

# GIS COURSES IN MINNESOTA (November 2014)<sup>1</sup>

## MNSCU: 4-Year Universities

### **Bemidji State:**

GEOG 1224 Introduction to Map Use  
GEOG 3226 Cartography  
GEOG 3231 Introduction to Geographic Information Systems  
GEOG 3232 Intermediate Geographic Information Systems  
GEOG 3255 Introduction to Remote Sensing  
GEOG 4265 Spatial Analysis  
GEOG 4275 Advanced Geographic Information Systems  
Graduate credit available for students in other graduate programs

### **Metropolitan State:**

BIOL 318 Spatial Ecology  
BIOL 418 GIS for Natural Sciences

### **Minnesota State University, Mankato:**

GEOG 370 Cartographic Techniques  
GEOG 373 Introduction to Geographic Information Systems  
GEOG 439 Transportation Modeling & GIS  
GEOG 471 Digital Field Mapping with GPS  
GEOG 473 Intermediate GIS  
GEOG 474 Introduction to Remote Sensing  
GEOG 475 Applied Remote Sensing & GIS (4)  
GEOG 476 Spatial Statistics (3)  
GEOG 478 Spatial Analysis with GIS (3)  
GEOG 479 GIS Practicum (1-4)  
GEOG 673 GIS for Professionals  
400-levels also cross-listed as 500 level courses

### **Minnesota State University, Moorhead:**

CM 200 Surveying  
GEOS 205 Thinking Spatially  
GEOS 207 GPS Field Techniques  
GEOS 210 Cartography  
GEOS 307 Introduction to GIS  
GEOS 370 Structural Geology and Mapping  
GEOS 407 Spatial Analysis

### **Southwest Minnesota State University:**

ENVS 107 Introduction to ArcGIS  
GEOG 121 Introduction to Geographic Information Systems  
GIS Methods & Applications  
The GIS Center also offers 1 to 2 credit courses in ArcGIS software

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<sup>1</sup> Handout at the Jan. 28, 2015 meeting of the Minnesota Statewide Geospatial Advisory Council, Dr. Ben Richason, St. Cloud State University

**St. Cloud State University:**

GEOG 216 Principles of Geographic Information Science  
GEOG 315 GIS for the Urban Environment  
GEOG 316 Geographic Information Systems  
GEOG 335 Land Surveying  
GEOG 336 Control and Geodetic Surveying  
GEOG 350 Introduction to Remote Sensing  
GEOG 406 Thematic Cartography  
GEOG 407 Map Design and Presentation  
GEOG 416 Techniques in GIS  
GEOG 433 Cadastral Surveying  
GEOG 436 GPS/GIS Integration  
GEOG 438 Geodesy and Survey Adjustments  
GEOG 439 Surveying Seminar  
GEOG 450 Digital Image Processing  
GEOG 462 Concepts in Spatial Analysis  
GEOG 605 Spatial Analysis Methods in Geography  
400-levels also cross-listed as 500 level courses

**Winona State University:**

GEOS 316 GIS and Imaging Techniques

## MNSCU: 2-year Colleges

### Central Lakes College:

- GEOG 1410 Maps and Places (3 cr.)
- NATR 1280 Introduction to GPS & GIS (2 cr.)

### Century College:

- GEOG 1060 Investigating the Environmental Sciences Using GIS

### Dakota County Technical College:

- CIVL1130 Beginning Surveying
- CIVL1150 Introduction to GIS
- CIVL1230 Intermediate Surveying
- CIVL1231 Intermediate Surveying and GPS
- CIVL1240 GPS and Construction Staking

### Fond du Lac Tribal and Community College:

- GEOG 1050 Introduction to Geographic Information Systems (GIS)
- GEOG 1052 Computer Cartography
- GEOG 1054 Introduction to the Global Positioning System (GPS)
- GEOG 1058 Introduction to Remote Sensing
- GEOG 2050 Practical Applications in GIS
- GEOG 2052 Visualization in GIS
- GEOG 2054 Programming in Arc GIS

### Inver Hills Community College:

- GEOG 1119 Map Interpretation
- GEOG 1211 Introduction to Geographic Information Systems

### Itasca Community College:

- GEOG 1201 Map Use, Analysis & Interp.
- GEOG 1204 Principles of GIS
- GEOG 1206 Cartography
- GEOG 2001 GIS Data Acquisition
- GEOG 2002 GIS Database Management
- GEOG 2104 Modeling Techniques in GIS
- GEOG 2107 Remote Sensing
- GEOG 2113 GIS Applications (1 credit)

### Lake Superior College:

- CETT 1402 Introduction to Surveying
- CETT 1420 Route Survey
- CETT 2400 Intermediate Survey
- CETT 2420 Land Survey Systems
- CETT 2460 Advanced Survey
- GEOG 1202 Introduction to Maps
- GEOG 1204 GIS 1: Concepts and Applications

