

# 3 Ways to Enhance a STEM Degree:

## *STEM Education Program Options*

**Certificate  
in STEM Education**  
*9 credit hours*

**Minor  
in STEM Education**  
*15 credit hours*

**STEM Teacher  
Licensure in**

Math, Biology, Chemistry,  
Physics, or Computer  
Science

*21-24 hrs. STEM Ed courses  
+ required courses in  
content area*

**Start with an introductory course:**  
1, 2, or 3 credit hour options; No Pre-reqs

## **STEM 1201 – Intro to Teaching STEM Subjects**

*(fulfills UNIV 1001 University Perspectives requirement)*

This course provides a preview of what it is like to teach STEM subjects. Engaging activities that model effective teaching practices, discussions of STEM education issues, and **optional school observations** will help STEM majors clarify interest in teaching as a career or as an additional skill as a STEM professional.

## **STEM 1212 – Inquiry Approach to Teaching STEM Subjects**

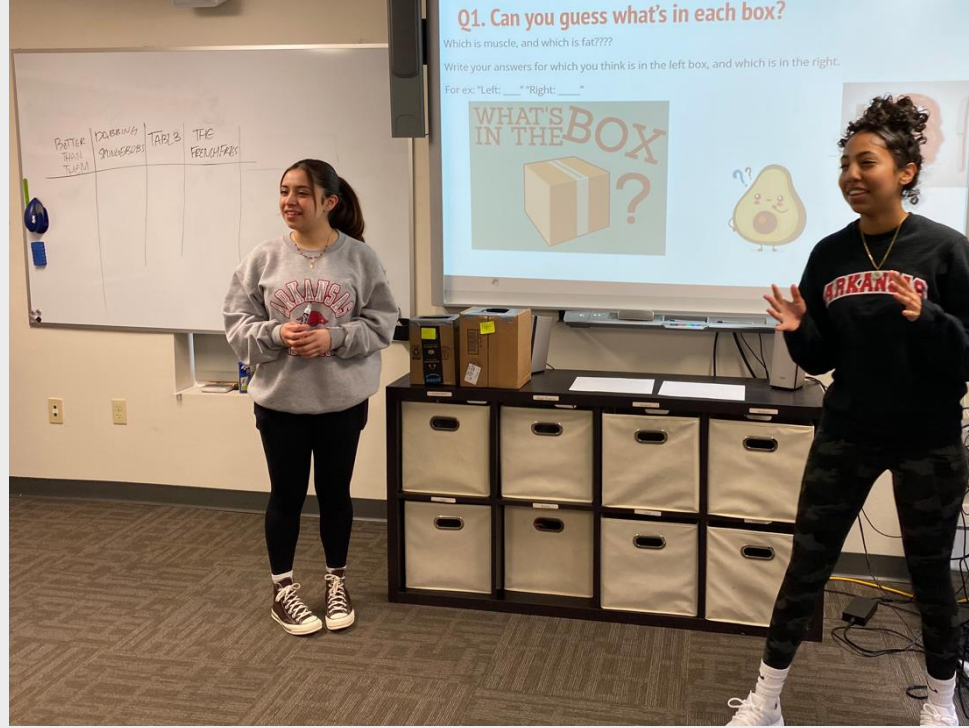
Along with learning classroom strategies for engaging students and organizing a lesson, student pairs **plan and teach three inquiry-based lessons (choice of math, science, or computer science) in a local school classroom**. For STEM majors, but open to all who are interested in exploring teaching as an additional career option.

*Note: Class will meet twice a week for the first four weeks and for the last week. In between, class will meet only once a week (Tuesdays) to compensate for time spent at schools. Students without transportation will be paired with students who can drive to schools.*

## **STEM 2003 – The Art of STEM Communication**

*(fulfills a social sciences elective for State Minimum Core)*

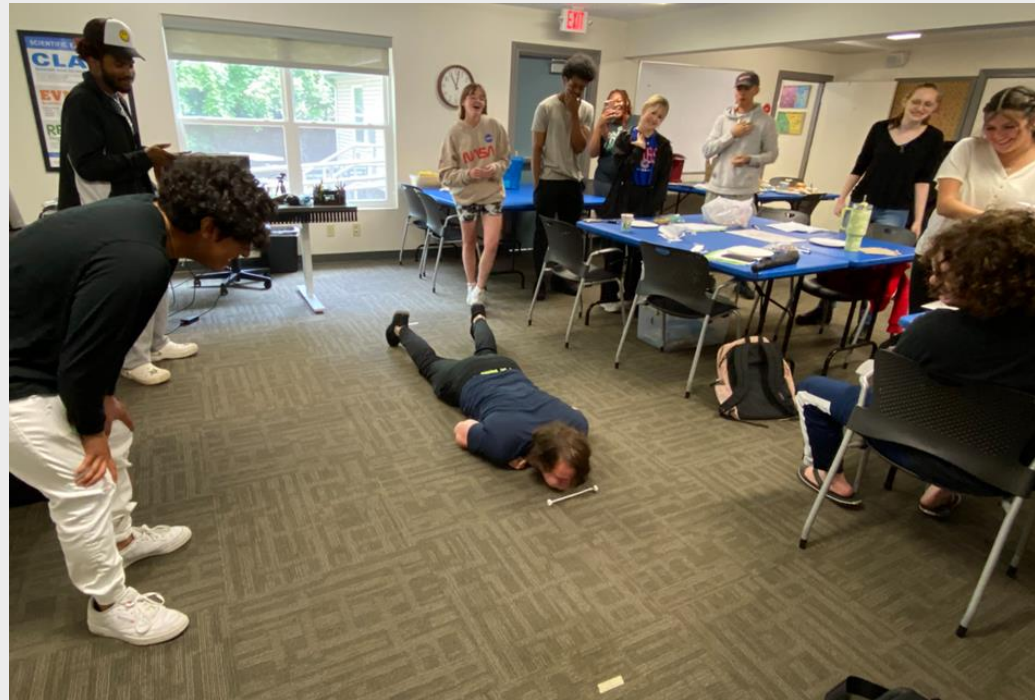
It is widely known that breakdown of communication contributes to mistrust and misunderstanding of the scientific enterprise. In this dynamic, interdisciplinary course including guest lectures, socio-scientific issues, and theatre-style methods, students will learn to communicate complex STEM topics clearly and effectively using research-based practices from the field of education.



