these conferences, enrollment is not limited to Model UN participants. May be repeated up to 9 hours.

Hist 497 (F) 3 hrs. cr.
Seminar in Historical Research *(Writing Intensive)*
Topics pertaining to an era or historical problem of special interest to the instructor and students. Emphasis on student's ability to research, assimilate, and present new areas of knowledge. Prerequisites: Junior standing, Hist 201, Eng 102, and 6 hours upper-division history courses.

Latin American History

Hist 201 (F) 3 hrs. cr.
Introduction to Historical Research
A formal introduction to the discipline of history and the skills needed for studying it. Emphases include basic research techniques, critical reading of primary and secondary sources, and the recommended styles and strategies for writing research papers. Required of all History B.A. and all Social Studies (History emphasis) B.S.E. majors as a prerequisite for upper-division history courses. Prerequisite: Hist 110 or 120 or 130 or 140.

Hist 210 (F, Even) 3 hrs. cr.
History of Latin America
Provides a historical overview of Latin America, from the Spanish and Portuguese to the present day, by examining the major themes and events in the region. Particular emphasis will be placed on the Indian background of Latin American history and the ways the natives helped shape Latin American society. Topics covered will include the conquest of Latin America, Spanish administration, the independence movements of the nineteenth century, nation building, democratization, and the influence of the United States.

Hist 474 (Demand) 3 hrs. cr.
Colonial Latin America
Colonial Latin America will provide a historical overview of Latin American from the Spanish and Portuguese conquest until independence in the 1820s, by examining the major themes and events in the region. Particular emphasis will be placed on the Indian background to Latin American history and the ways the natives helped shape Latin American society. Topics covered will include the conquest of Latin America, imperial rivalries, Spanish administration, Indian labor, and the independence movements of the 19th century.

Hist 475 (Demand) 3 hrs. cr.
Modern Latin America
Historical overview of Latin America since independence, examining major themes, events, and issues in the region. Particular emphasis on ways in which Latin American peoples have struggled to resist, adapt, and take advantage of the social forces influencing their nations' urbanization, populism, social revolution, development, peasant rebellion, the position of women in society, and the Church.

Hist 497 (F) 3 hrs. cr.
Seminar in Historical Research *(Writing Intensive)*
Topics pertaining to an era or historical problem of special interest to the instructor and students. Emphasis on student's ability to research, assimilate, and present new areas of knowledge. Prerequisites: Junior standing, Hist 201, Eng 102, and 6 hours upper-division history courses.

Hist 498 (F or S) 3 hrs. cr.
Advanced Topics in History
Advanced topics not covered in other history offerings. Emphasis is placed on the student's ability to research, assimilate, and present new areas of knowledge. Prerequisite: Junior or senior status; prior instructor consultation is advised.

Hist 499 (F, S) 1-2-3 hrs. cr.
Independent Study
Individualized project directed by the instructor/adviser prior to enrollment in the study. Advanced standing in the major field and a minimum GPA of 3.0 are required.

MATHEMATICS

Reynolds Hall 210, 417.625.9376

Faculty Vazquez - Head, Adkins A., Adkins L., Cassens, Curtis, Hand, Harmon, Johnson, Laird, Livingston, Thuong

In an increasingly technological society, applications of mathematics continue to increase in variety. Persons with quantitative ability and training are in high demand. Career opportunities exist in a diversity of fields such as engineering, computer science, economics, statistics, operations research, management, and education. Missouri Southern graduates are enjoying success in all of these areas. Some graduates choose to begin careers immediately upon graduation; others choose to continue their education in graduate school. The curriculum is designed to prepare students for either path. The computational mathematics option allows a student to obtain a double major in mathematics and computer science.

Core requirements for the bachelors and the associate of arts degree can be met with any mathematics course numbered 120 or above. Note the limitations on Math 119 in the course descriptions.

Core requirements for the associate of science degree can be met with any mathematics course numbered 030 or above.

