

STEM TECHNOLOGY A.A.S. (CAREER)

Program website ([https://www.frederick.edu/programs/science,-technology,-engineering,-and-math-\(stem\)/stem.aspx](https://www.frederick.edu/programs/science,-technology,-engineering,-and-math-(stem)/stem.aspx))

Program Description

Prepares students for a career field in STEM Technology.

Students can choose to major in the STEM Technology A.A.S. to explore various disciplines including biological sciences, biotechnology, building trades, business management, computer aided design, construction management, chemistry, computer & information sciences, engineering, film & video production, graphic design, mathematics, music, physical science, and physics.

Students also have the option to focus on a specific discipline within the STEM Technology A.A.S. by selecting an Area of Concentration in Audio Production Technology, Computer Aided Design Technology, Computer Aided Design (Engineering) Technology, Construction Management Technology, Cybersecurity, Information Technology Specialist, Network Engineering, or Software Engineering.

Students should meet with an advisor to develop a plan appropriate for their transfer and career interests. To investigate potential careers related to this degree program, visit the Career Communities (<https://www.frederick.edu/student-resources/career-services/career-communities.aspx>) page.

Program Learning Outcomes

- Apply technology tools responsibly, appropriately, and effectively.
- Evaluate physical, mathematical, and scientific concepts in career fields.
- Employ contemporary and emerging technology resources in diverse and dynamic environments.
- Analyze technical requirements to determine and recommend resource requirements for organizations.
- Resolve real-world problems/issues utilizing engineered techniques and approaches.
- Apply engineering design processes in developing solutions for business needs.

Program Requirements

- Students must complete their credit **English and Mathematics** within the first 24 credits.
- One course must meet the cultural competence graduation requirement (<https://frederick-public.courseleaf.com/general-education-core/#cultural>).
- **CORE: The General Education CORE** is that foundation of the higher education curriculum providing a coherent intellectual experience for all students. Students should check with an advisor or the transfer institution (ARTSYS) before selecting General Education CORE requirements. <http://artsys.usmd.edu/>
- In some General Education categories (Mathematics, Biological & Physical Sciences), a 4-credit course selected from the GenEd course list will satisfy the requirement in place of a 3-credit course. Students should check with an advisor before selecting these courses.

- For the Physical Education, Health, or Nutrition requirement, a 3-credit PHED, HLTH, or NUTR course may satisfy the requirement in place of a 1-credit course. Students should check with an advisor before selecting this course.
- Students must earn a grade of "C" or better in ENGL 101 English Composition.
- Students must complete a minimum of nine credits at the 200-level.

Code	Title	Credits
English		
ENGL 101	English Composition	3
Mathematics		
Mathematics Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#mathematics)		3
Social & Behavioral Sciences		
Social & Behavioral Sciences Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#social-behavioral)		3
Arts & Humanities		
Arts Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#arts)		3
Humanities Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#humanities)		3
Communication Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#communication)		3
Biological & Physical Sciences		
Biological & Physical Sciences Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#biological-physical)		3
Physical Education, Health, or Nutrition Requirement		
Select one PHED, HLTH, or NUTR course		1
Electives		
Select 38 credits in consultation with an advisor to maximize transfer of coursework ¹		38
CMSC 130	Programming Fundamentals (recommended)	
Total Credits		60

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Take a minimum of 24 credits of STEM Technology electives from any of the disciplines listed below. A minimum of 12 credits must be in the same discipline.

- Biological Sciences (BSCI)
- Biotechnology (BIOT)
- Building Trades Technology (BLDT)
- Business Management (BMGT)
- Computer Aided Design Technology (CADT)
- Construction Management Technology (CMTE)
- Chemistry (CHEM)
- Computer Science (CMSC)
- Cybersecurity and Information Technology (CMIS)
- Engineering (ENGR)
- Film & Video Production (FILM)
- Graphic Design (GRPH)
- Mathematics (MATH)
- Music (MUSC)
- Physical Science (PHSC)
- Physics (PHYS)

Students majoring in the Associate of Applied Science in STEM without an Area of Concentration should follow the curriculum outlined above and

will have 14 unrestricted elective credits. It is recommended that they take CMSC 130 Programming Fundamentals.

Students majoring in an Area of Concentration will follow the curriculum for their major:

- Audio Production Technology
- Computer Aided Design Technology
- Computer Aided Design (Engineering) Technology
- Construction Management Technology
- Cybersecurity
- Information Technology Specialist

Transfer Note

For more information on careers and transfer, contact the Career and Academic Planning Services office at 301.846.2471 or visit Transfer Services (<https://www.frederick.edu/student-resources/counseling-advising/transfer-services.aspx>).

Guided Pathway to Success (GPS)

Suggested schedules map your path to degree completion.

Students should meet with an advisor each semester to carefully select and sequence courses based on their specific academic goals and interests. Visit Jefferson Hall or call 301.846.2471 for advising.

Recommended First Semester		Credits
ENGL 101	English Composition	3
Mathematics Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#mathematics) ¹		3-4
Choose STEM electives in consultation with an advisor ²		9
CMSC 130	Programming Fundamentals (recommended)	
Credits		15-16
Recommended Second Semester		
Social & Behavioral Sciences Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#social-behavioral)		3
Biological & Physical Sciences Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#biological-physical)		3-4
Choose STEM electives in consultation with an advisor ²		9
Credits		15-16
Recommended Third Semester		
Arts Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#arts)		3
Humanities Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#humanities)		3
Choose STEM electives in consultation with an advisor ²		6
Choose an elective in consultation with an advisor		3
Credits		15
Recommended Fourth Semester		
Communication Elective (Gen Ed course list) (https://frederick-public.courseleaf.com/general-education-core/#communication)		3
Physical Education, Health, or Nutrition Requirement		1,3
Choose electives in consultation with an advisor		11
Credits		15-17
Total Credits		60-64

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Take this course within the first 24 credits.

Take a minimum of 24 credits of STEM Technology electives from any of the disciplines listed below. A minimum of 12 credits must be in the same discipline. It is imperative that students consult an advisor before registering to maximize transfer of coursework.
BSCI, BIOT, BLDT, BMGT, CADT, CMTE, CHEM, CMIS, CMSC, ENGR, FILM, GRPH, MATH, MUSC, PHSC, PHYS

Part-time Students

Part-time students should complete courses in the order listed on the pathway. Please contact program manager for questions about part-time status.

Students who take fewer than 15 credits each semester or who require developmental English or Math coursework will need additional semesters to complete their degrees. Summer term and January session classes may help students to make faster progress.

Pathway Legend

Milestone - courses with the Milestone notation should be taken within the recommend credit range to stay on track for program completion.

Fall, Spring, Summer - courses with a Fall, Spring, or Summer notation indicate the course is offered in the specified semester only.