

## Mathematics and Science Education

### COLLEGE OF EDUCATION AND HUMAN SERVICES AND COLLEGE OF SCIENCE

#### Graduate Faculty:

**Bu, Lingguo**, Associate Professor, Curriculum & Instruction, Ph.D., Florida State University, 2008. MSMSEd Co-director.

**Henson, Harvey**, Assistant Dean, College of Science, Ph.D., Southern Illinois University Carbondale, 2015, MSMSEd Co-director.

**Wright, Mary H.**, Professor, Mathematics, Ph.D., McGill University, Montreal, Quebec, 1977. MSMSEd Co-director.

#### Purpose of the Program

This interdisciplinary M.S. degree program is designed to offer advanced training in mathematics and science education for elementary and middle school teachers. It is designed specifically for in-service teachers seeking additional content knowledge, pedagogical content knowledge, and leadership skills in mathematics and science education. This is a non-thesis, non-research paper program. Candidates are required to complete an Action Research project in lieu of a thesis or research paper. Upon completion of the program, candidates will be eligible for an endorsement in mathematics and science. Program faculty are drawn from various departments in the College of Science and the College of Education and Human Services.

**Admission.** Prospective graduate students should have an undergraduate degree in Elementary Education, or closely related field, and should already be certified elementary (K-5, 4-8 or K-8) teachers in Illinois. All application materials should be submitted to any one of the Program Co-directors. Students are required to submit official transcripts from all U.S. schools attended during their last two years of undergraduate study, and also for all graduate work completed. Transcripts are not required from institutions where the student received no degree and was not enrolled for more than 12 semester hours of undergraduate credit, provided that the grades obtained at such institutions are recorded upon the transcript of the college which granted the student's degree. This program requires a nonrefundable \$65.00 application fee, which must be submitted with the application for admission to the program. Applicants must pay this fee by credit card. Applications for admission to the program will be reviewed by the Program co-directors. Upon recommendation of the co-directors, the application will be forwarded to the Graduate School for approval.

#### Requirements

##### Foundation Courses

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|----------------|---|
| Math 411-3     | Mathematical Topics for Teachers<br>(3 credits).                                |
| Science 503A-3 | Science for Elementary School Teachers<br>(3 credits).                          |
| CI 522-3       | Integration of Technology into Science and<br>Mathematics Teaching (3 credits). |

##### Content Courses

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|------------|--|
| BIOL 500-3 | Contemporary Biology for Teachers<br>(3 credits).              |
| CHEM 506-3 | Chemistry Topics for Teachers (3 credits).                     |
| GEOL 585-3 | Earth and Space Science for Teachers<br>(3 credits).           |
| MATH 511-3 | Advanced Topics in the Teaching of<br>Mathematics (3 credits). |
| PHYS 575-3 | Special Physics Topics for Teachers<br>(3 credits).            |

##### Educational, Pedagogical and Leadership Courses

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|--|---|
| CI 593 (d) (for science) OR CI 593 (e) (for mathematics) | Individual Research in Education (Action Research) (3 credits).             |
| CI 428-3   | Science Methods and Curriculum<br>Development for K-8 (3 credits).          |
| CI 530-3   | Teaching Problem Solving in School<br>Mathematics (Grades K-8) (3 credits). |
| CI 539-3   | Math Science Leadership (3 credits).  |

**Retention and Graduation.** Students in the MSMSEd program are expected to complete the program in 2 academic years and 2 summer terms. Courses offered during the academic year are offered in a flexible on-line or distance-learning format. Laboratory or field experiences may require an additional commitment of 2-3 Saturdays each semester. Summer courses are offered at various SIU service centers in Southern Illinois.

Approval for graduation requires completion of all required coursework and the Action Research project with a grade of C or better, and an overall GPA in the program of 3.0 or better.