For students majoring in mathematics, mathematics education, computational math, or minoring in math, only courses in which they have earned a grade of "C" or above can be used to satisfy departmental mathematics requirements and supporting requirements. Mathematics courses used as prerequisites require a grade of "C" or better. Placement in the first college math course is based on the student's score on the Mathematics Section of the ACT. More information is available in the individual course description, the Mathematics Department Office, or on the following website: www.mssu.edu/math/place.htm.

Bachelor of Science with a Major in Mathematics

	Semester Hours
Core Requirements (p. 32) 51*	**43**
Mathematics Requirements	**39**
Math 150 Calculus with Analytic Geometry I**	5
Math 250 Calculus with Analytic Geometry II**	5
Math 260 Calculus with AnalyticGeometry III**	5

Math 300	Fundamentals of Mathematical Thought**	3
Math 342	Abstract Algebra**	
OR		
Math 351	Linear Algebra**	3
Math	Electives numbered above 320***	18
Supporting Requirements		**16-18**
Phys 250	General Physics I	2
Phys 260	General Physics II	3
Chem 101	General Chemistry I	5
CIS 110	(or above)	3
Phys 290-91	General Physics III+Lab	5
OR		
Chem 102	General Chemistry II	5
OR		
CIS 210	Programming II	3
Electives		**24-26**
TOTAL		**124****

*Required mathematics, chemistry, and physics courses satisfy major requirements and 8 hours of Core Curriculum requirements.
**See Prerequisites
***Must include one from Math 350, 371, 452 to satisfy Computer Literacy requirement and either 330, 371, or 452 to satisfy Writing Intensive requirement.
****Must include at least 40 upper division (300-400 level) hours.

Bachelor of Science with a Major in Mathematics Computational Mathematics Option*

		Semester Hours
Core Requirements (p. 32) 51**		**43**
Mathematics Requirements		**33**
Math 150	Calculus with Analytic Geometry I***	5
Math 250	Calculus with Analytic Geometry II***	5
Math 260	Calculus with Analytic Geometry III***	5
Math 300	Fundamentals of Mathematical Thought***	3
Math 350	Introduction to Numerical Analysis***	3
Math 351	Linear Algebra***	3
Math 361	Probability and Statistics I	3
Math 371	Introduction to Operations Research (WI)***	3
Math	Electives numbered above 320***	3
CIS	**Core**	**33**
CIS 110	Programming I	3
CIS 210	Programming II	3
CIS 302	Information Systems I (WI)	3
CIS 310	Database Management Systems I	3
CIS 315	Computer Networks	3
CIS 345	UNIX System Administration	3
CIS 350	Data Structures	3
CIS 410	Information Systems II	3
CIS 425	Database Management Systems II (WI)	3
CIS 435	Data Mining	3
CIS 450	Operating Systems (WI)	3
Supporting Requirements		**10**
Phys 250	General Physics I	2
Phys 260	General Physics II	3
Chem 101	General Chemistry I	5
Electives		**5**
Total		**124**

*This program is the same as the Bachelor of Science in CIS, Computer Science (Option 2). See page 219. Students selecting this option will graduate with a double major, Mathematics and Computer Information Science.
**Required mathematics, chemistry, and physics courses satisfy major requirements and 8 hours of Core Curriculum requirements.
***See Prerequisites

Bachelor of Science in Education with a Major in Mathematics

Grades 9-12 Certification
Plan A One of Two Teaching Fields

		Semester Hours
Core Requirements (p. 32) 51*		**45**
Mathematics Requirements		**33**
Math 150	Calculus with Analytic Geometry I**	5
Math 250	Calculus with Analytic Geometry II**	5
Math 260	Calculus with Analytic Geometry III**	5
Math 300	Fundamentals of Mathematical Thought**	3
Math 332	Geometry**	3
Math 342	Abstract Algebra**	3
Math 351	Linear Algebra**	3
Math 361	Probability & Statistics**	3
Math 371	Introduction to Operations Research (WI)	
OR		
Math 452	Mathematical Models	3
Supporting Requirements		**3**
CIS 110	Programming I	3
Education Certification Requirements (p. 189)		**39-40**
Second teaching field (some fields exceed 30 hours)		**30**
TOTAL		**150-151****

