

MATHEMATICS EDUCATION

Program Information

The School of Teaching & Learning offers the Master of Arts in Education (M.A.E.) degree in Mathematics Education. More information about the requirements for this degree can be found in the Graduate Degrees (<https://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

The **Master of Arts in Education (M.A.E.) in Mathematics Education program** is designed for individuals interested in gaining expertise in mathematics education and strengthening their background in mathematics. The program offers flexible options to ensure that it can support a range of academic and professional goals. Students can choose from one of the following programs of study:

1. A **30-credit** degree option with studies focused on important issues in mathematics education.
2. A combined **30-credit** degree option with our Educator Preparation Institute (EPI), which offers aspiring teachers an 18-credit EPI licensure program plus the additional 12 credits needed for the MAE. Students interested in this option must also apply to the EPI program by April 15th and plan to start during the summer term.
3. A **36-credit** degree option that includes 18 graduate credits in mathematics. Although this is a higher-credit option, it is a popular choice for anyone interested in teaching mathematics in a community college.

All three options require 18 credits of course offerings within the School of Teaching and Learning, including a thesis or project-in-lieu of thesis.

What kind of students typically are enrolled in the M.A.E. in mathematics education program?

- Practicing or aspiring teachers who want to strengthen their abilities to teach mathematics in a variety of instructional settings.
- Experienced teachers who have the eventual goal of earning a doctorate in mathematics education enabling them to work in a teacher education/mathematics education program at an institution of higher education.
- Individuals who plan to teach at the community college level. Requirements to teach at the community college level vary depending on the individual campus. Typically, individuals must have a minimum of 18 credits in graduate mathematics. Candidates are encouraged to consult the community college where they desire employment for the exact employment requirements.

Admission Requirements:

B.A. or B.S. in mathematics, mathematics education, or related field; 2.7 overall GPA and 3.0 upper division GPA; and completing all other general admission requirements

Graduation Requirements:

3.0 GPA (overall and in major); completion of course requirements; thesis or project-in-lieu of thesis

What might a program of study look like in the M.A.E. in mathematics education?

The program of study form is customized to address the unique needs of each student and is developed in consultation with a mathematics education advisor. While there are different requirements for each of the

above options, all options require a thesis or project-in-lieu of thesis to be completed in the graduating semester.

Please visit this website for additional information about the M.A.E. degree program in Mathematics Education: <https://education.ufl.edu/math-education/masters/>.

Degrees Offered

Degrees Offered with a Major in Mathematics Education

- Master of Arts in Education

Requirements for these degrees are given in the Graduate Degrees (<http://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

Courses

School of Teaching and Learning Departmental Courses

| Code | Title | Credits |
|----------|---|---------|
| EDE 5940 | Integrated Teaching and Learning | 3 |
| EDE 6266 | Teaching and Learning in Elementary Classrooms | 3 |
| EDE 6325 | Teacher Inquiry/Action Research | 3 |
| EDE 6905 | Individual Work | 1-5 |
| EDE 6948 | Internship in Elementary Schools | 1-12 |
| EDE 7047 | Issues in Teacher Education | 3 |
| EDF 5552 | Role of School in Democratic Society | 3 |
| EDF 6520 | History of Education | 3 |
| EDF 6544 | Philosophical Foundations of Education | 3 |
| EDF 6616 | Education and American Culture | 3 |
| EDF 6636 | Theorizing Race and Racism in Educational Research | 3 |
| EDF 6639 | Anti-Black Racism in Education | 3 |
| EDF 6812 | Comparative Education | 3 |
| EDF 6866 | Education in Latin America | 3 |
| EDF 6939 | Critical Race Theory in Educational Research | 3 |
| EDF 7934 | Seminar in Educational Foundations | 3 |
| EDG 5666 | Knowing and Learning in Secondary Schools | 3 |
| EDG 6017 | Writing for Academic Purposes | 3 |
| EDG 6047 | Teacher Leadership for Educational Change | 3 |
| EDG 6207 | Transforming the Curriculum | 3 |
| EDG 6226 | Foundations of Research in Curriculum & Instruction | 3 |
| EDG 6228 | Qualitative Research for Practitioner Scholars | 3 |
| EDG 6229 | Qualitative Research in Curriculum and Instruction | 3 |
| EDG 6305 | Multiple Perspectives on Teaching and Learning | 3 |
| EDG 6348 | Instructional Coaching for Enhanced Student Learning | 3 |
| EDG 6356 | Teaching, Learning and Assessment | 3 |
| EDG 6378 | Learning Science with Technology | 3 |
| EDG 6415 | Culturally Responsive Classroom Management | 3 |
| EDG 6445 | Meeting the Educational Needs of Students Living in Poverty | 3 |
| EDG 6648 | Research Design in Curriculum and Instruction | 3 |
| EDG 6664 | Survey of Research on STEM Education | 3 |

