

976--- **STEM 5-8. Due to content being competency driven, college/university recommendation may be required.**

**(1) Authorization. The holder of this endorsement is authorized to teach science, mathematics, and integrated STEM courses in grades five through eight.**

**(2) Program requirements. Be the holder of a 5-12 science, mathematics, or industrial technology endorsement or 5-8 middle school mathematics or science endorsement.**

**Completion of a minimum of 12 semester hours of college-level science.**

Course #	Course Title	Institution	Semester Hr.	Year Completed

**Completion of a minimum of 12 semester hours of college-level math (or the completion of Calculus I) to include coursework in computer programming.**

Course #	Course Title	Institution	Semester Hr.	Year Completed

**Completion of a minimum of 3 semester hours of coursework in content or pedagogy of engineering and technological design that includes engineering design processes or programming logic and problem-solving models and that may be met through either of the following:**

- **Engineering and technological design courses for education majors;**
- **Technology or engineering content coursework.**

Course #	Course Title	Institution	Semester Hr.	Year Completed

**Completion of a minimum of 6 semester hours of required coursework in STEM curriculum and methods to include the following essential concepts and skills:**

- **Comparing and contrasting the nature and goals of each of the STEM disciplines;**
- **Promoting learning through purposeful, authentic, real-world connections;**

STEM 5-8 Endorsement Worksheet

- **Integration of content and context of each of the STEM disciplines;**
- **Interdisciplinary/transdisciplinary approaches to teaching (including but not limited to problem-based learning and project-based learning);**
- **Curriculum and standards mapping;**
- **Engaging subject-matter experts (including but not limited to colleagues, parents, higher education faculty/students, business partners, and informal education agencies) in STEM experiences in and out of the classroom;**
- **Assessment of integrative learning approaches;**
- **Information literacy skills in STEM;**
- **Processes of science and scientific inquiry;**
- **Mathematical problem-solving models;**
- **Communicating to a variety of audiences;**
- **Classroom management in project-based classrooms;**
- **Instructional strategies for the inclusive classroom;**
- **Computational thinking;**
- **Mathematical and technological modeling.**

Course #	Course Title	Institution	Semester Hr.	Year Completed

**Completion of a STEM field experience of a minimum of 30 contact hours that may be met through the following:**

- **Completing a STEM research experience;**
- **Participating in a STEM internship at a STEM business or informal education organization;**  
or
- **Leading a STEM extracurricular activity.**

Course #	Course Title	Institution	Semester Hr.	Year Completed