



Natural Resources *GIS Emphasis*

Itasca Community College

Degree: Associate in Applied Science

Length: 64 credits

TRANSFER OPPORTUNITY!

In addition to directly entering the workforce, Itasca's Natural Resources graduates can now transfer their A.A.S. degree to the University of Minnesota/Crookston and complete their Bachelor of Science in Environmental and Natural Resource Management. For more information, stop by the Counseling Office or call 322-2320.

The Department of Natural Resources at Itasca Community College (ICC) offers a two-year (64 credit) Associate in Applied Science degree in Natural Resources with an Emphasis in Geographic Information Systems (GIS). This degree prepares students with a background in geography, computer science, forest management and ecological principles, and utilizes GIS for gathering, managing and mapping natural resources related data.

Geographic Information Systems (GIS) is a computer based mapping software tool that allows the capture, storage, display, integration and modeling of complex spatial processes. Its applications extend to areas as diverse as business, emergency services, environmental science, geology, geography, urban/regional planning, forestry and health and human services, and its use is well integrated at all levels of government across the United States. ICC utilizes state of the art Environmental Systems Research Institute's (ESRI) ArcView/ArcGIS software, a world leader in GIS development and applications. Job opportunities for graduates are excellent nationwide, and encompass both seasonal and permanent employment.

GENERAL EDUCATION (17 CREDITS selected from Minnesota Transfer Curriculum)

A. Communications 10 cr.

Engl	1101	Expository Writing	4 cr.
Engl	1105	Technical Writing	3 cr.

AND One of the following:

Spch	1101	Intro to Speech Communication	3 cr.
Spch	1105	Fundamentals of Public Spkg.	3 cr.
Spch	1111	Interpersonal Communication	3 cr.

B. Natural Science or Mathematics 4 cr.

Math	1105	Elementary Statistics	4 cr.
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C. Humanities Elective 3 cr.

Any 2000 level English literature course; Ansh 1102; Art 1101, 1111, 1112,

TOTAL GENERAL EDUCATION CREDITS 17 cr.

NATURAL RESOURCES GIS PROGRAM (47 cr.)

The GIS program content has been developed in conjunction with input from local, regional and national GIS professionals, and is tailored to prepare individuals with technical skills and confidence to be productive within the professional GIS working environment. Individuals will learn how to apply GIS to complex spatial modeling scenarios, improve their ability to document and communicate GIS processes; acquire, evaluate the integrity of and integrate a wide variety of spatial data; create and manage complex projects on a computer network that utilizes MSOffice programs for support; integrate models external to the GIS, operate and collect Global Positioning Systems (GPS) data and equipment, create three dimensional physiographic models, in addition to a host of other professionally related GIS skills and activities. Focus is given to the appropriate pre and post processing of data sets, evaluation of results of GIS work, and development of a critical mindset, to ensure the highest degree of competence and integrity for program graduates.

			<u>Credits</u>
Biol	1131	Plant Taxonomy	3
CSci	1123	Computer DataBases	3
CSci	1120	Introduction to Computers	3
Engr	1201	Introduction to Surveying Methods	3
ForT	1202	Natural Resource Careers	1
ForT	1206	Forest Protection	2
ForT	2101	Silviculture	4
ForT	2102	Forest Inventory	4
Geog	2201	Geographic Information (GIS) Internship	4
Geog	1201	Map Use, Analysis & Interpretation	3
Geog	1204	Principles of Geographic Information Science	3
Geog	1206	Cartography	3
Geog	2101	Data Acquisition & Database Development in GIS	3
Geog	2104	Modeling Techniques in Geographic Information Science	3
Geog	2107	Remote Sensing & Image Interpretation	3

* *PLUS* three (3) credits selected from the courses listed in Spring Semester, Year 2

COURSE SEQUENCE - Year 1

Fall Semester				Spring Semester			
Biol	1131	Plant Taxonomy	3	CSci	1123	Com. Databases	3
CSci	1120	Intro. to Computers	3	ForT	1202	Nat. Resource Careers	1
Engl	1101	Expository Writing	4	ForT	1206	Forest Protection	2
Engr	1201	Intro. To Surv. Methods	3	ForT	2102	Forest Inventory	4
Geog	1201	Map Use Analysis/Interp	3	Geog	1204	Principles of GIS	3
			<hr style="width: 100px; margin-left: auto; margin-right: 0;"/>	Math	1105	Elem Stat	4
			16				<hr style="width: 100px; margin-left: auto; margin-right: 0;"/>
							17

COURSE SEQUENCE - Year 2

Fall Semester				Spring Semester			
Engl	1105	Tech Writing	3	Geog	2201	Nat Resources Internship	3
Geog	1206	Cartography	3	Geog	2104	Modeling Techniques in GIS	3
Geog	2101	Data Acq & Data Base Devlp	3	Geog	2107	Remote Sensing & Img Interp	3
ForT	2101	Silviculture	4	Humanities Electives			3
Spch	1101, 1105, or 1111		3				<hr style="width: 100px; margin-left: auto; margin-right: 0;"/>
			<hr style="width: 100px; margin-left: auto; margin-right: 0;"/>				12*
			16				

***Plus 3 cr. from the following:**

ForT	1398	Wildland Fire Training	2
ForT	2105	Forest Products	3
ForT	2107	Timber Harvesting	3
ForT	2121	Ecosystem Mgmt	2
NSci	1131	Prin. of Wildlife Mgmt.	3

Itasca Community College is an equal opportunity educator/employer.
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 218-322-2433 (218-322-2438 V/TTY) or Minnesota Relay by dialing 7-1-1.