

## Certificate in Geographic Information Systems (GIS) and Cartography

### Program Certificate, 15 hrs

#### Required Core (9 hrs)

GEOG 3310	Geographic Information Systems (GIS) I (3)
[OR	<i>GEOG 6286 (970:286) Studies in: GIS</i>
GEOG 4320/5320	Geographic Information Systems (GIS) II (3)
GEOG 4360/5360	Thematic Cartography (3)

#### Electives (6 hrs)

GEOG 4310/5310	GIS Applications: (Variable Topic) (3)
GEOG 4340/5340	Spatial Data Analysis (3)
GEOG 4350/5350	Global Positioning System (GPS) Field Survey Methods (3)
GEOG 4370/5370	Remote Sensing of the Environment (3)
GEOG 4380/5380	Satellite Image Processing (3)
GEOG 4390/5390	GIS Programming (3)

The Certificate in Geographic Information Systems (GIS) and Cartography is designed to give the student a substantial background in the fields of geographic information systems and digital cartography. Students completing the program will be familiar with the terminology, techniques and theory of GIS and cartography. Hands-on computer experience is a major feature of the courses. The program complements majors in disciplines other than geography while increasing the geography major's preparation for the job market.

May be taken at graduate and undergraduate levels. **The student must earn a grade point average of at least 3.00 in the courses taken for the certificate.** It is the responsibility of the student to notify the Head of the Department of Geography during or immediately after the semester in which the course requirements will be or have been completed. Up to 3 credits can be transferred from another institution. For graduate credit GEOG 3310 can be substituted with GEOG 6286 Studies in GIS.