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|-----------|--|------|-----------|--|-----|
| EDG 6668 | Teaching Adults | 3 | EME 7938 | Seminar in Educational Media and Instructional Design | 3 |
| EDG 6805C | K-12 Computer Programming Foundations I | 3 | ESE 5426 | Data-Driven Decision Making for Secondary Teachers | 3 |
| EDG 6806C | K-12 Computer Programming Foundations II | 3 | ESE 6345 | Effective Teaching and Classroom Management | 3 |
| EDG 6807 | Issues and Trends in K-12 Computer Science Education | 3 | ESE 6905 | Individual Work | 1-4 |
| EDG 6905 | Individual Work | 1-6 | ESE 6939 | Special Topics | 3 |
| EDG 6910 | Supervised Research | 1-5 | ESE 6945 | Student Teaching in Secondary School | 2-9 |
| EDG 6930 | Schooling & the Marginalization of Students | 3 | ETE 6141 | K-12 Computer Sc Pedagogy I | 3 |
| EDG 6931 | Special Topics | 1-4 | ETE 6142 | K-12 Computer Sc Pedagogy II | 3 |
| EDG 6940 | Supervised Teaching | 1-5 | FLE 6165 | Bilingual-Bicultural Education | 3 |
| EDG 6953 | TLSI Online Portfolio Preparation | 1-3 | FLE 6167 | Cross-Cultural Communication for Teachers | 3 |
| EDG 6971 | Research for Master's Thesis | 1-15 | LAE 5341 | Language Arts: Teaching Nonfiction Writing | 3 |
| EDG 6973 | Project in Lieu of Thesis | 1-9 | LAE 6298 | Literacy & Language Instruction | 3 |
| EDG 7224 | Critical Pedagogy | 3 | LAE 6339 | Curriculum, Methods, and Assessment in Secondary English Language Arts | 3 |
| EDG 7252 | Perspectives in Curriculum, Teaching, and Teacher Education | 3 | LAE 6348 | Teaching Multiliteracies | 3 |
| EDG 7303 | Teacher Learning and Socialization in High Poverty Schools | 3 | LAE 6407 | Early Childhood Children's Literature | 3 |
| EDG 7359 | Professional Development and Teacher Learning | 3 | LAE 6446 | Multicultural Literature for Children and Adolescents | 3 |
| EDG 7365 | Practitioner Research: Data Collection and Analysis | 3 | LAE 6865 | Teaching Media Literacy with the Internet | 3 |
| EDG 7941 | Field Experience in Curriculum and Instruction | 1-4 | LAE 6869 | Teaching Digital Storytelling | 3 |
| EDG 7979 | Advanced Research | 1-12 | LAE 6939 | Literacy, Family, and Culture | 3 |
| EDG 7980 | Research for Doctoral Dissertation | 1-15 | LAE 6945 | Practicum and Assessment for Teachers of Secondary School English | 3 |
| EDG 7982 | Practitioner Research: Theory & Practice | 3 | LAE 6946 | Children's Literature in Educational Settings | 3 |
| EME 5054 | Foundations of Educational Technology | 3 | LAE 7934 | Seminar in Composition Theory and Practice | 3 |
| EME 5207 | Designing Technology-Rich Curricula | 3 | LAE 7936 | Seminar in English Language Arts | 3 |
| EME 5404 | Instructional Computing II | 3 | LAE 7938 | Lit, Cult and Politics | 3 |
| EME 5405 | Internet in K-12 Instruction | 3 | MAE 5332 | Secondary School Mathematics Methods and Assessment | 3 |
| EME 6059 | Blended Learning Environments | 3 | MAE 5347 | Teaching K – 6 Mathematics Methods | 3 |
| EME 6065 | Human-Computer Interaction and the Learner | 3 | MAE 5396 | Using Formative Assessment to Improve Mathematical Learning | 3 |
| EME 6066 | Issues and Trends in Educational Technology Research | 3 | MAE 5945 | Secondary School Mathematics Practicum | 3-6 |
| EME 6067 | Emerging Learning Technologies | 3 | MAE 6177 | Mathematics Teaching and Learning in Higher Education | 3 |
| EME 6074 | Mobile Technologies in Education | 3 | MAE 6313 | Problem Solving in School Mathematics | 3 |
| EME 6156 | Games and Simulations for Teaching and Learning | 3 | MAE 6349 | Classroom Contexts that Support Self-Regulated Learning and Mathematical Understanding | 3 |
| EME 6208 | Designing Integrated Media Environments I | 3 | MAE 6916 | Inquiry in Mathematics Teaching | 3 |
| EME 6209 | Designing Integrated Media Environments II | 3 | MAE 7899 | Mathematics Education Seminar | 3 |
| EME 6235 | Managing Educational Projects | 3 | MUE 7938 | Music Education Seminar | 3 |
| EME 6236 | Distance Education Leadership and Management | 3 | RED 5337 | Reading in the Secondary School | 3 |
| EME 6458 | Distance Teaching and Learning | 3 | RED 5355 | Reading Instruction in the Elementary School | 3 |
| EME 6480 | Quantitative Methods in Educational Technology Research | 3 | RED 5399 | Practices in Beginning Reading Instruction | 3 |
| EME 6606 | Advanced Instructional Design | 3 | RED 6346 | Seminar in Reading | 3-6 |
| EME 6609 | Instructional Design | 3 | RED 6448 | Diagnosing and Remediating Reading Difficulties | 3 |
| EME 6637 | Managing and Analyzing Multimodal Educational Data | 3 | RED 6520 | Classroom Literacy Assessment and Instruction | 3 |
| EME 6638 | Theory, Design, and Development of Stealth Assessment for Learning | 3 | RED 6546C | Diagnosis of Reading Difficulties | 3 |
| EME 6645 | Neurotechnologies in Education | 3 | RED 6548C | Remediation of Reading Difficulties | 3 |
| EME 6651 | Learning Analytics Concepts and Techniques | 3 | RED 6647 | Trends in Reading | 3 |
| EME 6935 | Seminar: Distance Education Issues and Applications | 1 | RED 6843 | Reading Practicum | 1 |
| EME 6945 | Practicum in Educational Media and Instructional Design | 3-8 | RED 6941 | Practicum in Diagnosis and Remediation of Reading Difficulties | 3 |
| EME 7345 | Implementing Educational Technology Innovations (ETIs) | 3 | RED 7019 | Foundations of Literacy | 3 |
| | | | SCE 5140 | Science Curriculum Development | 3 |
| | | | SCE 5316 | Inquiry-Based Science Teaching | 3 |

