COMPUTER SCIENCE, LIBERAL ARTS (AS)

Degree: Associate of Science
Major: Liberal Arts
Emphasis: Computer Science
Program Code: 2421

Computer Science is the study of computers and computational systems. It is a broad field which includes everything from the programming languages that make up software to how software interacts with hardware to how well software is developed and designed. The Computer Science Associates Degree includes courses in web page design, various programming languages, data structures and computer architecture.
While the degree prepares students to complete a BS in Computer Science (which is strongly recommended), employment opportunities are open to the successful graduate, including positions such as web development, computer operators, and/or technical support positions.

For more information on what you can do with this major, visit Career Services' What to Do with a Major? resource or the CMU Computer Science website.

All CMU/CMU Tech associate graduates are expected to demonstrate proficiency in specialized knowledge/applied learning, quantitative fluency, communication fluency, critical thinking, personal and social responsibility, and information literacy. In addition to these campus#wide student learning outcomes, graduates of this major will be able to:

1. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline. (Specialized Knowledge, Quantitative Fluency)
2. Evaluate and apply relevant information to communicate effectively in a variety of professional contexts. (Information Literacy, Communication Fluency)
3. Apply computer science theory and software development fundamentals to produce computing-based solutions. (Specialized Knowledge)

Requirements

Each section below contains details about the requirements for this program. Select a header to expand the information/requirements for that particular section of the program's requirements.

To print or save an overview of this program's information, including the program description, learning outcomes, requirements, suggested course sequencing (if applicable), and advising and graduation information, scroll to the bottom of the left-hand navigation menu and select "Print Options." This will give you the options to either "Send Page to Printer" or "Download PDF of This Page." The "Download PDF of This Page" option prepares a much more concise presentation of all program information. The PDF is also printable and may be preferable due to its brevity.

Institutional Degree Requirements

The following institutional degree requirements apply to all CMU or CMU Tech Associate of Science (AS) degrees. Specific programs may have different requirements that must be met in addition to institutional requirements.

- 60 semester hours total.
- Students must complete a minimum of 15 of the final 30 semester hours of credit at CMU/CMU Tech.
- 2.00 cumulative GPA or higher in all CMU/CMU Tech coursework.
- A grade of "C" or higher must be earned in all Essential Learning courses in order to be accepted for transfer under the Colorado Core Transfer Consortium General Education curriculum or gtPathways, Colorado's guaranteed transfer program.
- A course may only be used to fulfill one requirement for each degree/certificate.
- No more than six semester hours of independent study courses can be used toward the degree.
- Non-traditional credit, such as advanced placement, credit by examination, and credit for prior learning, is limited by the institutional residency requirements for an associate of science degree. Cooperative education and internship courses may be taken multiple times, up to a maximum of 15 credit hours.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- Capstone exit assessment/projects (e.g., Major Field Achievement Test) requirements are identified under Program-Specific Degree Requirements.
- The Catalog Year determines which program sheet and degree requirements a student must fulfill in order to graduate. Visit with your advisor or academic department to determine which catalog year and program requirements you should follow.
- See "Requirements for Undergraduate Degrees and Certificates" in the catalog for a complete list of graduation requirements.

Specific to this program:

- 2.50 cumulative GPA or higher in all CMU coursework and in coursework toward major content area.

Essential Learning Requirements

(31 semester hours)

See the current catalog for a list of courses that fulfill the requirements below. If a course is an Essential Learning option and a requirement for your major, you must use it to fulfill the major requirement and make a different selection for the Essential Learning requirement.

Code	Title	Semester Credit Hours
English [1]		
ENGL 111	English Composition I-GTCO1	3
ENGL 112	English Composition II-GTCO2	3
Mathematics [1]		
MATH 119	Precalculus Mathematics-GTMA1 [2,3]	3
History		
Select one History course		3
Humanities		
Select one Humanities course		3
Social and Behavioral Sciences		
Select one Social and Behavioral Sciences course		3
Select one Social and Behavioral Sciences course		3
Fine Arts		

Select one Fine Arts course	3
Natural Sciences [4]	
Select one Natural Sciences course	3
Select one Natural Sciences course with a lab	4
Total Semester Credit Hours	**31**

[1] Must receive a grade of "C" or better and must be complete by the time the student has 60 semester hours.

[2] MATH 119 is a 5 semester credit hour course. 3 credits apply to the Essential Learning requirements and 2 credits apply to elective credit.

