

Mathematics

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The Department of Mathematics and Computer Science offers a Bachelor of Science degree in Mathematics with two options: mathematics and secondary teaching. Within the Mathematics Option, a student may take an actuarial science concentration. Students obtaining this degree will be prepared for positions in private industry or government. Students will also be prepared to pursue an advanced degree in their area of specialization. The department also offers a minor sequence in mathematics for students majoring in other disciplines.

Completion of the Secondary Teaching Option in Mathematics qualifies students for an Initial Type 09 Illinois High School Certificate with a high school endorsement in mathematics for grades 9-12, and a middle grade endorsement in mathematics for grades 6-8. Certification requires the successful completion of the Illinois Certification Tests of Basic Skills, Mathematics, and Assessment of Professional Teaching (Secondary 6-12). The secondary teaching program is accredited by the National Council of Teachers of Mathematics (NCTM), and meets Illinois State Board of Education (ISBE) standards in mathematics education.

All entering freshmen and transfer students are required to take the university placement examination in mathematics. These students may not register for any mathematics or computer science course until they have taken the examinations. This examination is designed to place students into the appropriate mathematics course from Basic Mathematics to Calculus. Students may not use MATH 090, 095, 098, 160, or 161 toward satisfying general education mathematics or university graduation requirements. Credit will not be given for any mathematics course which is a prerequisite for a course in which a grade of C or better has already been earned.

MATHEMATICS OPTION (WITH CONCENTRATIONS IN MATHEMATICS AND ACTUARIAL SCIENCE)

General Requirements

Admission to the program is contingent upon completion of MATH 163 or MATH 171 with a grade of C or higher, cumulative grade point average of 2.0 or higher, and acceptance by the department.

The department will not accept D grades in any required major courses or required supportive courses, either as transfer credit or completed at Chicago State University.

Requirements include completion of 120 semester hours of work: 6 hours in composition; 48 hours in general education (refer to liberal arts curriculum outline) consisting of 18 hours in the humanities, including 6 hours in a single foreign language; 18 hours in the social sciences; 12 hours in the natural sciences, including at least 3 credit hours in physical science and at least 3 credit hours in biological science (one science laboratory course is required); 41 hours in Mathematics; 12 hours of supportive courses; 13 hours in electives selected with the departmental advisor's approval; and passing the examination on the state and federal constitutions.

By demonstrating proficiency, a student may be able to obtain credit for certain mathematics and computer science courses at the recommendation of the department.

Specific Requirements (Mathematics Concentration)

Required Courses

41 credit hours

MATH 163, 180, 201, 261, 262, 263, 271, 342, and 392; one of the following - MATH 308, 327, or 361; one of the following - MATH 356 or 358; one of the following - MATH 315, 318, 325, 326, 354, or 355; one additional course selected from the above or MATH 313, 329 or 345.

Required Supportive Courses

12 credit hours

Mathematics: CPTR 130 or 141; nine additional credit hours selected from accounting, biology, botany, chemistry (155 or above), computer science (130 or above), economics, physics, zoology. At least two courses must be from the same discipline.

Elective Courses

13 credit hours

13 credit hours of electives selected with the department advisor's approval. MATH 160 and 161 may not be used.

Specific Requirements (Actuarial Science Concentration)

Required Courses

41 credit hours

MATH 180, 201, 261, 262, 263, 271, 274, 313, 315, 318, 342, and 392; one of the following - MATH 308, 325, 326.

Required Supportive Courses

12 credit hours

Complete one of the following two sets of courses:

CPTR 141, ACCT 110 and 111, and FIN 266; or with consent CPTR 141, ACCT 110, FIN 266 and 368.

Elective Courses

13 credit hours

13 credit hours of electives selected with the department advisor's approval. MATH 160 and 161 may not be used.

SECONDARY TEACHING OPTION IN MATHEMATICS

To be considered for recommendation for admission to the College of Education, students must have completed Math 262 and two 300-level mathematics courses with a grade of C or higher, have completed with a grade of C or higher or concurrent registration in Math 263 and Math 342, and have passed the Illinois State Basic Skills Examination.

