MINOR IN GEOGRAPHIC INFORMATION SCIENCES

Geographic Information Sciences (GISciences) is an integrative, skills-based discipline that facilitates observation and analysis at global scales, employing a spatial perspective that is useful to many disciplines. The minor in GISciences provides students with basic professional skills for conducting spatial analysis, combining conceptual frameworks with technical proficiencies in tools such as geographic information systems, remote sensing, global positioning systems, cartography, and spatial statistics.

The minor works well with a variety of majors from the College of Business and Economics, the College of Health Professions, the College of Liberal Arts, and the College of Science and Mathematics. GISciences is a growing field and Towson University is recognized as a GISciences leader in Maryland. Students graduating with GISciences skills are in demand by employers, due to the large number of academic, private, government, and nonprofit organizations that are creating or expanding their GIS capabilities.

The minor is awarded upon completion of a minimum of 25 units of required and elective courses. A maximum of 6 units from other departments may be counted toward the minor, with the approval of the program director. Students are strongly encouraged to complete a GIS internship with a government agency or business.

Code	Title	Units
Required Courses		
GEOG 221	INTRODUCTION TO GEOSPATIAL TECHNOLOGY	3
GEOG 321	INTRODUCTION TO REMOTE SENSING AND PHOTOGRAMMETRY	3
GEOG 322	INTRO TO GEOGRAPHIC INFORMATION SCIENCE	4
GEOG 323	CARTOGRAPHY AND GRAPHICS I	3
GEOG 375	QUANTITATIVE METHODS IN GEOGRAPHY	3
Electives		
Select three of the following: [1]		9
GEOG 408	APPLICATION OF GIS IN EMERGENCY MANAGEMENT	
GEOG 414	GIS APPLICATIONS	
GEOG 416	ADVANCED REMOTE SENSING: DIGITAL IMAGE PROCESSING AND ANALYSIS	
GEOG 426	GIS DATABASE DESIGN	
GEOG 428	PYTHON SCRIPTING FOR ARCGIS	
GEOG 465	ADVANCED TECHNIQUES IN GIS	
GEOG 471	GEOSPATIAL TECHNOLOGIES SPECIAL TOPICS	
GEOG 491	GEOGRAPHY/ENVIRONMENTAL PLANNING INTERNSHIP [2]	
GEOG 495	DIRECTED READNGS IN GEOGRAPHY (GIS topics)	
GEOG 496	INDEPENDENT STUDY IN GEOGRAPHY (GIS topics)	
Total Units		**25**

[1] Other lower- and upper-division computer science courses, as well as GIS applications courses offered by other departments may be considered as electives, with the approval of the department chair.

[2] Maximum 3 units of GEOG 491 may be applied toward the minor.