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| SCE 5695 | Diversity and Equity in Science Teaching | 3 |
| SCE 5765 | Data-Driven Science Instruction | 3 |
| SCE 6117 | Science Education in the Elementary School | 3 |
| SCE 6337 | Secondary Science Methods and Assessment | 3 |
| SCE 6930 | Seminar in Science Education | 3 |
| SCE 6947 | Practicum in Secondary Science Teaching and Assessment | 3 |
| SMT 6066 | Data Wrangling and Visualization in Educational Research | 3 |
| SMT 6106 | Informal STEM Practice | 3 |
| SSE 5945C | Practicum in Secondary Social Studies Teaching and Assessment | 3 |
| SSE 6117 | Social Studies Education—Elementary School | 3 |
| SSE 6133 | Secondary School Social Studies Methods and Assessment | 3 |
| SSE 6478 | Global Studies Methods for Social Studies | 3 |
| TSL 5142 | ESOL Curriculum, Methods, and Assessment | 3 |
| TSL 5335 | ESOL and Reading for Secondary Teachers | 3 |
| TSL 6145 | Curriculum and Materials Development for ESOL K-12 | 3 |
| TSL 6245 | Language Principles for ESOL Teachers | 3 |
| TSL 6373 | Methods of Teaching ESOL K-12 | 3 |
| TSL 6385 | Technology for Language and Reading Education | 3 |
| TSL 6440 | Testing and Evaluation of ESOL | 3 |
| TSL 6670 | Multilingualism from a Global Perspective | 3 |
| TSL 6700 | Issues in ESOL for School Counselors and Psychologists | 3 |