**Minnesota State Community and Technical College:**

CIVL 1102 Survey I: Fundamentals  
CIVL 1119 Survey II: Land Surveys  
CIVL 2232 Survey III: Legal Surveys  
CIVL 2240 Introduction to Geographic Information Systems  
CIVL 2242 Survey III: Global Positioning System Technology and Equipment  
CIVL 2244 Survey IV: Equipment Software

**Minnesota West Community and Technical College:**

AGRI 2204 Intro to GPS/GIS  
AGRI 2205 Introduction to Precision Management Software

**Normandale Community College:**

GEOG 1050 Introduction to Maps and Places  
GEOG 1180 Cartography and Geographic Information Systems

**Northland Community and Technical College:**

GINT 2300 GEOINT Analysis  
GINT 2301 GEOINT Collection Mgmt  
GINT 2400 Open Src Collection Mgmt  
GINT 2402 GEOINT Operations  
IMAG 1100 Imagery Intelligence  
IMAG 1101 Remote Sensing  
IMAG 1103 Imagery Software/Mapping  
IMAG 2102 Practical IA

**Northwest Technical College:**

FORS 1104 Intro to Geographical Information System

**Ridgewater College:**

AGRI 1770 GIS Applications (3 credits)  
AGRI 1771 Introduction to Precision Agriculture (2 credits)  
AGRI 1772 Remote Sensing/Image Analysis (2 credits)  
AGRI 1773 GIS Problem Solving (2 credits)  
AGRI 1776 GIS for Agricultural Producers (3 credits)

**Riverland Community College:**

LENR1100 Introduction to Global Positioning System (GPS) (2 credits)

**Rochester Community and Technical College:**

BIOL 1300 Biological Applications of GIS Technology

**South Central College:**

GIS 2840 Introduction to Geographic Information Systems  
GIS 2841 Intermediate GIS  
GIS 2842 Field Mapping with GPS  
GIS 2843 GIS Practicum (2-4 credits)  
GIS 2845 Introduction to Remote Sensing  
CTLS1810 Introduction to Surveying  
CTLS1815 Surveying 2  
CTLS2835 Introduction to Land Surveying

**St. Cloud Technical and Community College:**

LSCE1502 Surveying Principles I  
LSCE1506 Advanced Survey  
LSCE1530 Survey Fundamentals  
LSCE2502 Control and Digital Surveys  
LSCE2506 Construction Design and Surveying Principles  
LSCE2510 Surveying Principles II

**Vermilion Community College:**

NRT 2315 Introduction to GIS  
NRT 2236 Land Surveying (NRT2315)  
NRT 2238 NR Measurements & Remote Sensing  
NRT 2256 Surveying & Mapping Techniques

## University of Minnesota Campuses

### Twin Cities:

#### Civil Engineering:

CE 3202 Surveying and Mapping

#### Environmental Sciences, Policy, and Management:

ESPM 3031/5031 Applied Global Positioning Systems for Geographic Information Systems

ESPM 5295. GIS in Environmental Science and Management

#### Forest Resources:

FR 3131/5131 Geographical Information Systems (GIS) for Natural Resources

FR 3262/5262 Remote Sensing of Natural Resources and Environment

FR 4515/5615 Field Remote Sensing and Resource Survey

#### Geographic Information Systems:

GIS 5555 Basic Spatial Analysis

GIS 5571 ArcGIS I

GIS 5572 ArcGIS II

GIS 5573 Desktop Mapping

GIS 5574 GIS and the Internet

GIS 5575 Surveying and the Global Positioning System (GPS)

GIS 5577 Spatial Database Design and Administration

GIS 5578 GIS Programming

GIS 5590 Special Topics in GIS (1-3 credits)

GIS 8501. Project Management & Professional Development

GIS 8990 Research Problem

#### Geography:

GEOG 1502 Mapping Our World

GEOG 3511/5511 Principles of Cartography

GEOG 3521 Digital Planet: Understanding Your World in the Information Age

GEOG 3523 Digital Mapping: Introduction to Making Online Maps for the Humanities and Sciences

GEOG 3531/5531 Numerical Spatial Analysis

GEOG 3561/5561 Principles of Geographic Information Science

GEOG 5512 Cartography: Topics

GEOG 5562 Geographic Information Science and Analytical Cartography

GEOG 5563 Advanced Geographic Information Science

GEOG 5564 Urban Geographic Information Science and Analysis

GEOG 5565 Geographical Analysis of Human-Environment Systems

GEOG 8290. Seminar in GIS and Cartography

GEOG 8291. Seminar in GIS, Technology, and Society

GEOG 8292. Seminar in GIS: Spatial Analysis and Modeling

#### Infrastructure Systems Engineering:

ISE 5501 Geographic Information Systems

#### Landscape Architecture:

LA 5573 Landscape Technology: Introduction to Geographic Information Systems

#### Public Affairs:

PA 5215 Computer Applications in Land Use Planning

PA 5271 Geographic Information Systems: Applications in Planning and Policy Analysis