*Required courses in mathematics and psychology satisfy major requirements and six hours of Core Curriculum requirements.
**See Prerequisites

Bachelor of Science in Education with a Major in Mathematics

Grades 9-12 Certification
Plan B Single Teaching Field

		Semester Hours
Core Requriements (p. 32) 51*		**40**
Mathematics Requirements		**33**
Math 150	Calculus with Analytic Geometry I**	5
Math 250	Calculus with Analytic Geometry II**	5
Math 260	Calculus with Analytic Geometry III**	5
Math 300	Fundamentals of Mathematical Thought**	3
Math 332	Geometry**	3
Math 342	Abstract Algebra**	3
Math 351	Linear Algebra**	3
Math 361	Probability and Statistics I**	3

Math 371 Introduction to Operations Research (WI)
OR
Math 452 Mathematical Models 3
Supporting Requirements. 16-18
Phys 250 General Physics I. 2
Phys 260 General Physics II 3
Chem 101 General Chemistry I 5
CIS 110 (or above) 3
Phys 290-91General Physics I+Lab (5)
OR
Chem 102 General Chemistry II (5)
OR
CIS 210 Programming II (3) 3-5
Education Certification Requirements (p. 189) . . . 43
TOTAL 132-134

*Required courses in mathematics, chemistry, physics, and psychology satisfy major requirements and 11 hours of the Core Curriculum requirements.
**See Prerequisites

Minor in Mathematics

		Semester Hours
Math 150	Calculus with Analytic Geometry I	5
Math 250	Calculus with Analytic Geometry II	5
Math	Electives numbered above 250*	11
		21

*At least 6 hours upper division (excluding Math 302).

Suggested Order of Study

Bachelor of Science
Major Code 1701
Mathematics

Freshman Year
1st Semester

Course		Hours
Math 150	Calculus with Analytic Geometry I	5
Chem 101	General Chemistry I	5
CORE	[Eng 101 Comp I (WI)]	3
CORE	[Area 2 Elective]	3
Psy 120	College Orientation	1
		17

2nd Semester

Math 250	Calculus with Analytic Geometry II	5
CORE	[Eng 102 Comp II (WI)]	3
Phys 250	General Physics I	2
Phys 260	General Physics II	3
CIS 110	Programming I	3
		16

Sophomore Year
1st Semester

Math 260	Calculus with Analytic Geometry III	5
CORE	[Econ 180 Amer Econ Sys]	3
CORE	[Hist 110 U.S. History]	3
CORE	[Kine 103 Lifetime Wellness]	2
Phys/Chem/CIS	Elective	3-5
		16-18

2nd Semester

Math 300	Fund of Math Thought	3
Math	Elective [322]	3
CORE	[Psy 100 or Soc 110]	3
CORE	[Area 2 Elective]	3
CORE	[Comm 100 Oral Communication]	3
		15

Junior Year
1st Semester

Math	Electives**	6
CORE	[Area 2 Elective]	3
Elective		3
CORE	[PSc 120 Govt:US/Sta/Loc]	3
		15

2nd Semester

Math	Electives**	6
CORE	[Bio 101 General Biology]	4
CORE	[Kine 101 Physical Activity]	1
CORE	[Area 5 Elective]	3
Elective		1
		15

Senior Year
1st Semester

Math	Electives**	6
Electives		6
CORE	[Hist 120 or 320 US Hist]	3
		15

2nd Semester

Math	Electives**	6
Electives		9
		15

**Electives must be approved by math adviser.
[Department Recommendations]

For additional information contact:
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Email: vazquez-j@mssu.edu

Bachelor of Science
Major Code 1702
Computational Mathematics Option*

Freshman Year
1st Semester

Course		Hours
CIS 110	Programming I	3
Math 150	Calculus with Analytic Geometry I	5
CORE	[Eng 101 Comp I (WI)]	3
CORE	[Psy 100 or Soc 110]	3
Psy 120	College Orientation	1
		15