General Courses

| Code | Title | Credits |
|----------|---|---------|
| EDG 6047 | Teacher Leadership for Educational Change | 3 |
| EDG 6207 | Transforming the Curriculum | 3 |
| EDG 6226 | Foundations of Research in Curriculum & Instruction | 3 |
| EDG 6356 | Teaching, Learning and Assessment | 3 |
| EDG 6905 | Individual Work | 1-6 |
| EDG 6910 | Supervised Research | 1-5 |
| EDG 6931 | Special Topics | 1-4 |
| EDG 6940 | Supervised Teaching | 1-5 |
| EDG 6971 | Research for Master's Thesis | 1-15 |
| EDG 6973 | Project in Lieu of Thesis | 1-9 |
| EDG 7224 | Critical Pedagogy | 3 |
| EDG 7252 | Perspectives in Curriculum, Teaching, and Teacher Education | 3 |
| EDG 7303 | Teacher Learning and Socialization in High Poverty Schools | 3 |
| EDG 7941 | Field Experience in Curriculum and Instruction | 1-4 |
| EDG 7979 | Advanced Research | 1-12 |
| EDG 7980 | Research for Doctoral Dissertation | 1-15 |
| EME 6156 | Games and Simulations for Teaching and Learning | 3 |
| EME 6235 | Managing Educational Projects | 3 |
| EME 6236 | Distance Education Leadership and Management | 3 |

Curriculum, Teaching, and Teacher Education Courses

| Code | Title | Credits |
|----------|---|---------|
| EDE 5940 | Integrated Teaching and Learning | 3 |
| EDE 6266 | Teaching and Learning in Elementary Classrooms | 3 |
| EDE 6325 | Teacher Inquiry/Action Research | 3 |
| EDE 6905 | Individual Work | 1-5 |
| EDE 6948 | Internship in Elementary Schools | 3-12 |
| EDE 7047 | Issues in Teacher Education | 3 |
| EDG 6356 | Teaching, Learning and Assessment | 3 |
| EDG 7224 | Critical Pedagogy | 3 |
| EDG 7252 | Perspectives in Curriculum, Teaching, and Teacher Education | 3 |
| EDG 7303 | Teacher Learning and Socialization in High Poverty Schools | 3 |
| EDG 7982 | Practitioner Research: Theory & Practice | 3 |

Educational Technology Courses

| Code | Title | Credits |
|----------|---|---------|
| EME 5054 | Foundations of Educational Technology | 3 |
| EME 5207 | Designing Technology-Rich Curricula | 3 |
| EME 5404 | Instructional Computing II | 3 |
| EME 5405 | Internet in K-12 Instruction | 3 |
| EME 6066 | Issues and Trends in Educational Technology Research | 3 |
| EME 6208 | Designing Integrated Media Environments I | 3 |
| EME 6209 | Designing Integrated Media Environments II | 3 |
| EME 6458 | Distance Teaching and Learning | 3 |
| EME 6606 | Advanced Instructional Design | 3 |
| EME 6609 | Instructional Design | 3 |
| EME 6935 | Seminar: Distance Education Issues and Applications | 1 |
| EME 6945 | Practicum in Educational Media and Instructional Design | 3-8 |
| EME 7938 | Seminar in Educational Media and Instructional Design | 3 |

ESOL/Bilingual Education Courses

| Code | Title | Credits |
|----------|--|---------|
| FLE 6165 | Bilingual-Bicultural Education | 3 |
| FLE 6167 | Cross-Cultural Communication for Teachers | 3 |
| TSL 5142 | ESOL Curriculum, Methods, and Assessment | 3 |
| TSL 6145 | Curriculum and Materials Development for ESOL K-12 | 3 |
| TSL 6245 | Language Principles for ESOL Teachers | 3 |
| TSL 6373 | Methods of Teaching ESOL K-12 | 3 |
| TSL 6440 | Testing and Evaluation of ESOL | 3 |
| TSL 6700 | Issues in ESOL for School Counselors and Psychologists | 3 |

Language and Literacy Education Courses

| Code | Title | Credits |
|----------|--|---------|
| LAE 6298 | Literacy & Language Instruction | 3 |
| LAE 6339 | Curriculum, Methods, and Assessment in Secondary English Language Arts | 3 |
| LAE 6348 | Teaching Multiliteracies | 3 |
| LAE 6407 | Early Childhood Children's Literature | 3 |
| LAE 6446 | Multicultural Literature for Children and Adolescents | 3 |
| LAE 6865 | Teaching Media Literacy with the Internet | 3 |
| LAE 6869 | Teaching Digital Storytelling | 3 |

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| LAE 6939 | Literacy, Family, and Culture | 3 |
| LAE 6945 | Practicum and Assessment for Teachers of Secondary School English | 3 |
| LAE 6946 | Children's Literature in Educational Settings | 3 |
| LAE 7934 | Seminar in Composition Theory and Practice | 3 |
| LAE 7936 | Seminar in English Language Arts | 3 |