**Rgeional:**

**Crookston:**

ASM 3009. Surveying  
ASM 3360. Applications in Precision Agriculture  
ASM 3512. Remote Sensing Applications in Precision Agriculture  
NATR 2630. Introduction to Geographic Information Systems  
NATR 3635. Geographic Information Systems Applications

**Duluth:**

CE 3016 Surveying  
GEOG 2552 Introduction to Maps and Geospatial Information  
GEOG 3532 Map Design and Geographic Visualization  
GEOG 5543 Advanced Cartographic Methods  
GIS 3533 Multimedia, Animated and Internet Mapping  
GIS 3563 Geographic Information Science I: Theory and Analysis  
GIS 3564 Geographic Information Science II: Applied GIS  
GIS 3580 Earth Imagery  
GIS 3595/5595 GIS Special Topics  
GIS 4585 Applied Statistics in GIS  
GIS 5571 Geographic Information Science in Urban Analysis  
GIS 5572 Environmental Application of GIS  
GIS 5573 GIScience in Regional Sustainability Applications  
GIS 5581 Digital Image Processing and Analysis

**Morris:**

ENST 1201 Mapping the Environment  
GEOG 3501 Geographic Information Systems  
GEOL 2161 GIS and Remote Sensing

## Private Colleges & Universities

### **Bethel University:**

GEO201/ ENS201 Introduction to Geographic Information Systems

### **Carleton College:**

ENTS 120 Introduction to Geospatial Analysis

ENTS 272 Remote Sensing of the Environment

### **College of St. Benedict | St. John's University**

ENVR 311: Introduction to Geographic Information Systems

### **Concordia College, Moorhead**

ENVR 360 / BIOL 360 Introduction to Geographic Information Systems

### **Gustavus Adolphus College**

GEG 240 Fundamentals of Geographic Information Systems

GEG 343 Problem Solving Using Geographic Information Systems

GEG 345 Remote Sensing of the Environment

### **Macalester College**

GEOG 225 Introduction to Geographic Information Systems

GEOG 362 Introduction to Remote Sensing

GEOG 364 GIS and Community Partnerships

GEOG 365 Urban GIS

GEOG 366 GIS for Global Urban Environments

GEOG 367 Environmental Geographic Information Systems (GIS)

GEOG 370 Advanced Cartography and Geovisualization

### **St. Mary's University of Minnesota**

B315 GIS Theory and Applications with Lab (Biology)

GIS605 GIS Methods (3 cr.)

GIS 619 Statistical Analysis (3 cr.)

GIS632 Programming Principles (3 cr.)

GIS636 Advanced Research Methods (3 cr.)

GIS642 Database Design and Administration (3 cr.)

GIS645 Project Management (3 cr.)

GIS656 Spatial Data Collection (3 cr.)

GIS663 Advanced Modeling and Analysis (3 cr.)

GIS670 Advanced GIS and Imagery Analysis (3 cr.)

GIS671 GIS Customization (3 cr.)

GIS672 GeoDesign (3 cr.)

GIS673 GIS Legal Fundamentals (3 cr.)

GIS674 Location Analytics (3 cr.)

GIS693 Graduate Project I (3 cr.)

GIS694 Graduate Project II (3 cr.)

RA506 GIS Customization (3 cr.)

RA508 Internet Mapping Services (3 cr.)

RA554 GIS Analysis (3 cr.)

RA556 Spatial Data Methodology (2 cr.)

RA563 Advanced Modeling and Analysis (2 cr.)



RA570 Advanced GIS (3 cr.)  
RA632 Programming Languages (3 cr.)  
RA642 Database - Access and SQL (2 cr.)  
RA660 Introduction to ArcGIS (1 cr.)  
RA645 Project Management (3 cr.)  
RA651 Spatial Analysis of Geohazards Using GIS (1 cr.)  
RA653 Natural Resource Risk Assessment and Management (1 cr.)  
RA654 Introduction to Urban and Regional Planning (1 cr.)  
RA655 Creating and Integrating Data for Natural Resource Applications (1 cr.)

**St. Olaf College**

ENVST 255 Remote Sensing and Geographic Information Systems

**University of St. Thomas**

GEOG 223 Remote Sensing  
GEOG 321 Geographic Information Systems  
GEOG 322 Geographical Analysis  
GEOG 330 Geography for Business and Planning  
GEOG 421 Applied Geographic Information Systems  
GEOG 422 GIS Customization and Programming