

Introduction to STEM

Course Overview and Syllabus

Grade level: 9–12

Prerequisite Courses: None

Credits: 0.5

Course Description

This semester-long course introduces students to the four areas of Science, Technology, Engineering, and Mathematics through an interdisciplinary approach that will increase awareness, build knowledge, develop problem solving skills, and potentially awaken an interest in pursuing a career in STEM. Students are introduced to the history, fundamental principles, applications, processes, and concepts of STEM. Students are exposed to several computer applications used to analyze and present technical or scientific information. Finally, students explore the kinds of strategies frequently used to solve problems in these disciplines. Throughout the course, students discover their strengths through practical applications and awareness of the various STEM careers.

Course Objectives

Throughout the course, you will meet the following goals:

- Learn the history and importance of STEM education in the United States
- Examine qualities of STEM students using self-assessment and career interest inventory instruments
- Explore traditional and non-traditional STEM careers
- Learn about tools that can be used to plan and manage STEM projects
- Discover how the STEM field utilizes images to communicate and implement data, from animation and gaming, to medical imaging, to aerospace engineering
- Discuss the history of measurement and its significance in STEM
- Investigate how STEM careers leverage the scientific method, problem-solving, critical thinking, and creative thinking
- Evaluate how STEM influences politics, sports, art, music, fashion, and law enforcement fields
- Review the responsibilities and requirements for various STEM careers

Student Expectations

This course requires the same level of commitment from you as a traditional classroom course. Throughout the course, you are expected to spend approximately 5–7 hours per week online on:

- Interactive lessons that include a mixture of videos, readings, and tasks
- Assignments in which you apply and extend learning in each lesson
- Assessments, including quizzes, tests, and cumulative exams

Communication

Your teacher will communicate with you regularly through discussions, email, chat, and system announcements. You will also communicate with classmates, either via online tools or face to face, as you collaborate on projects, ask and answer questions in your peer group, and develop your speaking and listening skills.

Grading Policy

You will be graded on the work you do online and the work you submit electronically to your teacher. The weighting for each category of graded activity is listed below.

Grading Category	Weight
Lesson Quizzes	20%
Unit Tests	20%
Cumulative Exams	20%
Assignments	10%
Projects	30%
Additional	0%

Scope and Sequence

When you log into Edgenuity, you can view the entire course map—an interactive scope and sequence of all topics you will study. The units of study are summarized below:

- Unit 1:** On Whose Shoulders Are We Standing?
- Unit 2:** A Picture is Worth a Thousand Words
- Unit 3:** How Much is Enough?
- Unit 4:** How to Be a Detective
- Unit 5:** Stem is Everywhere