2nd Semester

CIS 210	Programming II	3
Math 250	Calculus with Analytic Geometry II	5
Phys 250	General Physics I	2
Phys 260	General Physics II	3
CORE	[Eng 102 Comp II (WI)]	3
		16

Sophomore Year
1st Semester

CIS 310	Database Management System I	3

Chem 101	General Chemistry I	5
Math 260	Calculus with Analytic Geometry III	5
CIS 315	Computer Networks	3
		16

2nd Semester

CIS 302	Information Systems I	3
CIS 350	Data Structures	3
Math 300	Fund of Math Thought	3
CORE	[Kine 101 Physical Activity]	1
CORE	[Kine 103 Lifetime Wellness]	2
CORE	[Area 2A]	3
		15

Junior Year
1st Semester

CIS 345	UNIX System Administration	3
CIS 410	Information Systems II (WI)	3
Math 371	Introduction Operations Research (WI)	3
Math 361	Probability & Statistics I	3
CORE	[Hist 110 U.S. History]	3
		15

2nd Semester

Math 350	Introduction to Numerical Analysis	3
	General Elective	3
CORE	[Bio 101 General Biology]	4
CORE	[Area 5 Elective]	3
CORE	[PSc 120 Govt:US/Sta/Loc]	3
		16

Senior Year
1st Semester

CIS 435	Data Mining	3
CIS 450	Operating Systems (WI)	3
Math 351	Linear Algebra	3
CORE	[Econ 180 Amer Econ Sys]	3
CORE	[Hist 110 US History]	3
	General Elective	1
		16

2nd Semester

CIS 425	Database Management Systems II	3
Math	Elective**	3
CORE	[Area 2B]	3
CORE	[Area 2C]	3
CORE	[Hist 120 US History]	3
		15

*See requirements and exclusions on page 115.
**Electives must be approved by math adviser.
[Department Recommendations]

For additional information contact:
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Bachelor of Science in Education
Major Code 9022
Mathematics Major
Grades 9-12 Certification
Plan B Single Teaching Field

Freshman Year
1st Semester

Course		Hours
Math 150	Calculus with Analytic Geometry I	5
CORE	[Eng 101 Comp I (WI)]	3
Psy 100	General Psychology	3
CORE	[Kine 103 Lifetime Wellness]	2
Educ 100	Orientation to Education I	1
Psy 120	College Orientation	1
		15

2nd Semester

Math 250	Calculus with Analytic Geometry II	5
Chem 101	General Chemistry I*	5
CORE	[Eng 102 Comp II (WI)]	3
CIS 110	Programming I	3
CORE	[Kine 101 Physical Activity]	1
		17

Sophomore Year
1st Semester
Take C-Base Test.

Math 260	Calculus with Analytic Geometry III	5
Phys 250	General Physics I	2
Phys 260	General Physics II	3
CORE	[Comm 100 Oral Communication]	3
CORE	[Area 2 Elective]	3
Educ 200	Orientation to Education II	1
		17

2nd Semester
Apply for admission to Teacher Education.

Math 300	Fund of Math Thought	3
CORE	[Bio 101 General Biology]	4
Psy 301	Adolescent Psychology	3
CORE	[Hist 110 U.S. History]	3
Phys/Chem/CIS	Elective**	3-5
		16-18

Junior Year
1st Semester
Pass media competencies.

Math 332	Geometry	
OR		
Math 361	Probability & Statistics I	3
Math 342	Abstract Algebra	
OR		
Math 351	Linear Algebra	3
Educ 321	Microteaching	2
Educ 329	Ped Theory, Methods & Practices	4
Educ 423	Classroom Management	2
CORE	[Hist 120 or 320 U.S. Hist]	3
		17

2nd Semester

Math	Electives**	3
CORE	[PSc 120 Govt:US/Sta/Loc]	3
Psy 310	Educational Psychology	2
Psy 302	Exceptional Child	2
CORE	[Area 2 Elective]	3
CORE	[Area 2 Elective]	3
		16

Senior Year
1st Semester
Apply for admission to student teaching. All course work must be completed except Professional Semester courses.

