

Geographic Information Systems (GIS) and Cartography

Associate in Science Degree 2008-2009

Program Core Requirements	18
Additional Career Requirements	12-13
General Education/MnTC	30
Wellness	<u>2</u>
Total Credits	62-63

Program Information: The field of Geographic Information Systems (GIS) deals with data manipulation and mapping in “layers” to best analyze and present data. It is an essential tool for assessing markets for new products, planning land use, and analyzing environmental issues. This program prepares students for entry-level positions in the field of GIS and also provides the first two years of a bachelor's degree in GIS/Cartography. Coursework will transfer to the University of Minnesota. Because of differing requirements at transfer institutions, students should meet with an advisor to plan a program of study. For additional information about our GIS Programs, visit our Web site at <http://www.AnokaRamsey.edu>.

Program Goals: By completing this program, students will achieve the following learning goals: 1) demonstrate an ability to apply geographic analysis principles to problems in the social and biological sciences, natural resources and business environments; 2) understand theory and implementation of relational databases and data models relevant to GIS; 3) understand and apply the principles of map design and production; 4) demonstrate proficiency in GIS software commonly used in the field; and, 5) demonstrate an ability to locate and create data appropriate for a wide variety of GIS applications.

Program Admission: To apply for admission to one of the Geographic Information Systems (GIS) Programs, submit the Application for GIS Programs to the Records and Registration Office. Applications are available in Counseling and Advising Services or the Records and Registration Offices on either campus. The GIS Program Core courses are only offered at the Coon Rapids Campus.

General Information: College-level competence in English, writing, and mathematics should be acquired before entering the GIS programs. Computer competency must be acquired before entering the GIS programs.

Developmental Courses: Courses numbered below 1000 will not apply toward the A.S. degree.

Program Core Requirements		18 credits			
GEOG 1501 Fundamentals of Maps & Geographic Information	3	3. Natural Science			
GEOG 1511♦ Fundamentals of Maps & Geographic Info Lab	1	4. Mathematical/Logical Reasoning			
GEOG 2501♦ Cartographic Principles	3	MATH 1110♦ Introductory Statistics I	3		
GEOG 2511♦ Cartographic Principles Lab	1	5. History/Social/Behavioral Sciences (Select one)			
GEOG 2560♦ Principles of Geographic Information Systems	3	6. Humanities/Fine Arts			
GEOG 2561♦ Principles of Geographic Information Systems Lab	1	Select at least one course			
GEOG 2297♦ GIS Internship	4	7. Human Diversity			
GEOG 2590♦ GIS Implementation	2	8. Global Perspective			
		9. Ethical/Civic Responsibility			
		10. People and the Environment			
Additional Career Requirements		12-13 credits			
BUS 1119♦ Introduction to Relational Databases	3				
ENGL 1104♦ Technical Writing	3				
Electives (Choose a minimum of 6-7 credits from the following)	6-7				
GEOG 1100 Introduction to GIS (1cr)					
GEOG 1101 Geography of the United States (3 cr.)					
GEOG 1106 World Regional Geography (3 cr.)					
GEOG 1108 Minnesota Geography (3 cr.)					
General Education/MnTC Requirements		30 credits			
Complete at least 30 credits in courses from the Minnesota Transfer Curriculum, <u>including all courses listed</u> . You must complete at least one course in six of the ten emphasis areas. You may select courses that meet more than one emphasis area.					
1. Communication					
ENGL 1121♦ College Writing and Critical Reading	4				
SPCH 1110 Introduction to Speech Communication or	3				
SPCH 2215 Public Speaking or 2220 Interpersonal Comm.					
2. Critical Thinking					
♦ Course has a prerequisite.					
Wellness 2 credits					
Select any HPER course(s) totaling at least 2 credits.					
Notes: (1) A minimum cumulative grade point average (GPA) of 2.0 in courses numbered 1000 or above at ARCC. (2) A minimum grade of C must be earned in all Program Core requirements. (3) All Program Core requirements must be completed at ARCC. (4) A minimum of 62 semester credits numbered 1000 or above with a minimum of 20 semester credits taken at ARCC (reduced to 12 if 8 credits are transferred from another MnSCU institution or the U of M) is required for graduation.					
Program Sequence: The sequence that follows is suggested for full-time students. Part-time students will need more time to complete this program; many courses are offered in the evening.					
	First Year		Second Year		
Fall Semester		Spring Semester	Fall Semester	Spring Semester	
GEOG 1501* and 1511*	4	GEOG 2560 and 2561	4	ENGL 1104	3
GEOG 2501** and 2511**	4	BUS 1119	3	SPCH 1110 or 2220	3
ENGL 1121	4	MATH 1110	3	Wellness Elective	2
Program Elective	<u>3-4</u>	General Education	<u>6</u>	General Education	6
Total	15-16	Total	16	GEOG 2590	2
				Program Elective	3
				General Education	6
				GEOG 2297	<u>4</u>
				Total	15
* These courses are offered the first half of the semester only.					
**These courses are offered the second half of the semester only.					

You are encouraged to contact a counselor or an advisor, Cambridge Campus 763.433.1840 or Coon Rapids Campus 763.433.1230 for course planning assistance and information about transfer credit evaluation. NOTE: The requirements of this program are subject to change without notice. 6/26/08