General Requirements

- Students are responsible for meeting the program requirements in effect at the time they officially register in a teacher education program leading to certification at Chicago State University, regardless of when they entered the university.
- Admission to the program is contingent upon good academic standing and acceptance by the department.
- Admission to the College of Education is required prior to registration in any professional education courses other than ELCF 152 and 200; PSYC 210; and S ED 301.
- A grade of C or above is required in all mathematics courses, either as transfer credit or completed at Chicago State University.
- A grade of C or above is required in all supportive courses, either as transfer credit or completed at Chicago State University.
- A grade of B or above is required in student teaching.
- A grade of C or above is required in all other professional education courses, either as transfer credit or completed at Chicago State University.

- A grade of C or above is required in MATH 201, 263, and 342 before the department will approve enrollment in MATH 363 and 375.
- A maximum of nine hours of professional education courses taken at a junior or community college can be transferred into the program.
- Professional education courses completed more than five years before admission to Chicago State University in an education program, either as transfer credit or at Chicago State University, will not be accepted.
- A grade of C or above is required in all general education courses.
- A minimum cumulative grade point average of 2.5 in all coursework required in the program, either as transfer credit or completed at Chicago State University, is required for admission to the College of Education.
- A minimum cumulative grade point average of 2.5 in the area of specialization/concentration, in professional education, and in all coursework required in the program, either as transfer credit or completed at Chicago State University, is required for student teaching and a recommendation for teacher certification.
- Courses taken at Chicago State University that are required in a teacher education program may be repeated for a higher grade no more than twice. The highest grade will be included in calculating the grade point average. Students who do not earn an acceptable grade in a required course after three attempts will be dropped from the program.
- A maximum of two professional education courses can be repeated for a higher grade. The higher grade will be included in calculating the grade point average. Students who earn an unacceptable grade in a professional education course after having repeated two other professional courses will be dropped from the program.
- Students who are not admitted to the College of Education because of a low grade point average will be allowed to reapply for admission at any time within the next 30 semester hours of attempted credit and according to the requirements for admission in effect at the time they reapply. Students who do not meet the grade point average required for admission to the College of Education after attempting an additional 30 semester hours of coursework will be dropped from the program.
- Students who are dropped from a teacher education program are not eligible to pursue initial teacher certification in any undergraduate, graduate, or non-degree program at Chicago State University.
- A one credit hour review course for the Illinois Teacher Certification Test in Mathematics is required one semester before student teaching.
- An internship is required prior to student teaching, as listed under the requirements.
- No other courses may be taken during the semester of student teaching.
- All student teachers will demonstrate they have met the Illinois Professional Teaching Standards, including mastery of the content knowledge as evidenced by a passing score on the Illinois Certification Content Area Test in Mathematics. Students must submit proof of passing the certification test to the Office of Field Placement before they will be allowed to student teach. In addition, all candidates must pass the Assessment of Professional Teaching (APT) certification test (Secondary 6-12) before completing student teaching.

Students must:

- Pass the examination on the state and federal constitutions.
- Complete 120 credit hours in:

General Education	48 credit hours
Area of Specialization	44 credit hours
Professional Education	26 credit hours
Elective Courses	2 credit hours

Specific Requirements

General Education **50 credit hours**

Composition **6 credit hours**
ENG 127 and 128.

Humanities **15 credit hours**
SPCH 113; 3 hours of elective courses in English literature; 9 hours of elective courses in the humanities, including a 6 hour sequence in a single foreign language.

Natural Sciences **12 credit hours**
12 hours of elective courses approved by advisor from both biological and physical sciences, including a two course sequence in laboratory science.

Social Sciences **15 credit hours**
HIST 130 or 131 or POL 101; PSYC 141 and 204; 6 hours of elective courses in social science.

