MATH EDUCATION (MAE)

MAE 201. Mathematical Concepts for P-9 I. (3 Credits)
I, II. Prerequisites: MAT 112 or higher with a grade of "C" or higher. Concepts beyond algorithmic computation are emphasized. Topics include problem solving, whole numbers, integers, mental math, numeration, and elementary number theory.

View Course Learning Outcomes

1. {}

MAE 202. Mathematical Concepts for P-9 II. (3 Credits)
I, II. Prerequisites: MAT 112 or higher and MAE 201 with a grade of "C" or higher. Concepts beyond algorithmic computation are emphasized. Topics include rational numbers (fractions, decimals, and precent) real numbers, probability, and statistics.

View Course Learning Outcomes

1. {}

MAE 302. Mathematical Concepts for P-9 III. (3 Credits)
I, II. Cross-listed as EME 301. Prerequisites: Admisison to professional education; MAT 112 or higher and MAE 201, each with a grade of "C" or better. Pre- or Co-requisite: MAE 202 with a grade of “C” or better. Concepts beyond algorithmic computation are emphasized. Topics include geometry and measurement. Credit will not be awarded to students who have credit for EME 301.

View Course Learning Outcomes

1. {}

MAE 303. Math Models and Applications. (3 Credits)
II. Prerequisites: A grade of C or higher in MAT 112 or 112B, 114, 211, or 234. Prerequisite or Corequisite: MAT 203 with a grade of C or better. The course emphasizes conceptual understanding and communication of mathematical topics through modeling, problem solving, and technology. Topics include algebra, geometry, and real-world situations. Credit cannot be awarded for both MAT 303 and MAE 303.

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1. {}

MAE 305. Problem Solving and Technology. (3 Credits)
II. Prerequisite: MAE 202 and EDF 204 with a grade of C or better. Prerequisite or corequisite: MAE 302 or EME 301. The course will enable students to use technology effectively in the mathematics classroom andexplore topics to deepen mathematical understanding.

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1. {}

MAE 475. Math Teaching Senior Seminar. (3 Credits)
I. Formerly MAT 475. Prerequisites: admission to teacher education program and a minimum 2.75 GPA in major and supporting course requirements for MAT teaching major. Emphasis on the interrelationship between mathematical topics. Problem solving with technology. Oral presentation on a topic selected jointly with the instructor. Credit will not be warded for both MAE 475 and MAT 475.

View Course Learning Outcomes

1. {}

MAE 480. Seminar in:___. (1-3 Credits)
A. Prerequisite: will vary with topic offeredl. Advanced topics in mathematics education. May be retaken to a maximum of nine hours, provided the topics are different.

View Course Learning Outcomes

1. {}

MAE 501. Applications of Mathematics for P-9 Teachers. (3 Credits)
A. Prerequisite: MAT 303. Topics in the application of mathematical models appropriate for teachers of grades P-9. Credit does not apply toward B.S. or degree requirements for programs offered within this department.

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1. {}

MAE 502. Geometry with Technology for P-9 Teachers. (3 Credits)
A. Prerequisites: MAT 203 and MAE 305. Topics in geometry appropriate for teachers of grades P-9. Credit does not apply toward either B.S. degree requirements for programs offered within this department.

View Course Learning Outcomes

1. {}

MAE 504. Technology for Teaching & Research. (3 Credits)
(3) A. Prerequisite: Senior standing. Technology for mathematical and statistical teaching and research. Exploration of mathematical and statistical concepts through the use of computer algebra systems, statistical software, geometry software, programming languages, and related technologies.

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1. {}

MAE 507. Seminar in Mathematics Education:___. (1-3 Credits)
(1-3) Prerequisite will vary with the topic differed. Topics vary with offering. May be retaken to a maximum of nine hours, with advisor approval, provided the topics are different. Credit towards degree requirements will depend on the course content.

View Course Learning Outcomes

1. {}

MAE 550. Teaching Mathematics in the Secondary School. (3 Credits)
I. Cross-listed as ESE 550. Prerequisites: EDF 413 (C) EMS 490 (C), CED 400 (B), admission to professional education. Pre/Corequisite: MAE 475. Corequisite: CED 450. Developmentally appropriate materials and methods for teaching mathematics and computer science in secondary schools. Credit will not be awarded for both MAE 550 and ESE 550.

View Course Learning Outcomes

1. {}

MAE 701. Applicat of Math for P-9. (3 Credits)
A. Topics in the application of mathematical models appropriate for teachers of grades P-9.

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1. {}

MAE 702. Geo with Tech for P-9 Teachers. (3 Credits)
A. Topics in geometry appropriate for teachers of grades P-9.

View Course Learning Outcomes

1. {}

MAE 704. Tech for Teaching & Research. (3 Credits)
(3) A. Technology for mathematical and statistical teaching and research. Exploration of mathematical and statistical concepts through the use of computer algebra systems, statistical software, geometry software, programming languages, and related technologies.

View Course Learning Outcomes

1. {}

MAE 707. Seminar in Math Edu:_____. (1-3 Credits)
(1-3) A. Topics vary with offering. May be retaken to a maximum number of nine hours, with advisor approval, provided the topics are different. Credit towards degree requirements will depend on the course content.

View Course Learning Outcomes

1. {}

MAE 750. Teach Math in Sec School. (3 Credits)
I. Cross-listed as ESE 750. Developmentally appropriate materials and methods for teaching mathematics and computer science in secondary schools. Minimum of 96 field/clinical hours. Credit will not be awarded to students who have credit for ESE 750

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1. {}

MAE 843. Mathematics Intervention Strat. (3 Credits)
A. Cross-listed as EME 843. In-depth analysis of teaching resources, teaching strategies, and appropriate mathematics curriculum content for intervention. Credit will not be awarded to students who have credit for EME 843.

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1. {}

MAE 850. Trends in Teaching Sec Math. (3 Credits)
A. Cross-listed as ESE 850. Examination of curricular trends, modern programs, appropriate strategies, and innovative materials in secondary mathematics. Credit will not be awarded to students who have credit for ESE 850.

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1. {}

MAE 870. HLM in Educational Research. (3 Credits)
Hierarchical data structures, fixed effects, random effects, hierarchical linear models, null model, partition of variance, intraclass correlation, random intercept models, random coefficient models, growth models, repeated measures, educational research, and use of statistical software. It is strongly recommended that students have completed a course in applied statistics.

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1. {}

MAE 872. Mathematics in the Curriculum. (3 Credits)
A. Exploration of trends, concepts, and issues involved in modern mathematics programs. Research findings are examined and multisensory materials are presented.

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1. {}

MAE 880. Seminar in: _____. (1-3 Credits)
Advanced topics in mathematics education. Topics vary with offering. Credit towards degree requirements will depend on the course content. May be retaken to a maximum of nine hours, provided the topic is different.

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1. {}

MAE 890. Independent Study in:_____. (1-3 Credits)
Prerequisites: An 800-Level course and departmental approval. Studnet must have the independent study proposal approved by faculty supervisor, department graduate committee, and deparmtnet chair prior to enrollment. Independent sutdy on a topic chosen by the student and instructor. May be retaken to a maximum of six hours, provided the topics are different.

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