



**EDU 529  
Mathematics  
Leadership in K-12  
Settings:  
Understanding and  
Implementing Maine's  
State Standards**

**First course out of a four course series  
which must be taken in sequence.  
Taught by Robert Jenkins, MEd, and  
Margaret Griswold, PhD**

**Blended format: Online/UMA  
BRUNSWICK AND UMA SACO**

**NEW COHORT STARTING IN THE  
SPRING 2019!**

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## Graduate Education Certificate in Mathematics Leadership

The Certificate in Mathematics Leadership is designed for practicing educators interested in being mathematics leaders in their school or district. This 4-course Certificate Series will prepare mathematics educators for the challenges of being a leader. Throughout each course strategies to create, adopt and execute professional development for teachers of mathematics will be modeled. Currently, mathematics leadership positions in schools are: math coach, math specialist, high school department chair, middle/elementary-grade level team leader, and District Curriculum Committee member. Other educators who are considering advancing their career in mathematics education, may consider enrolling in the Certificate Series, e.g., RTI coordinators, Mathematics Interventionist or Title I- Math teacher.

*Completion of this Certificate Series requires the following four (4) UMF courses:*

### **EDU 529: Mathematics Leadership in K-12 Settings: Understanding and Implementing Maine Learning Results- State Standards- Mathematics**

This course is the first of the four-course, Certificate Series. It is a prerequisite for the other three courses in the Series. The key content foci of this course are:

- A research project that examines the history of Standards-based Education in Mathematics
- Mathematics standards & curriculum
- Formative assessment in mathematics
- The use of models and representations (both tactile and electronic)
- The design of a mathematics unit.
- Design of a Certificate Series digital portfolio that collects and organizes work from the course and related resources. This portfolio will serve as a 'toolkit' for future mathematics leaders.

### **EDU 531: Mathematics Leadership in K-12 Settings: The Mathematics Pedagogical Knowledge for Standards- Based Instruction**

The content of this course is specific to the skills, concepts and resources necessary to develop effective mathematics instruction. The foci of this course are:

- Mathematics pedagogical knowledge needed to develop mathematics instruction.
- Identification of mathematics resources for effective mathematics instruction.
- The ability to critique mathematics programs for alignment to standards and effective practice.
- The elaboration of the mathematics unit continued in EDU 530 including effective pedagogical practice, appropriate resources and formative assessment.
- Continuation of the Series Portfolio.

**Certificate Policy Regarding Cancellation of Courses:** The cluster of courses required for a graduate certificate program must be completed within a specified time period, based upon the number of courses within the certificate program, typically no more than three years. Students are encouraged to enroll in courses within a certificate program in consecutive semesters and UMF reserves the right to cancel courses and certificate programs at any time due to low enrollments or other conditions affecting enrollment or instruction.

**Notes Regarding Certificate:** Course scheduling will be published on our website <http://www2.umf.maine.edu/gradstudies/>. Keep in mind not all courses are offered every semester. Participation in these courses requires a technologically current computer, an up-to-date web browser, and high speed Internet access. Participants should be familiar with email, word processing, file management, and data backup strategies.

### **EDU 530: Mathematics Leadership in K-12 Settings: The Mathematics Content Knowledge for Standards-Based Instruction**

The content of this course is specific to the knowledge needed by an educator to be an effective mathematics instructor. This knowledge includes a deep knowledge of the mathematics content, along with process and practice standards. The foci of this course are:

- A research project that examines the elements of Mathematics Content Knowledge (MCK).
- An in-depth study of the content and structure of mathematics using the Maine Learning Results- State Standards- Mathematics, particularly the domain progressions, and The CCSS- 8 Mathematical Practice Standards,
- Elaboration of the mathematics unit, started in EDU 529 demonstrating math content, domain progressions and connections between mathematics concepts, and
- Continuation of the digital portfolio.

### **EDU 532: Mathematics Leadership K-12: The Art of Mathematics Coaching and Supervision**

This is the fourth course in a four-course Certificate in Math Leadership. This course offers an introduction to the principles and types of mathematics leadership in educational settings. Students will examine literature related to mathematics leadership with particular attention to the different roles mathematics teacher leaders may play in the classroom, schools, districts, and beyond. Participants will use this knowledge to critically examine their own leadership practices and roles. Focus will be given to developing a shared vision of mathematics teacher-leadership.