

Mathematics, Middle Grades and Secondary School Teaching (BA)

Licensure

This program is designed to give students the mathematical background for teaching middle grades and secondary school mathematics in Texas. Students must meet additional requirements, including grade point average requirements, to obtain a State of Texas teaching certification.

Lists of the combined requirements of the UTeach-Natural Sciences certification programs and these options are available from the UTeach-Natural Sciences academic advisor and in the *Undergraduate Catalog*.

For information about the portfolio review and additional teacher certification requirements, students should consult the UTeach-Natural Sciences academic advisor.

Total Hours Required: 120

Plan of Study

The Plan of Study is a suggested four-year course sequence to support academic planning and serves as a helpful guide. Currently enrolled students should meet with their academic advisor to tailor their course selections and timelines to their individual goals and circumstances.

Course	Title	Hours
Year 1		
Semester 1		
M 408C	Differential and Integral Calculus	4
<u>First-Year Signature Course (090)</u>		3
RHE 306	Rhetoric and Writing	3
<u>Foreign Language and Culture</u>		6
Hours		16
Semester 2		
M 408D	Sequences, Series, and Multivariable Calculus	4
<u>Social and Behavioral Sciences (080)</u>		3
UTS 101	Secondary Teacher Education Preparation: Step 1	1
<u>Foreign Language and Culture</u>		4
M 315C	Foundations, Functions, and Regression Models	3
Hours		15
Year 2		
Semester 1		
M 325K	Discrete Mathematics	3
<u>Natural Science and Technology, Part I (030)</u>		3
<u>U.S. History (060)</u>		3
UTS 110	Secondary Teacher Education Preparation: STEP 2	1
<u>Visual and Performing Arts (050)</u>		3
Hours		13
Semester 2		
M 341	Linear Algebra and Matrix Theory	3
<u>Natural Science and Technology, Part I (030)</u>		3
<u>U.S. History (060)</u>		3
<u>Foreign Language and Culture</u>		3
EDP 350G	Adolescent Development	3
Hours		15
Year 3		
Semester 1		
M 362K	Probability I	3
<u>Natural Science and Technology, Part II (093)</u>		3
GOV 310L	American and Texas Government	3

<u>Cultural Expression, Human Experience, and Thought (may not also be counted toward Core Curriculum)</u>		3
EDC 339E	Secondary School Literacy across the Disciplines	3
Hours		15
Semester 2		
M 358K	Applied Statistics	3
M 333L	Structure of Modern Geometry	3
GOV 312L	Issues and Policies in American Government	3
HIS 329U	Perspectives on Science and Mathematics	3
BIO 337.2	Research Methods: UTeach	3
UTS 170	Student Teaching Seminar	1
Hours		16
Year 4		
Semester 1		
M 361K	Introduction to Real Analysis	3
Social Science course		3
EDC 651S	Topics in Secondary School Teaching Practicum	6
<u>Humanities (040)</u>		3
Hours		15
Semester 2		
M 375D	Discovery: An Introduction to Advanced Study in Mathematics	3
M 343K	Introduction to Algebraic Structures	3
EDC 365C	Knowing and Learning in Math and Science	3
EDC 365D	Classroom Interactions	3
EDC 365E	Project-Based Instruction	3
Hours		15
Total Hours		120

Requirements

All requirements are listed below, starting with the most specialized moving to the most general. Additional requirements may follow the table, so be sure to read the entire page. Some required courses listed below may also satisfy General Education requirements, including Core Curriculum.

Code	Title	Hours
Concentration		
Hours chosen from:		3
BIO 337.2	Research Methods: UTeach	
CH 368.1	Research Methods: UTeach	
PHY 341.7	Research Methods: UTeach	
Hours chosen from: (with a grade of at least C-)		3
HIS 329U	Perspectives on Science and Mathematics	
PHL 329U	Perspectives on Science and Mathematics	
<i>Professional Development (with a grade of at least C-)</i>		
EDC 651S	Topics in Secondary School Teaching Practicum	6
EDC 365C	Knowing and Learning in Math and Science	3
or UTS 350	Knowing and Learning in Math and Science	
EDC 365D	Classroom Interactions	3
or UTS 355	Classroom Interactions	
EDC 365E	Project-Based Instruction	3
or UTS 360	Project-Based Instruction	
UTS 101	Secondary Teacher Education Preparation: Step 1	1
UTS 110	Secondary Teacher Education Preparation: STEP 2	1
UTS 170	Student Teaching Seminar	1
<i>Middle grades certification (with a grade of at least C-)</i>		
Major		
EDC 339F	Adolescent Literacy	3
Choose a sequence below:		8

Sequence 1:

M 408C	Differential and Integral Calculus (Mathematics 408N and Mathematics 408S, or Mathematics 408K and Mathematics 408L, may substitute for Mathematics 408C)	
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M 408D	Sequences, Series, and Multivariable Calculus	
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Sequence 2:

M 408N	Differential Calculus for Science	
M 408S	Integral Calculus for Science	

Sequence 3:

