

**Curriculum requirements
Geographic Information Systems (GIS) Certificate.**

Core courses:

GEOG 120-Introduction to Geographic Information Systems	3
GEOG 220-GIS Database and Design	3
GEOG 224 Applications in Geographic Information Systems	3
GEOG 228 Administrative Issues in GIS	3
GEOG 230 Internship in cooperating GIS facility <i>A student currently employed in a GIS facility may take the 1-hour option. All others must complete the 3-hour internship.</i>	1-3
ENGL 101 (required)	3

One of the following computer science courses:

CSIS 128-Web Development CSIS 143-Relational Database Design for Oracle CSIS 144-Introduction to SQL with Oracle CSIS 177-Access	3
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One of the following geography courses:

GEOG 105 - World Geography GEOG 113 - Cultural Geography GEOG 114 - Introduction to Geography GEOG 207 - Geography of the United States and Canada GEOG 210 - Economic Geography	3
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One of the following:

GEOL 101 - Physical Geology GEOL 103 - Environmental Geology GEOG 104 - Physical Geography	5
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Sub-Total

27-29

Two electives from the following courses:

- BIOL 101-General Biology
- BIOL 104-General Botany
- BIOL 106-General Zoology
- BIOL 117-Life and the Environment

- BSAD 104-Principles of Advertising
- BSAD 205-Business Management
- BSAD 210-Logistics Management
- BSAD 211-Operations Management
- BSAD 212- Transportation Operations and Management
- BSAD 213-Warehouse and Distribution Centers

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<i>Two electives from the following courses (continued)</i>	
<p>Any CSIS course listed below NOT taken as a core course:</p> <p>CSIS 128-Web Development CSIS 143-Relational Database Design for Oracle CSIS 144-Introduction to SQL with Oracle CSIS 177-Access</p> <p>CRJU 101-Introduction to Criminal Justice CRJU 112-Traffic Control and Investigation CRJU 132-Community Relations CRJU 141-Vice Control</p> <p>DRAF 107-Computer Aided Drafting for Technologies DRAF 152-Engineering Graphics and CADD I</p> <p>ECON 110-Introduction to Economics ECON 210-Macroeconomics ECON 211-Principles of Economics II-Microeconomics</p> <p>Any GEOG course listed below NOT taken as a core course:</p> <p>GEOG 104- Physical Geography GEOG 105-World geography GEOG 110-Meteorology GEOG 113-Cultural Geography GEOG 114-Introduction to Geography GEOG 207-Geography of the United States and Canada GEOG 210-Economic Geography</p> <p>Any GEOL course listed below NOT taken as a core course:</p> <p>GEOL 101-Physical Geology GEOL 103-Environmental Geology</p> <p>SRVY 135-Elementary Surveying SRVY 136-Analysis of Survey Measurements SRVY 137-Subdivision Planning and Layout</p>	
Sub-Total Electives	6-10
Total	33-39