

**Department of Geography
University of Maryland, College Park**

The Geographic Information Science Minor

The Minor Program in Geographic Information Science is designed to give students the technical skills needed to acquire, manage and analyze geographic data. Almost everything we do involves geographic information: deciding where to live and travel, environmental monitoring, and urban planning. Influenced by computer technology, the academic disciplines of geographic information science such as remote sensing, Geographic Information Systems (GIS) and computer cartography have evolved dramatically in the past few decades. The fields of remote sensing, the science of obtaining geographic information from aircraft and satellites, and GIS, a computer technology that manages and analyzes different forms of digital geographic data, have been growing at an extraordinary rate. Computer cartography has revolutionized traditional cartography to vastly improve map making and visualization of geographic information in a multimedia environment. Students in the minor program will receive extensive training in digital processing of remote sensing observations and cartographic vector data, spatial analysis, and the display of information products.

The Curriculum: 15/16 credit hours

Choose one (3 or 4 cr.):

Non Geography Major

- ❖ GEOG 201/211(4) **Geography of Environmental Systems.** A systematic introduction to the processes and associated forms of the atmosphere and earth's surfaces emphasizing the interaction between climatology, hydrology, and geomorphology.
- ❖ GEOG 202 (3) **The World in Cultural Perspective** Examines the imprint of cultural traits on the earth's landscape. The transformation of the earth's surface as a result of cultural diversity, settlement patterns, political organizations, cultural evolutions, and population growth.

Required: (12 cr.)

- ❖ GEOG 372 (3) **Remote Sensing.** Principles of remote sensing in relation to photographic, thermal infra-red and radar imaging. Methods of obtaining quantitative information from remotely sensed images emphasizing the study of spatial and environmental relationships.
- ❖ GEOG 373 (3) **Geographic Information Systems.** Characteristics and organization of Geographic data; creation and use of geospatial databases; metadata; spatial data models for thematic mapping and map analysis; use of geographic information systems in society, government, and business. Practical training with use of advanced software and geographic databases .
- ❖ GEOG 476 (3) **Computer Cartography.** Principles of cartographic database, earth-map relations, map design, symbolization and color usage. Practical skills of making different thematic maps using simple software package.
- ❖ GEOG 306 (3) **Quantitative Methods for Geographic and Environmental Sciences**

Admission to the Program:

There are no special requirements for the Geographic Information Science Minor Program. Geographic science methods are applicable to many diverse fields, such as agriculture, marketing and archaeology. The Department of Geography welcomes students from every area of study.

Requirements;

- ❖ All credits for the minor must be taken in the Department of Geography at the University of Maryland, College Park.
- ❖ All courses must be completed with a grade of "C" or better.
- ❖ No more than six credits are to be included in the Minor and student's major, supporting courses, and college requirements.

Application form attached, return to Advising Office, Lefrak 2108.

Email: geog-advise@umd.edu

Phone: 301-405-4073

Computer Facilities:

The Geography Department has two 25-seat computer teaching laboratories. One of the two labs was upgraded in January 2006 and has Dell PCs with dual 3 GHZ processors, 2 GB Ram, 19" LCD monitors, and DVDRW drives. The older lab has Dell PCs with 2 GHZ processors, 1 GB ram, and 19" CRT monitors. Both labs have the following software installed; PCI 9.1, Envi 4.2, Splus7.0, ArcGis9.1, R, Arcview3.3, X-win 7.1, Office 2003, SSH, Visual Studio 2005, java, flash, real player. Five Linux workstations will also be available for faculty to teach basic unix functionality. There are different types of equipment for field research and remote sensing, and Global Positioning Systems (GPS) is also available

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ADVISING WORKSHEET
MINOR IN GEOGRAPHIC INFORMATION SYSTEMS

NAME OF STUDENT _____
 UNIVERSITY I.D. NUMBER _____
 MAJOR _____ SEMESTER DECLARED: _____
 TELEPHONE WHERE YOU CAN BE REACHED DURING THE DAY _____
 E-MAIL _____
 EXPECTED DATE OF GRADUATION _____
 REASON WHY DECLARING GEOG/GIS YOUR MAJOR (EXPAND ON YOUR SELECTION)?
 FRIENDS _____ CLASS _____ INSTRUCTOR _____ WEBSITE _____
 JOB POTENTIAL _____ CURRICULUM STRUCTURE _____
 OTHER _____

REQUIRED:	COURSES COMPLETED TOWARD MINOR		
	DATE	GRADE	CREDITS
NON-GEOGRAPHY			
1. GEOG 201 OR GEOG202	_____	_____	3 HOURS
& GEOG 211	_____	_____	1 HOURS
2. GEOG 372	_____	_____	3 HOURS
3. GEOG 373	_____	_____	3 HOURS
4. GEOG 472, 473, 475, 476	_____	_____	3 HOURS
5. GEOG 306	_____	_____	3 HOURS
GEOGRAPHY MAJOR			
1. GEOG 372	_____	_____	3 HOURS
2. GEOG 373	_____	_____	3 HOURS
3. GEOG 476	_____	_____	3 HOURS
4. GEOG 472, 473, 475	_____	_____	3 HOURS
5. GEOG 306/398Q	_____	_____	3 HOURS

REMINDER: STUDENT MUST ACHIEVE A "C" OR BETTER IN EACH COURSE APPLIED TO MINOR IN GEOGRAPHY.

THIS STUDENT HAS COMPLETED ALL THE REQUIREMENTS FOR A MINOR IN GEOGRAPHIC
INFORMATION SYSTEMS.

SIGNATURE OF GEOGRAPHY ADVISOR

DATE