M 408K	Differential Calculus	
M X08L	Integral Calculus	
M 340L	Matrices and Matrix Calculations	3
or M 341	Linear Algebra and Matrix Theory	
M 315C	Foundations, Functions, and Regression Models	3
M 333L	Structure of Modern Geometry	3
M 358K	Applied Statistics	3
M 362K	Probability I	3
M 325K	Discrete Mathematics	3
or M 328K	Introduction to Number Theory	
or M 375D	Discovery: An Introduction to Advanced Study in Mathematics	
M 361K	Introduction to Real Analysis	3
or M 365C	Real Analysis I	
M 343K	Introduction to Algebraic Structures	3
or M 373K	Algebraic Structures I	

Subtotal		59
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Degree (see details below)		18
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Free electives: Additional coursework to reach total hours required.		12
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Subtotal		30
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General Education		
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<u>Remaining Core Curriculum (42 hours total)</u>		31
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<u>Foreign Language other than English, Beginning Proficiency</u>		
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Subtotal		31
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<u>College Requirements - Natural Sciences</u>		
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<u>General University Requirements</u>		
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Total Hours		120
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Additional Requirements and Policy

Students must earn a grade of at least C- and at least a 2.00 grade point average in each required mathematics and science course.

To be recommended for certification, students must have a University grade point average of at least 2.50.

Degree-Bachelor of Arts (BA) - Natural Sciences

The requirements for the Bachelor of Arts under Plan I are designed to give each student flexibility in the selection of courses to meet individual needs.

Code	Title	Hours
	<u>Foreign Language other than English, Intermediate Proficiency</u>	3
	Select one of the following:	
	Certified proficiency on a placement or credit-by-exam test	
	A passing grade in a language course listed in the College of Liberal Arts section	

Students who wish to meet the requirement with proficiency in a language not listed in the table found in the College of Liberal Arts section above should contact the Texas Language Center.

Additional Social Science (may not also be counted toward Core Curriculum)

The course(s) must be in a field of study taught in the College of Liberal Arts and must be in a different field of study from the course used to fulfill the social and behavioral sciences requirement of the core. Courses on the approved list are primarily in anthropology, economics, geography, linguistics, psychology, and sociology, but not every course in these fields is approved. Courses that are approved to count toward any core curriculum area other than social and behavioral sciences may not be counted toward this requirement.

Mathematics		
Three semester hours in mathematics, excluding M 301, M 316K, and M 316L		3

Additional natural sciences hours (may not also be counted toward core curriculum)

Courses used to fulfill this requirement must be chosen from the fields of study listed below; no more than three hours may be in either the history of science or the philosophy of science. To satisfy the mathematics and science and technology requirements of the core curriculum and the natural science requirement of the Bachelor of Arts, Plan I, a student may count (1) no more than 12 hours in mathematics, computer science, and statistics and data sciences combined; and (2) no more than nine hours in any single field of study.

Astronomy
Biology
Chemistry
Geological Sciences
Marine Science
Nutrition
Physical science
Physics
Mathematics (excluding M 301), computer science, statistics and data sciences
Other alternative science courses approved by the dean
Approved alternative courses in history of science and philosophy of science

Cultural Expression, Human Experience, and Thought (may not also be counted toward Core Curriculum)

Total Hours	18
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Additional Requirements and Policies

Bachelor of Arts, Plan I Policy

Thirty-six hours must be in upper-division courses. At least 60 hours, including 21 hours of upper-division coursework, must be completed in residence at the University; at least 24 of the last 30 hours must be completed in residence at the University. Provided residence rules are met, credit may be earned by examination, by extension, by correspondence (up to 30 percent of the hours required for the degree), or, with the approval of the dean, by work transferred from another institution. Up to 16 semester hours of classroom and/or correspondence coursework may be taken on the pass/fail basis; this coursework may be counted only as electives.

Courses in the major and additional coursework may also be used to fulfill prescribed work requirements unless expressly prohibited. A

course in one prescribed work area may not also be used to fulfill the requirements of another prescribed work area.

Elective hours Policy

Hours may include no more than 12 semester hours of bible courses; nine hours of designated coursework in air force science, military science, or naval science; 16 hours completed on the pass/fail basis; 39 hours in any one field of study offered in the College of Liberal Arts or the College of Natural Sciences, unless major requirements state otherwise; and 39 hours in any other single college or school of the University.

Major Requirements

The Bachelor of Arts, Plan I, requires the completion of all requirements for one major.

The number of semester hours required in the major varies with the field selected. Unless the requirements of the major state otherwise, a major consists of at least 24 but no more than 39 semester hours, with at least 15 hours in upper-division courses. Of these 15 hours, six must be completed in residence. At least 18 hours of coursework in the major, including six hours of upper-division coursework, must be completed in residence at the University.

Additional Coursework

Students in most majors must also fulfill the requirements of additional coursework. The requirements of the additional coursework are established by the major department and are given with the major requirements. Additional restrictions may be imposed by the academic department(s) in which the student takes the courses used to fulfill the requirements of the additional coursework; before planning to use a course to fulfill the additional coursework requirement, the student should consult the department that offers the course.