GEOGRAPHIC INFORMATION SYSTEMS - ONE-YEAR CERTIFICATE OF COMPLETION (CC1)

Description

The Geographic Information Systems One-Year Certificate of Completion is designed for students who have or who are working on a two- or four-year degree and want to acquire specific geographic information systems (GIS) skills.

Geographic information systems are designed to work with data referenced by spatial or geographic coordinates. GIS is a database with capabilities for spatially referenced data, a set of operations for working with and analyzing the data, and a cartographic system for designing maps.

Graduates work in natural resources, government, planning, utilities, real estate, education, retail, businesses, banking, insurance, and web mapping. Careers typically include positions such as GIS technician, analyst, project manager, computer programmer, database administrator, systems administrator, cartographer, applications developer, and related managerial and administrative roles.

Program Learning Outcomes

Upon successful completion of the certificate, students will be able to:

1. Apply foundational theories of geospatial science to real-world industry applications.
2. Use industry-standard GIS software proficiently.
3. Explain geospatial ideas and outcomes to stakeholders, including non-professionals.
4. Create procedures for using GIS and modeling data.
5. Use cartographic design principles to communicate effectively with maps.

Entrance Requirements

Academic Entrance Requirements

Recommended:

- Two-year, four-year, or graduate degree from accredited institution
- Completion of WR 065 Rhetoric and Critical Thinking II or minimum placement Wr/Comm Level 7
- MTH 060 Beginning Algebra or higher or minimum placement Math Level 10
- Completion of computer competency (either IC3 exam or CIS 120 Computer Concepts)

Additional Costs (Beyond Standard Tuition/Fees and Textbooks)

Material Costs

Required:

- Materials (USB drive, maps, assorted office supplies): $100

Recommended:

- A desktop or laptop computer capable of running the GIS software: approximately $1,200
- Most courses use GIS software that is compatible only with Microsoft Windows, and there is no MacOS version. Contact program instructor for specifics.

Course Requirements

Course	Title	Credits
Core Courses		
GEOG 101	Introduction to Geospatial Science & GIS	4
GEOG 211	Cartography	4
GEOG 265	Geographic Information Systems	4
GEOG 266	ArcGIS	4
GEOG 267	Geodatabase Design	4
GEOG 273	Spatial Data Collection	4
GEOG 275	GIS Capstone	4
GEOG 285	Data Conversion and Documentation	4
GEOG 286	Remote Sensing	4
GEOG 287	Spatial Analysis	4
Other Required Courses		
Choose one course from the following:		4
MTH 102	Applied Technical Mathematics	
Or choose one course from the foundational requirements math list		
Choose one course from the following:		3-4
BA 178	Customer Service	
BA 285	Business Human Relations	
COMM 115	Introduction to Intercultural Communication	
COMM 218Z	Interpersonal Communication	
COMM 219	Small Group Communication	
WR 121Z	Composition I	4
Total Credits		**51-52**

Advising Notes

Most GIS courses are offered once per year beginning in Fall term. Students may take an introductory GIS course (e.g., GEOG 101 Introduction to Geospatial Science & GIS or GEOG 265 Geographic Information Systems) or non-program support and/or selected GIS courses if they begin in Winter, Spring, or Summer term or if they need to build skills related to prerequisites. GIS courses are offered each term and must be taken together and sequentially. It is recommended that students avoid working more than 10 hours per week during any term due to heavy course load.

This one-year certificate is designed for students planning to enter their chosen career upon graduation. Often only selected credits are considered transferable to public or private baccalaureate institutions.

Performance Standards

- Academic Requirements:
  - Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.

- All courses in the program must be completed with a grade of C or higher.

Sample Plan

First Year		
Fall		**Credits**
GEOG 101	Introduction to Geospatial Science & GIS	4
GEOG 265	Geographic Information Systems	4
GEOG 266	ArcGIS	4
GEOG 273	Spatial Data Collection	4
Choose one course from the following:		4
MTH 102	Applied Technical Mathematics	
Or choose a course from the foundational requirements math list		
	Credits	**20**
Winter		
GEOG 211	Cartography	4
GEOG 285	Data Conversion and Documentation	4
GEOG 287	Spatial Analysis	4
WR 121Z	Composition I	4
	Credits	**16**
Spring		
GEOG 267	Geodatabase Design	4
GEOG 275	GIS Capstone	4
GEOG 286	Remote Sensing	4
Choose one course from the following:		3-4
BA 178	Customer Service	
BA 285	Business Human Relations	
COMM 115	Introduction to Intercultural Communication	
COMM 218Z	Interpersonal Communication	
COMM 219	Small Group Communication	
	Credits	**15-16**
	Total Credits	**51-52**