

**Fond du Lac Tribal and Community College  
COURSE OUTLINE FORM**

**01/23/18**

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

**1. Prepared by:** \_\_\_\_\_

**2. Date submitted:** \_\_\_\_\_

3. Date approved: 12/7/17 Date revised \_\_\_\_\_

**4. Department/discipline:** Geography

**5. Department(s) endorsement(s):** \_\_\_\_\_

**(Signatures of the person(s) providing the endorsement are required.)**

6. Course Title: The Digital World

Abbreviated course title (25 characters or less): \_\_\_\_\_

7. Course Designator: GEOG 8. Course Level: 1001

9. Number of Credits: Lecture 2 Lab 1

10. Control Number (on site) 30 Control Number (online) \_\_\_\_\_

11. Catalog/Course description:

This course presents a broad overview of geospatial technologies used to observe, map, and describe our shared planet. The course is organized into an Introduction to Geospatial Information section and four sections introducing geospatial technology fields: Global Navigation Satellite Systems (GPS and others), Remote Sensing, Geographic Information Systems (GIS), and Cartography. Students will apply these technologies in hands-on labs. This course is intended for non-GIS majors but may be helpful as an introductory course for intended majors as well.

12. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s):

Co-requisite:

13. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

Textbook: none

Additional resources:

- GIS Lab (Room 208) with the latest version of QGIS installed on PCs
- Handheld GPS receivers
- Supplemental articles, videos, websites, and case studies

14. **Course Content** (Provide an outline of major topics covered in course)

1. Fundamentals of geospatial information

2. Geodesy and coordinate systems
3. Geographic scale
4. Spatial relationships and statistics
5. Fundamentals of GPS
6. GPS Applications
7. Fundamentals of Remote Sensing
8. Aerial photography
9. Satellite remote sensing
10. Remote Sensing applications
11. Fundamentals of GIS
12. GIS data models
13. Attribute and spatial query
14. Common geoprocessing operations
15. GIS Applications
16. Fundamentals of Cartography
17. Data classification
18. Symbolization
19. Qualitative maps
20. Quantitative thematic maps
21. Web maps

#### 15. Learning Goals, Outcomes, and Assessment

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one's own traditions and culture, knowledge of others' traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Course Learning Outcomes will fulfill the identified competencies.

Course Learning Outcomes.

Upon completion of this course, students will be able to:

1. Describe the differences between geospatial data and other forms of data without a geospatial component (A)
2. Use proper terminology to describe the ways in which phenomena vary across space (B)
3. Acquire remote sensing imagery from online repositories and identify natural and human-made phenomena within it (A, B, C)
4. Use a handheld GPS receiver to collect geospatial data and upload that data to a GIS (A)
5. Perform basic spatial analysis operations in open-source GIS software (A, C)
6. Appropriately classify and symbolize data to create a thematic map (A, B)

7. Critique the ontology, power relations, and possible unintended consequences of digital geospatial information (A, D)

16. **Minnesota Transfer Curriculum (MnTC):** If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See [www.mntransfer.org](http://www.mntransfer.org)

Goal Area(s): 10

Goal Area 10: People & the Environment

Goal: To improve students' understanding of today's complex environmental challenges. Students will examine the inter-relatedness of human society and the natural environment. Knowledge of both bio-physical principles and socio-cultural systems is the foundation for integrative and critical thinking about environmental issues.

Outcomes: Students will be able to (how course addresses the outcome):

- Explain the basic structure and function of various natural ecosystems and of human adaptive strategies within those systems (by understanding how geospatial technologies provide data about ecosystems and human-nature systems such as agriculture and forestry and the nature of that data).
- Discern patterns and interrelationships of bio-physical and socio-cultural systems (by analyzing remote sensing data and maps of these systems).
- Describe the basic institutional arrangements (social, legal, political, economic, religious) that are evolving to deal with environmental and natural resource challenges (by describing the ways in which geospatial technologies are used to monitor, assess, and mitigate environmental challenges such as climate change, pollution, flooding, and fire).
- Evaluate critically environmental and natural resource issues in light of understandings about interrelationships, ecosystems, and institutions (by evaluating how interpretations of those issues are shaped by geospatial technologies).
- Propose and assess alternative solutions to environmental problems (by applying geospatial information regarding those problems to come up with alternatives).
- Articulate and defend the actions they would take on various environmental issues (using maps and other visuals produced from geospatial data).

Does this course require additional material for specific program requirements?

If yes, please provide.

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