Math 332	Geometry	
OR		
Math 361	Probability & Statistics I	3
Math 342	Abstract Algebra	
OR		
Math 351	Linear Algebra	3
CORE	[Area 5 Elective]	3
CORE	[Econ 180 Amer Econ Sys]	3
Educ 422	Reading in the Content Area: Secondary	2
Educ 301	Use/Comp Software in the Classroom	3
		17

2nd Semester		
Educ 339	Teaching Math in Sec Schools	3
Educ 402	Foundations of Education	2
Educ 432	Critical Issues	2
Educ 412	Individual Curriculum Development (2)	
OR		
Psy 412	Measurement & Evaluation	2
Educ 462	Student Teaching	8
		17

**Electives must be approved by math adviser.
[Department Recommendations]

For additional information contact:
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Course Descriptions

Math 020 (F, S) 3 hrs. cr.
Beginning Algebra
Operations on signed numbers, linear equations and inequalities, systems of linear equations, polynomial arithmetic. No credit towards baccalaureate degree.

Math 025 (F, S) 2 hrs. cr.
Accelerated Beginning Algebra
Linear equations and inequalities with applications, graphing linear equations, systems of linear equations and inequalities, exponents. Other topics may be covered as time permits. Designed as a preparation for intermediate algebra for those students already having mastered real number arithmetic and solution of basic linear equations. No credit toward baccalaureate degree. Prerequisite: One year of high school algebra and score of at least 16 on the ACT Mathematics Section or qualifying score on the Mathematics Placement test.

Math 030 (F, S) 3 hrs. cr.
Intermediate Algebra
Factoring, operations on polynomials, radicals, quadratic equations. Prerequisite: One year of high school algebra and a score of 19 or above on the ACT Mathematics Section or qualifying score on departmental exam or Math 020 or Math 025 with a grade of "C" or better. No credit towards baccalaureate degree.

Math 114 (Demand) 3 hrs. cr.
Technical Mathematics
Integrated study of algebra, geometry, and trigonometry for technical majors. Applications from various fields of technology. Prerequisite: One year of high school algebra and a score of 19 or above on the ACT Mathematics Section, or one year of high school algebra and a satisfactory score on the Mathematics Placement Test, or Math 020 with a grade of "C" or better.

Math 119 (F, S) 3 hrs. cr.
Mathematics for Elementary Teachers I
The real number system and its subsystems, relations and functions, numeration systems. Prerequisite: One year of high school algebra and one of the following: a) Math 030 with a grade of "C" or better, b) a score of 22 or above on the ACT Mathematics Section, or c) a qualifying score on the departmental placement exam. *(Will not meet the Core Curriculum mathematics requirements for nonelementary education majors.)*

Math 120 (F, S) 3 hrs. cr.
Math for Elementary Teachers II
A continuation of Math 119. Sets of points, metric and non-metric geometry, probability. Recommended for prospective elementary teachers. Prerequisite: Math 119 with a grade of "C" or better or permission of department.

Math 125 (F, S) 3 hrs. cr.
Contemporary Mathematics
College mathematics with an introduction to various areas of mathematics, such as geometry, statistics, set theory, algebra, linear programming and other topics. Satisfies the requirement in mathematics for the Core Curriculum. Prerequisite: (a) Math 030 with a grade of "C" or better, (b) a score of 22 or above on the ACT Mathematics Section, or (c) a qualifying score on the departmental placement exam.

Math 130 (F, S) 3 hrs. cr.
College Algebra
Functions and their graphs; polynomial, rational, exponential, and logarithmic functions; systems of equations; the binomial theorem. Prerequisite: Two units of high school algebra, one unit of high school geometry and a score of 22 or above on the ACT Mathematics Section, or Math 030 with grade of "C" or better.