Mathematics Education Courses

| Code | Title | Credits |
|----------|---|---------|
| MAE 5332 | Secondary School Mathematics Methods and Assessment | 3 |
| MAE 5396 | Using Formative Assessment to Improve Mathematical Learning | 3 |
| MAE 5347 | Teaching K – 6 Mathematics Methods | 3 |
| MAE 5945 | Secondary School Mathematics Practicum | 3-6 |
| MAE 6313 | Problem Solving in School Mathematics | 3 |
| MAE 7899 | Mathematics Education Seminar | 3 |

Reading Education Courses

| Code | Title | Credits |
|-----------|--|---------|
| RED 5337 | Reading in the Secondary School | 3 |
| RED 5355 | Reading Instruction in the Elementary School | 3 |
| RED 5399 | Practices in Beginning Reading Instruction | 3 |
| RED 6346 | Seminar in Reading | 3-6 |
| RED 6520 | Classroom Literacy Assessment and Instruction | 3 |
| RED 6546C | Diagnosis of Reading Difficulties | 3 |
| RED 6548C | Remediation of Reading Difficulties | 3 |
| RED 6647 | Trends in Reading | 3 |
| RED 6941 | Practicum in Diagnosis and Remediation of Reading Difficulties | 3 |
| RED 7019 | Foundations of Literacy | 3 |

Science Education Courses

| Code | Title | Credits |
|----------|--|---------|
| SCE 5140 | Science Curriculum Development | 3 |
| SCE 5316 | Inquiry-Based Science Teaching | 3 |
| SCE 5695 | Diversity and Equity in Science Teaching | 3 |
| SCE 5765 | Data-Driven Science Instruction | 3 |
| SCE 6117 | Science Education in the Elementary School | 3 |
| SCE 6337 | Secondary Science Methods and Assessment | 3 |
| SCE 6947 | Practicum in Secondary Science Teaching and Assessment | 3 |

Secondary Education Courses

| Code | Title | Credits |
|----------|---|---------|
| ESE 6345 | Effective Teaching and Classroom Management | 3 |
| ESE 6905 | Individual Work | 1-4 |
| ESE 6939 | Special Topics | 3 |
| ESE 6945 | Student Teaching in Secondary School | 3-9 |

Social Foundations of Education Courses

| Code | Title | Credits |
|----------|--|---------|
| EDF 5552 | Role of School in Democratic Society | 3 |
| EDF 6520 | History of Education | 3 |
| EDF 6544 | Philosophical Foundations of Education | 3 |
| EDF 6616 | Education and American Culture | 3 |
| EDF 6812 | Comparative Education | 3 |
| EDF 7934 | Seminar in Educational Foundations | 3 |

Social Studies Education Courses

| Code | Title | Credits |
|-----------|---|---------|
| SSE 5945C | Practicum in Secondary Social Studies Teaching and Assessment | 3 |
| SSE 6117 | Social Studies Education—Elementary School | 3 |
| SSE 6133 | Secondary School Social Studies Methods and Assessment | 3 |
| SSE 6478 | Global Studies Methods for Social Studies | 3 |

Teacher Leadership for School Improvement Courses

| Code | Title | Credits |
|----------|--|---------|
| EDE 6325 | Teacher Inquiry/Action Research | 3 |
| EDG 6047 | Teacher Leadership for Educational Change | 3 |
| EDG 6207 | Transforming the Curriculum | 3 |
| EDG 6415 | Culturally Responsive Classroom Management | 3 |
| EDG 6953 | TLSI Online Portfolio Preparation | 1-3 |

Student Learning Outcomes

Mathematics Education (MAE)

SLO 1 Knowledge

The student will identify, describe, and explain current research on teaching and learning of mathematics

SLO 2 Skills

The student will investigate a significant problem or original question within the field of study.

SLO 3 Professional Behavior

The students will critically evaluate their own effectiveness to plan future lessons and improve the teaching of all students over time.

Mathematics Education (MEd)

SLO 1 Knowledge

The student will identify, describe, and explain research on teaching and learning of mathematics.

SLO 2 Skills

The student will create, select and implement: (1) specific learning goals, (2) appropriate teaching methods and instructional materials, and (3) evaluation strategies aligned with goals, using knowledge of subject matter, learners and classroom management.

SLO 3 Professional Behavior

The student will collaborate with other professionals, such as peers and mentor teachers, to reflect upon their mathematics teaching. Students will communicate high expectations for all PK-12 students.