



## 2017-2018 PROGRAM REQUIREMENTS Minor: Geographic Information Science and Technology

### **About This Minor. . .**

The Physical and Environmental Sciences (PES) Department at Colorado Mesa University offers a minor in Geographic Information Science and Technology. The courses are open to all students interested in broadening their knowledge and enhancing job-related skills in a rapidly expanding market of computer-based technology. The multidisciplinary nature of the Geographic Information science and technology allows students from a wide variety of fields to participate in this exciting program.

Geographic Information Science and Technology includes Geographic Information Systems, Global Positioning Systems, and Remote Sensing. A geographic information system (GIS) is a computer-based tool for mapping and analyzing geospatial data. GIS technology is a subset of information systems where the databases consists of features, activities, or events that are definable in space as points, lines, or areas. GPS (Global Positioning System) is a satellite system that allows users to collect precise geographic data for use in mapping. Remote sensing refers to any technique whereby information about objects and the environment is obtained from a distance, such as from aircrafts or satellites. Remote sensing often permits us to greatly expand our spectral view of the earth and “see” the world much more clearly than we can with the unaided eye.

Demand is strong for people who are trained in Geographic Information Science and Technology. This minor will assist students in securing jobs in this rapidly growing field. GIS/GPS can be used for cartography, business, biology, geology, environmental science, history, archeology, and criminal justice.

For more information on what you can do with this major, go to <http://www.coloradomesa.edu/gist/index.html>

### **Advising Process and DegreeWorks**

This document is intended for informational purposes to help determine what courses and associated requirements are needed to earn a minor. Meeting with an academic advisor is essential in planning courses and developing a suggested course sequencing. It is ultimately the student’s responsibility to understand and fulfil the requirements for her/his intended minor.

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 minor. 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 for the minor. Discrepancies in requirements should be reported to the Registrar’s Office.

### **Graduation Process**

A minor cannot be awarded by itself. It must be combined with a baccalaureate degree outside the major field of study. Students should follow the graduation process outlined for the baccalaureate degree and list their majors and minors on the “Intent to Graduate” form.

If a student’s petition for graduation is denied, it will be her/his responsibility to consult the Registrar’s Office regarding next steps.

### **INSTITUTIONAL MINOR REQUIREMENTS**

The following institutional requirements apply to all CMU minors. Specific programs may have different requirements that must be met in addition to institutional requirements.

- A minor consists of 15-24 semester hours. There may be prerequisites required for the minor which will increase the total number of credit hours for a student who has not already taken those prerequisites.
- Courses taken to satisfy Essential Learning, major requirements, or electives **can** be counted toward the minor if applicable.
- At least 33 percent of the credit hours required for the minor must be in courses numbered 300 or above.
- At least 25 percent of the classes must be taken at CMU.
- 2.00 cumulative GPA or higher for the courses used for the minor.
- A minor is not a degree by itself and must be earned at the same time as a baccalaureate degree.
- A minor must be outside the major field of study.
- A student may earn up to five minors with any baccalaureate degree at CMU.
- 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 sheet you should follow.
- See "Requirements for Undergraduate Degrees and Certificates" in the catalog for a complete list of graduation requirements.

### **PROGRAM-SPECIFIC MINOR REQUIREMENTS**

- 16 semester hours for the Minor in Geographic Information Science and Technology
- 2.00 cumulative GPA or higher in the minor is required

### **REQUIRED COURSES FOR THE GEOGRAPHIC INFORMATION SCIENCE AND TECHNOLOGY MINOR** (16 semester hours)

- One of the following courses:
  - GIST 305 – Cartography for GIS (1)
  - GEOG 131 – Introduction to Cartography (3)
- GIST 332 – Introduction to GIS (2)
- GIST 332L– Introduction to GIS Laboratory (1)
- GIST 442 - GIS Data Management and Editing (2)
- GIST 442L - GIS Data Management and Editing Laboratory (1)
- GIST 432 - Spatial Analysis and Modeling in GIS (2)
- GIST 432 - Spatial Analysis and Modeling in GIS Laboratory (1)

Choose a minimum of six semester hours from the following:

- CIVE 212 - Introduction to Geomatics (3)
- CSCI 110 - Beginning Programming (3) (must be Python section)
- GEOL 321 – Introduction to Remote Sensing (2)
- GEOL 321L – Introduction to Remote Sensing Laboratory (1)
- GEOL 375 – Global Positioning Systems for GIS (2)
- GEOL 375L - Global Positioning Systems for GIS Laboratory (1)
- XXXX 395 - Independent Study (must have a GIS focus and be approved by the GIS program advisor)
- XXXX 495 - Independent Study (must have a GIS focus and be approved by the GIS program advisor)
- XXXX 497 - Structured Research (must have a GIS focus and be approved by the GIS program advisor)