Elective Course **2 credit hours**

Area of Specialization **44 credit hours**

Required Mathematics Courses **41 credit hours**
MATH 163, 180, 201, 261, 262, 263, 315, 342, 345, 356 or 358, 361, and 392; at least three additional hours selected from MATH 271, 308, 318, 325, 326, 327, 329, 354, 356, 358, or 370.

Required Supportive Course
CPTR 130 or 141; MATH 092 or pass state teacher certification exam in mathematics subject matter knowledge test.

Professional Education **26 credit hours**
ELCF 152 and 200; PSYC 210; S ED 301 and 303*; ELCF 353*; READ 306*; MATH 363* and 375*.

Course must be passed with at least a grade of C.

** Restricted to students admitted to the College of Education.*

A semester-by-semester sample curriculum pattern for each option is given below.

Sample Curriculum Pattern

Mathematics Option

<i>First Semester</i>		<i>Second Semester</i>	
MATH 162*	3	MATH 163	3
ENG 127	3	MATH 180	1
Social Science**	3	ENG 128	3
Foreign Language	3	Social Science	3

Natural Science***	<u>3</u>	Foreign Language	3
		Natural Science	<u>3</u>
	15		16
<i>Third Semester</i>		<i>Fourth Semester</i>	
MATH 261	4	MATH 262	4
Social Science	3	Social Science	3
Humanities	3	Humanities	3
Natural Science	3	Natural Science	3
Elective	<u>3</u>	CPTR 141 or 130	<u>3</u>
	16		16
<i>Fifth Semester</i>		<i>Sixth Semester</i>	
MATH 263	4	MATH 271	4
MATH 201	3	MATH 342	3
Social Science	3	Social Science	3
Humanities	3	Humanities	<u>3</u>
Elective	<u>3</u>		
	16		13
<i>Seventh Semester</i>		<i>Eighth Semester</i>	
300-level Algebra	3	Applied Math	3
300-level Analysis	3	MATH 392	3
Elective	3	MATH Elective	3
Elective	3	Elective	<u>3</u>
Elective	<u>2</u>		
	14		12

* *The first mathematics course is determined by the placement examination.*

** *Any one of HIST 130, 131, or 215, POL 101 or 202 will satisfy the constitution examination requirement.*

*** *Students must have at least one course in physical science and at least one course in biology including at least one laboratory course.*

Sample Curriculum Pattern Mathematics Secondary Teaching Option

<i>First Semester</i>		<i>Second Semester</i>	
MATH 163*	3	MATH 261	4
ENG 127	3	ENG 128	3
PSYC 141	3	Foreign Language	3
Foreign Language	3	PSYC 204	3
MATH 180	1	Social Science	<u>3</u>

ELCF 152	2		
Elective	<u>1</u>		
	16		16
<i>Third Semester</i>		<i>Fourth Semester</i>	
MATH 262	4	MATH 263	4
MATH 201	3	CPTR 130 or 141	3
SPCH 113	3	ELCF 200	3
PSYC 210	3	MATH 361	3
Natural Science**	<u>3</u>	Nat Science**	<u>3</u>
	16		16
<i>Fifth Semester</i>		<i>Sixth Semester</i>	
MATH 315	4	MATH 345	3
MATH 342	3	Social Science	3
HIST or POL 101	3	MATH 356 or 358	3
S ED 301	3	Nat. Science	3
Nat. Science	3	Humanities	3
Elective	<u>1</u>	English Elective	<u>3</u>
	17		18
<i>Seventh Semester</i>		<i>Eighth Semester</i>	
MATH 392	3	MATH 375	<u>6</u>
Math Elective	3		
S ED 303	2		
ELCF 353	2		
READ 306	2		
MATH 363	3		
MATH 092	<u>1</u>		
	16		6

* *The first mathematics course is determined by the placement examination.*

** *Students must have at least one course in physical science and at least one course in biology including a two-course laboratory sequence.*

*** *Restricted to students admitted to the College of Education.*