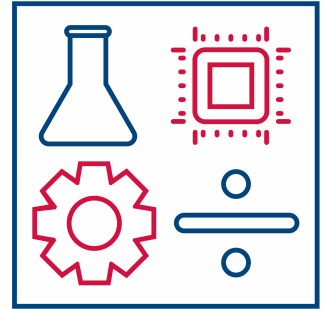


# Science, Technology, Engineering, and Mathematics (S.T.E.M.)

The S.T.E.M. pathway focuses on the role of the physical sciences, technology and the spirit of human innovation in solving global problems and protecting and improving our daily lives through the application of technology and creative thinking. Scientific inquiry, critical thinking, logic, and computational skill development are at the core of this cluster. Students completing a major in this pathway will be prepared to work in growing and in demand fields.



## \* Majors and Concentrations

- Advanced Manufacturing Sciences
  - Aerospace
  - Industrial Design
  - Mechanical Engineering Technology
- Applied Geology
- Aviation and Aerospace Science
  - Aerospace Operations
  - Professional Flight Officer
  - Air Traffic Collegiate Training Initiative
- Biochemistry
- Biology (BA/BS)
  - Secondary Education - Science Licensure
- Chemistry (BA/BS/BS-ACS)
  - Secondary Education - Science Licensure
- Civil Engineering Technology
  - Structures
  - Construction
- Computer Engineering
- Computer Information Systems
  - Application Development
  - Business Analytics
  - Database Development and Administration
  - Information Security
  - Network Systems and Administration
  - Web Development and Administration
- Computer Science
- Cybersecurity
- Electrical Engineering Technology
- Environmental Engineering
- Environmental Science
  - Secondary Education - Science Licensure
- Geography
- Health Care Information Systems
- Individualized Degree Program
- Industrial Design
  - Secondary Education - Mathematics Licensure
- Mathematics
  - Secondary Education - Mathematics Licensure
- Mechanical Engineering Technology
  - Manufacturing
  - Mechanical
- Meteorology
  - Applied Meteorology
  - Professional Meteorology
- Physics (BA/BS)
  - Secondary Education - Science Licensure
- Psychology
- Statistical Science
- Sustainable Systems Engineering

## \* Exercise: Identifying Interest Areas

*Using the list of majors and concentrations above try to identify 3 to 5 majors you'd like to explore:*

- Circle the majors in this pathway that (at first glance) sound the most appealing to you.
- Cross out the majors that you have no interest in at all.
- Are there any majors or concentrations that you haven't circled or crossed out? Are there any majors that you'd like to learn more about in order to make a decision? Put a star next to those and let your Exploratory Advisor know about these majors.

# Integrating General Studies and Exploratory Courses

Science, Technology, Engineering, & Mathematics Major Exploration Guide

Taking a mix of General Studies courses and exploratory courses (also referred to as “gateway courses” is a great way to explore your options for a major (and even a minor!). The University Catalog’s [Academic Program outlines](#) show the required courses for each major, including recommended or required courses that also fulfill General Studies requirements.

A complete list of General Studies options is available on the [General Studies website](#) and detailed [course descriptions](#) are available in the online University Catalog. Working with an Exploratory Advisor can help you with developing a strategy for using these requirements to explore your options in a way that is meaningful to you while keeping you on track to graduate within a reasonable time frame.

## Recommended Courses

### General Studies Courses

- ARTE 2060 The Arts and Creative Thinking\*
- AST 1040 Introduction to Astronomy - Solar System
- AST 1050 Introduction to Astronomy - Stars and Galaxies
- BIO 1080 General Biology I
- BIO 1090 General Biology I Lab
- CHE 1800 General Chemistry I\*
- CHE 1801 General Chemistry I Lab\*
- CET/EET/MET 1040 Introduction to Engineering
- CET 3120 Engineering Economy
- ENV 1200 Introduction to Environmental Science
- GEG 1100 Introduction to Physical Geography
- GEL 1010 Physical Geology
- MTR 1400 Weather and Climate
- PHI 1060 Ethics in Medicine and Science
- PHY 1000 Intro to Physics
- PHY 2311 General Physics I\*
- PHY 2321 General Physics I Lab\*
- PSY 1001 Introduction to Psychology
- AES 1400 Aviation Weather
- AES 1710 Instrument Flight Simulation I
- CET 1100 Intro to Civil Engineering Technology
- CET 1215 Engineering Graphics
- CIS 1010 Introduction to Computers
- CIS 2010 Foundations of Information Systems\*
- CS 1030 Computer Science Principles
- CS 1050 Computer Science I\*
- CPE 1040 Introduction to Engineering
- CYB 2001 Cyber Laws and Regulations\*
- CSS 2751 Principles of Cybersecurity\*
- EET 1001 Electronics: An Introduction
- EET 1140 Circuits I\*
- EVE 1215 Engineering Graphics: Solid Modeling
- GEL 1030 Historical Geology\*
- GIS 1220 Introduction to Geospatial Sciences
- IND 1000 Intro to Industrial Design
- IND 1100 Materials I: Materials and Fabrication
- IND 1300 Materials II: Design and Application
- IND 1450 Technical Drawing & CAD
- IND 1470 Design Drawing Techniques
- MET 1000 Intro to Mechanical Engineering Technology
- MTH 1410 Calculus I\*
- PSY 2001 Careers and Professional Development in PSY\*
- SSE 1040 Life Cycle and Systems Engineering
- SSE 1215 Engineering Graphics: Solid Modeling
- SSE 2000 Engineering Safety & Quality Assurance

**Gateway Courses- these are not General Studies courses, but they are great exploratory options for programs in this pathway**

- AMS 1010 Survey of Advanced Manufacturing and Workplace Preparation
- ARCH 2001 Introduction to Architecture\*
- AST 1052 General Astronomy I
- AES 1040 Introduction to Unmanned Aircraft Systems
- AES 1050 Introduction to Space
- AES 1100 Aviation Fundamentals

\* Has a required prerequisite class. Check with your Exploratory Advisor for guidance on these courses.