

# COMPUTER AIDED DESIGN TECHNOLOGY AREA OF CONCENTRATION WITHIN STEM TECHNOLOGY A.A.S. (CAREER)

Program website (<https://www.frederick.edu/programs/information-technology/computer-aided-design.aspx>)

**Program Manager:** Construction & Applied Technologies Institute (CATI)  
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## Program Description

Provides students with a broad range of knowledge and skills required for success in a career as an architectural CAD drafter, designer, operator, or technician.

## Program Learning Outcomes

- Create two-dimensional production and architectural drawings using basic AutoCAD commands. Print/plot to scale using model and layout space. Use layers to organize and separate information.
- Create pictorial views and three dimensional drawings. Create multiview drawings from three dimensional models.
- Describe and recognize the basic features and uses of additional CAD software systems, including AutoDesk Architecture, Revit, Civil 3D, and Micro station.
- Create architectural sketches, drawings, and models.
- Prepare house plans in AutoCAD and plot drawings in paper space.
- Describe the basic properties and uses of materials used in the construction process and evaluate appropriate methods of installation of construction materials. Illustrate the testing methods used to evaluate the performance and installation of construction materials.
- Create and revise civil drawings.
- Demonstrate proficiency in selected elective areas of CAD and construction.
- Demonstrate awareness of general education concepts - writing, math, science, social science, communications, and PE/health.

## 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
<b>English</b>		
ENGL 101	English Composition	3
<b>Mathematics</b>		
Mathematics Elective (Gen Ed Course List) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#mathematics">https://frederick-public.courseleaf.com/general-education-core/#mathematics</a> ) - Recommended course(s) below:		3
MATH 145	College Algebra	
MATH 165	Precalculus	
<b>Social &amp; Behavioral Sciences</b>		
Social & Behavioral Sciences Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#social-behavioral">https://frederick-public.courseleaf.com/general-education-core/#social-behavioral</a> )		3
<b>Arts &amp; Humanities</b>		
Arts Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#arts">https://frederick-public.courseleaf.com/general-education-core/#arts</a> )		3
Humanities Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#humanities">https://frederick-public.courseleaf.com/general-education-core/#humanities</a> ) - Recommended course(s) below:		3
PHIL 208	Business Ethics	
Communication Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#communication">https://frederick-public.courseleaf.com/general-education-core/#communication</a> ) - Recommended course(s) below:		3
COMM 107	Career Communication	
<b>Biological &amp; Physical Sciences</b>		
Biological & Physical Sciences Elective (Gen Ed course list) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#biological-physical">https://frederick-public.courseleaf.com/general-education-core/#biological-physical</a> ) - Recommended course(s) below:		3
PHYS 101	Survey of Physics (Spring)	
PHSC 101	Survey of Physical Science	
PHSC 121	Physical Geology (Fall)	
<b>Physical Education, Health, or Nutrition Requirement</b>		
Select one PHED, HLTH, or NUTR course		1
<b>Concentration Courses</b>		
CADT 101	AutoCAD I	3
CADT 102	AutoCAD II	3
CADT 130	Revit (BIM)	3
CADT 150	Architectural Drawing and Design	3
CADT 210	Residential Architecture I	4
CADT 245	Civil Drafting with CAD	3
<b>Electives</b>		
Select any of the following:		19
Any BLDT, CADT, CMIS, CMTE, ENGR, GISA, MATH, or SPAN course		
INTR 103	Internship	
Total Credits		60

## 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) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#mathematics">https://frederick-public.courseleaf.com/general-education-core/#mathematics</a> ) - Recommended course(s) below:		3
MATH 145	College Algebra	
MATH 165	Precalculus	
CADT 101	AutoCAD I	3
CADT 102	AutoCAD II	3
Any BLDT, CADT, CMIS, CMTE, MATH, GISA, SPAN or ENGR Course		3
Credits		15
Recommended Second Semester		Credits
Social & Behavioral Sciences Elective (Gen Ed Course List) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#social-behavioral">https://frederick-public.courseleaf.com/general-education-core/#social-behavioral</a> )		3
Communication Elective (Gen Ed Course List) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#communication">https://frederick-public.courseleaf.com/general-education-core/#communication</a> ) - Recommended course(s) below:		3
COMM 107	Career Communication	
CADT 130	Revit (BIM)	3
CADT 150	Architectural Drawing and Design	3
Physical Education, Health, or Nutrition Requirement		1
Credits		13
Recommended Third Semester		Credits
Biological & Physical Sciences Elective (Gen Ed Course List) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#biological-physical">https://frederick-public.courseleaf.com/general-education-core/#biological-physical</a> ) - Recommended course(s) below:		3-4
PHSC 101	Survey of Physical Science	
PHYS 101	Survey of Physics (Spring)	
PHSC 121	Physical Geology (Fall)	
CADT 210	Residential Architecture I	4
CADT 245	Civil Drafting with CAD	3
Any BLDT, CADT, CMIS, CMTE, MATH, GISA, SPAN or ENGR Course		6
Credits		16-17
Recommended Fourth Semester		Credits
Humanities Elective (Gen Ed Course List) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#humanities">https://frederick-public.courseleaf.com/general-education-core/#humanities</a> ) - Recommended course(s) below:		3
PHIL 208	Business Ethics	
Arts Elective (Gen Ed Course List) ( <a href="https://frederick-public.courseleaf.com/general-education-core/#arts">https://frederick-public.courseleaf.com/general-education-core/#arts</a> )		3
Any BLDT, CADT, CMIS, CMTE, MATH, GISA, SPAN or ENGR Course or Internship		10
Credits		16
Total Credits		60-61

## 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.