Math 131 (F, S) 3 hrs. cr.
Finite Mathematics
Finite mathematics with algebra that is designed for business, social science, and computer science students. Set theory, functions, matrices, linear programming, probability and statistics, with applications. Prerequisite: Two units of high school algebra and a score of 22 or above on the ACT Mathematics Section or Math 030 with a grade of "C" or better.

Math 135 (F, S) 3 hrs. cr.
Trigonometry
Trigonometric functions, inverses, and their graphs; trigonometric identities and equations; solution of the general triangle; complex numbers. Prerequisite: Two units of high school algebra, one unit high school geometry and a score of 22 or above on the ACT Mathematics Section or Math 030 with grade of "C" or better.

Math 140 (F, S) 5 hrs. cr.
Algebra and Trigonometry
Equivalent of Math 130 and Math 135. Prerequisite: Two units of high school algebra, one unit of high school geometry and a score of 22 or above on the ACT Mathematics Section, or Math 030 with a grade of "C" or better. Only two hours credit for students with Math 135 or Math 130 credit. No credit for students with credit for Math 130 and Math 135.

Math 150 (F, S) 5 hrs. cr.
Calculus with Analytic Geometry I
Differentiation and integration of algebraic functions and plane analytic geometry using vectors. Prerequisite: One of the following (a) Math 140 with a grade of "C" or better (b) A score of 27 or higher on the ACT Mathematics Section and a qualifying score on the Mathematics Placement Test.

Math 250 (F, S) 5 hrs. cr.
Calculus with Analytic Geometry II
Differentiation and integration of transcendental functions and trigonometric functions, polar coordinates, theory of limits and continuity, parametric equations. Applications to physical problems. Prerequisite: Math 150 with a grade of "C" or better.

Math 260 (F, S) 5 hrs. cr.
Calculus with Analytic Geometry III
Solid analytic geometry, indeterminate forms, infinite series, partial differentiation, and multiple integrals. Prerequisite: Math 250 with a grade of "C" or better.

Math 300 (S) 3 hrs. cr.
Fundamentals of Mathematical Thought
Introduction to modern algebra, analysis, and proofs; sets, logic, predicate calculus, relations, functions, logical development of number

systems, cardinality, and divisibility. Prerequisite or corequisite: Math 260 with a grade of "C" or better.

Math 302 (Demand) 3 hrs. cr.
Applied Calculus
Calculus applications of differentiation and integration in business, social sciences, life sciences, and technical careers. Prerequisite: Math 130 or Math 131 with a grade of "C" or better or two years high school algebra and qualifying score on the Mathematics Placement Test. Will not count toward a major or minor in mathematics.

Math 310 (Demand) 3 hrs. cr.
Elementary Statistics
Provides a basic statistical background for the various majors for advanced study in their specialties. Topics include data reduction, measures of central tendency, linear regression, correlation, and hypothesis testing, with applications to social, managerial, biological, and physical sciences. Prerequisite: Two years high school algebra or Math 130 with a grade of "C" or better. Will not count toward a major in mathematics.

Math 312 3 hrs. cr.
Problems of Teaching Arithmetic in the Elementary Schools
(See Educ 312 for description.) Will not count toward a major in mathematics.

Math 315 (Demand) 3 hrs. cr.
Algebraic Structures for Teachers
An introduction to modern algebra: Sets, relations and functions, groups, rings, integral domains, and fields. The course will emphasize activities that incorporate these topics in the middle school/junior high mathematics curriculum. Will not count toward a major in mathematics. Prerequisite: Math 150 with a grade of "C" or better.

Math 322 (S) 3 hrs. cr.
Differential Equations
Ordinary differential equations of first and second order, linear equations with constant coefficients, Laplace transforms, power series solutions, numerical solutions, with applications. Prerequisite: Math 260 with a grade of "C" or better.

Math 330 (F, Odd) 3 hrs. cr.
History of Math *(Writing Intensive)*
A multicultural approach to the history of mathematics from the beginnings to the discovery of Calculus. A study of the people and ideas that have shaped events in mathematics history. Historical and contemporary problems that reinforce ideas and methods of the past and present. Construction of a world map depicting important times and places in history. Prerequisite: Math 250 with a grade of "C" or better.