[3] May also satisfy this requirement by completing both MATH 119A: Algebra for Calculus (4 credits) and MATH 119B: Trigonometry for Calculus (3 credits). MATH 151 (or MATH 135) and MATH 152 (or MATH 136) strongly recommended for those who plan to go on to a BS Computer Science degree.

[4] 7 semester hours, one course must include a lab.

Other Lower Division Requirements

Code	Title	Semester Credit Hours
Wellness Requirement		
KINE 100	Health and Wellness	1
Select one Activity course		1
Total Semester Credit Hours		**2**

Program Specific Degree Requirements

(24 semester hours)

Required for this degree:

- ~~2.50 cumulative GPA or higher in all CMU coursework and in coursework toward major content area.~~

Code	Title	Semester Credit Hours
Core Classes		
CSCI 106	Front End Development	3
CSCI 110	Beginning Programming with Python	3
CSCI 111	CS1: Foundations of Computer Science	3
CSCI 112	CS2: Data Structures	3
CSCI 206	Progressive Web App Development	3
CSCI 210	Cloud and DevOps Foundations with Linux	3
CSCI 241	Computer Architecture and Assembly Language	3
CSCI 260	Introduction to Database	3
Total Semester Credit Hours		**24**

General Electives

~~(3 Semester Hours)~~

~~Recommended: 200-level or higher classes with a CSCI prefix or any of the following MATH courses: MATH 151, MATH 135, MATH 152, or MATH 136.~~

Code	Title	Semester Credit Hours
MATH 119	Precalculus Mathematics-GTMA1 [1]	2
Elective		1

[1] MATH 151 (or MATH 135) and MATH 152 (or MATH 136) are strongly recommended for those who plan to pursue a BS Computer Science degree.

Suggested Course Plan

First Year		
Fall Semester		**Semester Credit Hours**
CSCI 110	Beginning Programming with Python	3
ENGL 111	English Composition I-GTCO1	3
MATH 119	Precalculus Mathematics-GTMA1	5
KINE 100	Health and Wellness	1
Essential Learning - Social and Behavioral Sciences		3
	Semester Credit Hours	**15**
Spring Semester		
CSCI 111	CS1: Foundations of Computer Science	3
ENGL 112	English Composition II-GTCO2	3
CSCI 210	Cloud and DevOps Foundations with Linux	3
Essential Learning - Fine Arts		3
Essential Learning - Social and Behavioral Sciences		3
	Semester Credit Hours	**15**
Second Year		
Fall Semester		
CSCI 106	Front End Development	3
CSCI 112	CS2: Data Structures	3
CSCI 260	Introduction to Database	3
Essential Learning - Natural Science with lab		4
KINA - Activitiy Course		1
Elective		1
	Semester Credit Hours	**15**
Spring Semester		
CSCI 241	Computer Architecture and Assembly Language	3
CSCI 206	Progressive Web App Development	3
Essential Learning - History		3
Essential Learning - Natural Science without lab		3
Essential Learning - Humanities		3
	Semester Credit Hours	**15**
	Total Semester Credit Hours	**60**

Students who intend to continue with Colorado Mesa University should take ESSL 290 and ESSL 200 during the final semester of their Associate of Science work.

Advising and Graduation

Advising Process and DegreeWorks

Documentation on the pages related to this program is intended for informational purposes to help determine what courses and associated requirements are needed to earn a degree. The suggested course sequencing outlines how students could finish degree requirements. Some courses are critical to complete in specific semesters, while others may be moved around. Meeting with an academic advisor is essential in planning courses and altering the suggested course sequencing. It

is ultimately the student's responsibility to understand and fulfill the requirements for their intended degree(s).

DegreeWorks is an online degree audit tool available in MAVzone. It is the official record used by the Registrar's Office to evaluate progress towards a degree and determine eligibility for graduation. Students are responsible for reviewing their DegreeWorks audit on a regular basis and should discuss questions or concerns with their advisor or academic department head. Discrepancies in requirements should be reported to the Registrar's Office.

Graduation Process

Students must complete the following in the first two months of the semester prior to completing their degree requirements:

- Review their DegreeWorks audit and create a plan that outlines how unmet requirements will be met in the final semester.
- Meet with their advisor and modify their plan as needed. The advisor must approve the final plan.
- Submit the "Intent to Graduate" form to the Registrar's Office to officially declare the intended graduation date and commencement ceremony plans.
- Register for all needed courses and complete all requirements for each degree sought.

Submission deadlines and commencement details can be found on the Graduation web page.

If a student's petition for graduation is denied, it will be their responsibility to apply for graduation in a subsequent semester. A student's "Intent to Graduate" does not automatically move to a later graduation date.