delayed status continues beyond the semester (including summer if the applicant is enrolled) succeeding the one during which a Teacher Certification Advisement Session was attended, the applicant must attend an Advising Session again before approval is granted.
- III. Approval may be granted, delayed, or denied solely on the basis of recommendations from Members of the Mathematical Sciences Faculty; final action in this case will be taken by a Faculty Committee appointed by the Department Chair.
- IV. If any course in which the grade of F was received is retaken, the most recent grade received is used in computing the GPA; if not retaken, the F is included in computing the GPA.
- V. Transfer students: Courses taken at other institutions are included in the Mathematics GPA computations.
- VI. Transfer students: For exceptional cases, I.D or I.E may need to be given special consideration.

APPENDIX B
DEPARTMENT OF MATHEMATICAL SCIENCES POLICY
Granting or Denying Permission to Student Teach in Mathematics

To be granted final permission from the Department to student teach in mathematics, it is expected that the mathematical sciences major and/or certification candidate will:

1. Have satisfactorily completed all other courses required for certification prior to student teaching.
2. Have satisfactorily completed 100 clock hours of pre-student teaching clinical experiences.
3. Have satisfactorily met requirements for GPAs & grades:
 - A. Have a minimum GPA of 2.25 in Mathematical Sciences courses available for credit toward the major and/or certification. (If a course in which the grade of F was received is retaken, the most recent grade received is used in computing the GPA)
 - B. Have a minimum GPA of 2.25 in Mathematical Sciences courses numbered above 230 available for credit toward the major and/or certification
 - C. Have a grade of C or better in at least three of the following required mathematics content courses:
 - C1. MATH 420
 - C2. MATH 430
 - C3. One Additional Course from: MATH 380, MATH 416, MATH 434, MATH 435, MATH 440, MATH 444, MATH 450, MATH 480
 - C4. One Additional Course from: MATH 421, MATH 423, MATH 431, MATH 456, STAT 470, MATH 480

Note: This policy applies to students as of Fall 2008.

Transfer students: Courses taken at other institutions are included in Math GPA computation.

4. Have a minimum NIU GPA of 2.50 for undergrads & post grads
5. Have a minimum NIU GPA of 3.00 for students-at-large or grad students
6. Pass the Mathematics Content Area Test & Assessment of Professional Teaching through the Illinois Certification Testing System before student teaching.

APPENDIX C
DEPARTMENT OF MATHEMATICAL SCIENCES POLICY
Math 401: Clinical Experience & MATH 413: Student Teaching

MATH 401 Clinical Experience

1. Permission to register for MATH 401 is contingent upon successful completion of/enrollment in 70 clock hours of pre-student teaching clinical experiences & meeting of NIU & Math GPA requirements per Appendix A.
2. Successful completion of the MATH 401 clinical component is required before student teaching begins. Completion of MATH 401 requires placement confirmation in the student teaching school.
3. If a student needs to postpone student teaching prior to its beginning, then the student withdraws from MATH 401, if he/she has not already completed it.
4. If a student engages in unprofessional conduct or is working unsatisfactorily with public school students, he/she will not be allowed to continue in MATH 401 and will automatically receive an unsatisfactory grade. In the event that a student is not allowed to complete MATH 401, written notification will be sent to student & to the school in which the student is working.
5. A written appeal of this decision may be made by the student to the chair of the Teacher Education Committee. The appeal document should include a statement giving reasons why termination of the clinical experience was inappropriate. Appeals will be processed in accordance with the appeals procedure for certification candidates in the Department of Mathematical Sciences, and copies of procedure are available in the Department Office.
6. Evaluation of the student's performance will be made through conferences between the student and the supervisor and will be conveyed when possible through written communication. A written final evaluation will be shown to the student and then placed in the student's department file.
7. Applicants with previous teaching experience at the 6-12 level, as verified by the employer, may not need to complete all the pre-student teaching clinical experiences, at the discretion of the Department.

MATH 413 Student Teaching

1. Admission to student teaching is governed by criteria in Appendix B & successful completion of MATH 401.
2. If admission to student teaching is denied after placement has occurred, written notification is sent to the school where the student teacher has been placed.
3. If a student engages in unprofessional conduct or is working unsatisfactorily with public school students, he/she will not be allowed to continue his/her student teaching experience. Such a student may petition the Department to re-enroll in student teaching in a subsequent semester.
4. Procedure for withdrawal from the student teaching experience:
 - In the event that a student is removed from the student teaching experience, written notification will be sent to the student and to the school in which the student is working.
 - A written appeal of the withdrawal may be made by the student to the chair of the Teacher Education Committee. The appeal document should include a statement giving reasons why the withdrawal was inappropriate. The appeal will be processed in accordance with the appeals procedure for certification Candidates in the Department of Mathematical Sciences. A copy of this procedure may be obtained in the Department office.
5. Evaluation of the student's performance will be made through conferences between the student, the cooperating teacher & the University Supervisor and will be conveyed to the Coordinator of Student Teaching through written communication. A written final evaluation will be shown to the student and placed in the student's NIU Career Services credentials file and in the Department file.
6. Applicants presenting required prior credit in student teaching & evidence of prior teaching experience, as verified by the employer, may not need to complete additional student teaching experience, at the discretion of the Department.

APPENDIX D
DEPARTMENT OF MATHEMATICAL SCIENCES POLICY

Additional Requirements for the Emphasis in Mathematics Education and/or Teacher Certification

All students seeking initial teacher certification in mathematics for grades 6 - 12 must complete the following general education requirements. No courses for certification should be taken as pass/fail.

1. Core Competency (9 hours)
 - (a) Oral Communication (3 hours)
 - (b) Written Communication (6 hours) [or equivalent of ENGL 105]

2. Humanities & the Arts (12 hours)
 - (a) U.S. History (3 hours)
 - (b) English course or literature course [taught in English] (3 hours)
 - (c) Other approved course work (6 hours)

3. Science (9 hours)

Course work in at least two science fields with a minimum of two courses in one science field.
Course work must include at least one science lab course.

4. Social Science (6 hours)
 - (a) U.S. Government (3 hours)
 - (b) Other approved course work (3 hours) [usually PSYC 102]

5. Social Issues Experience

Documented completion of any First Aid/CPR course offered by American Red Cross <http://www.redcross.org/> at a hospital/community center, etc., or experience with drug abuse education or an approved, documented social issue experience in schools. If you are interested in NIU coursework, the following courses also satisfy the requirement: KNPE 262 (First Aid & CPR), PHHE 201 (Social & Individual Patterns of Drug Use, PHHE 304 (Drug Use & Abuse) or PHHE 437 (Assessment, Treatment & Prevention of Drug & Alcohol Addiction)

APPENDIX E
DEPARTMENT OF MATHEMATICAL SCIENCES POLICY

Because of the Middle School Endorsement requirements issued by the Illinois State Board of Education, it is recommended, at this time, that both students-at-large and graduate students take either the undergraduate professional education courses or consult with the Coordinator of Teacher Certification in Mathematics for possible equivalent graduate level courses.