

# STEM Teaching Certificate

This certificate is designed to give K-12 teachers a basic understanding of a broad range of topics of STEM education. These courses are specially designed to help you integrate inquiry-based science, technology, engineering and mathematics (STEM) into the classroom while improving content and pedagogical knowledge in each of these areas. Students will successfully complete 12 credits, with at least one course from each of the STEM content areas AND one methods course in either STEM or Engineering. The methods course will also count as the content course in that STEM area.

Students cannot use more than four credits of 400-level courses on a Certificate Program of Study.

Students will successfully complete at least one course from each of the STEM content areas (Science, Technology, Engineering and Math) and one required Methods course for a minimum of 12 credits as follows:

## Methods

EGEN 511	Engineering Methods for Teachers (Spring-Even Years-Online) *	3
MSSE 501	Inquiry Sci Eng Prac (Fall, Spring, Summer-Online)	2
MSSE 511	STEM Methods for Teachers (Spring-Odd Years-Online) **	2

## Science

Choose from any science content course from the MSSE Course Catalog, <https://www.montana.edu/msse/course-catalog/index.html>, as well as from the AGED courses listed below.

AGED 507	Program Planning and Evaluation (Spring-Online)	3
AGED 511	Philosophy of Teaching and Learning in Agricultural Education (Fall-Online)	3

## Technology

CSCI 581	Computational Thinking Tchrs (Summer-Odd Years-Online)	2
CSCI 582	Joy Beauty Data for Teachers (Summer-Even Years-Online)	2
CSCI 583	Integrating Computer Science in Science Classrooms (Summer-Online)	3
MSSE 502	Emerging Technology and the Science Classroom (Summer-Online)	2
MSSE 511	STEM Methods for Teachers (Spring-Odd Years-Online) **	2

## Engineering

EELE 508	Solar Cell Basics for Teachers (Summer-On Campus)	2
EGEN 511	Engineering Methods for Teachers (Spring-Even Years-Online) *	3

## Mathematics

M 517	Advanced Mathematical Modeling for Teaching (Summer-Odd Years-Online)	3
M 518	Statistics for Teaching (Summer-Even Years-Online)	3
M 520	Access and Equity in Mathematics Teaching (Fall-Odd Years-Online)	3
M 521	Mathematics Learning Theory for Teaching (TBD-Online)	3
M 525	Analysis for Teaching (Fall-Online)	3

M 534	Research in Mathematics Education (Fall-Online)	3
MSSE 508	Statistics Bootcamp for MSSE Capstone Projects (Spring-Online) ***	1

\* EGEN 511 may count towards both Methods and Engineering

\*\*MSSE 511 may count towards both Methods and Technology

\*\*\*MSSE 508 is restricted to students also enrolled in MSSE 575