STEM 1201 and STEM 1212  
Class Activities and  
Teaching Experiences







# Certificate of STEM Education

## 9 credit hours

### One Required Course:

STEM 2003 – The Art of STEM Communication  
(counts as Univ. Core Social Sciences Elective)

Choose 6  
credit hours  
of Electives\*  
from several  
choices!

\*substitutions  
may be approved  
by STEM Ed advisor

Elective combo:  
**STEM 1201 + STEM 1212**  
Intro to Teaching STEM &  
Inquiry Approach to  
Teaching STEM Subjects

Elective: **STEM 2103**  
Knowing & Learning in  
Science and Mathematics

Elective: **STEM 4073**  
Teaching Programming

Elective: **STEM 3403**  
STEM Teaching Experiences

Elective: **STEM 4333**

History and Philosophy of Science for Science Teachers

Elective: **BIOL/CHEM/PHYS 3273**  
Inquiry & Modeling in Science Education

Elective: **Math 2903**  
Functions, Foundations, & Models

Elective: **EDST 4113**  
Outdoor & Informal Education  
(may need an override to enroll)

Elective: **STEM 4033**  
Intro to STEM Education

# Minor in STEM Education

15 Credit Hours

9 credit hours of required Courses

Choose 6 Credit Hours of Electives:

STEM 2003 The Art of STEM Communication

*or*

STEM 1201 Intro to Teaching STEM Subjects

STEM 1212 Inquiry Approach to Teaching STEM

*And...*

STEM 2103 Knowing & Learning

*And...*

*STEM 3203 Classroom Interactions*

- STEM 2003 *or* STEM 1201/STEM 1212
- STEM 4303 Teaching Secondary Mathematics I
- STEM 4313 Teaching Secondary Mathematics II
- SEED/STEM 4003 Teaching Secondary Science
- STEM 4073 Teaching Programming
- STEM 4333 History and Philosophy of Science for Science Teachers
- CIED 4023 Teaching in Secondary Inclusive Settings
- BIOL/CHEM/PHYS 3273 Inquiry & Modeling in Science Education
- MATH 2903 Functions, Foundations, & Models
- STEM 3403 STEM Teaching Experience

*Substitutions can be made with STEM Ed advisor approval*

# STEM Teacher Licensure Program for Math, Biology, Chemistry, Physics or Computer Science Licensure

## Education Courses

### Everybody takes:

- Either STEM 1201/STEM 1212 **or** STEM 2003 Art of STEM Communication
- STEM 2103 Knowing & Learning
- STEM 3203 Classroom Interactions
- STEM 4506 Teaching Internship + STEM 4403 Teaching Seminar

### MATH Licensure only:

- STEM 4303 or STEM 4313 Teaching Secondary Mathematics I or II
- MATH 2903 Functions, Foundations, and Models

### Science Licensure Only:

- SEED/STEM 4003 Teaching Secondary Science
- STEM 4333 History and Philosophy of Science for Science Teachers
- BIOL/CHEM/PHYS 3273 Inquiry & Modeling in Science Education

### Computer Science Licensure Only:

- STEM 4073 Teaching Programming in Secondary Schools

## Content Area Courses

- Each licensure area has a list of specific content area courses that must be taken to earn the teaching license.
- Students do not need to earn a degree in the licensure area (*although most people will take that path, students with majors such as engineering, geosciences, or educational studies, can add the required content courses along with the STEM Education courses to earn the teaching license*)



# Content courses required to earn teacher licensure in a STEM Subject

The required content courses to teach **Mathematics, Biology, Chemistry, Physics, or Computer Science** are listed per column in this document:

<https://docs.google.com/document/d/1Dr0m13JdAd0tNYJUChpoqtbTtQ5RdxXZ/edit?usp=sharing&oid=109057585875189580905&rtpof=true&sd=true>

# Contact a STEM Ed Advisor to see how our program can fit into your degree!

*STEM Education courses and program options are available to all majors, but focus on the following areas:*

Science majors:

Dr. Peggy Ward      [pdward@uark.edu](mailto:pdward@uark.edu)

Math, Computer Science majors:

Dr. Kim McComas      [kmccomas@uark.edu](mailto:kmccomas@uark.edu)

Engineering majors:

Michelle Childress      [mjc1219@uark.edu](mailto:mjc1219@uark.edu)