Math 332 (F, Even) 3 hrs. cr.
Geometry
Geometric theory from a modern axiomatic viewpoint. Includes an introduction to finite, projective, Euclidean and non-Euclidean geometries. Prerequisite: Math 250 with a grade of "C" or better.

Math 339 (S) 3 hrs. cr.
Teaching Mathematics in Secondary Schools
Introduction to the instructional planning, materials, and methods of teaching mathematics in the secondary schools. Includes brief survey of the history of algebra and trigonometry. Part of the Professional Semester. Will not count toward a major in mathematics.

Math 342 (F, Odd) 3 hrs. cr.
Abstract Algebra
Number theory, equivalence and congruence, theory of groups, rings, ideals, integral domains and fields. Prerequisite: Math 300 with a grade of "C" or better.

Math 350 (S, Even) 3 hrs. cr.
Introduction to Numerical Analysis
Error analysis, solution of polynomial and transcendental equations, colocation polynomials, matrix methods, numerical differentiation and integration. Prerequisite: Math 250 with a grade of "C" or better and CIS 110 or higher with a grade of "C" or better.

Math 351 (F, Even) 3 hrs. cr.
Linear Algebra
Algebra of linear equations and matrices, vector spaces, linear mappings and transformations, determinants, bilinear and quadratic forms, linear functionals, vector inner products and cross products. Prerequisite: Math 300 with a grade of "C" or better.

Math 361 (F) 3 hrs. cr.
Probability and Statistics I
Theory of probability using concepts and methods of calculus. A study of discrete and continuous distributions. The central limit theorem. Prerequisite: Math 260 with a grade of "C" or better.

Math 371 (F, Odd) 3 hrs. cr.
Introduction to Operations Research *(Writing Intensive)*
Operations research/management science for computer science and mathematics students. Includes linear programming, project scheduling, Markov chains, queuing theory. Prerequisite: Math 260 with a grade of "C" or better and computer programming ability.

Math 375 (Demand) 1 hr. cr.
Seminar in Advanced Problem Solving
Techniques, strategies, and reasoning tools useful for solving sophisticated mathematical problems from various areas and combinations of areas of mathematics. Prerequisite: Math 300 with a grade of "C" or better.

Math 421 (S, Odd) 3 hrs. cr.
Introduction to Advanced Calculus
Methods of real analysis, basic topology of real numbers, sequences and series, the derivative and the Riemann integral. Prerequisite: Math 300 with a grade of "C" or better.

Math 452 (F, Even) 3 hrs. cr.
Mathematical Models *(Writing Intensive)*
Applying mathematics in formulating and analyzing models for real world problems. Topics include game theory, graph models, deterministic and stochastic models, and computer simulation. Prerequisite Math 260 with a grade of "C" or better and CIS 110 or higher with a grade of "C" or better.

Math 462 (S, Even) 3 hrs. cr.
Probability and Statistics II
Distributions of discrete and continuous random variables, sampling distributions and estimation of parameters. Investigation of the techniques of hypothesis testing, correlation, and regression. Prerequisite: Math 361 with a grade of "C" or better.

Math 485 (S) 3 hrs. cr.
Topics in Mathematics
Advanced topics in mathematics. Each year a topic will be chosen from Complex Variables, Number Theory, Partial Differential Equations, Discrete Mathematics, Topology, and Numerical Analysis, with the possibility of additional topics subject to demand. Prerequisite: Math 260 with a grade of "C" or better, with additional prerequisites depending on the topic.

Math 498 (Demand) 1-3 hrs. cr.
Advanced Topics in Mathematics
Designed to give advanced instruction in some area of mathematics not covered in other courses. For upper division majors. Prerequisites to be determined by the department.

Math 499 (Demand) 1-3 hrs. cr.
Independent Study
Course structured by the adviser with approval of the department head and school dean. Prerequisite: Advanced standing in the major field with a grade point average of 3.0. Students must make application several weeks in advance. Registration must be approved by the adviser, department head, and school dean. See department head for details.