

Fond du Lac Tribal and Community College
COURSE OUTLINE FORM

03/19/19

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: _____ Date revised 1/26/2022

4. Department/discipline: GIS

5. Department(s) endorsement(s): _____
(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: Introduction to GIS
Abbreviated course title for Transcripts (25 characters or less): _____

7. Course Designator: GEOG 8. Course Level: 2001

9. Number of Credits: Lecture 1 Lab 2

10. Control Number (on site) 24 Control Number (online) 20

11. Catalog/Course description:

This course introduces basic concepts of Geographic Information Systems (GIS). Students will apply GIS theory to hands-on laboratory activities and projects based on real-world scenarios and data. Industry standard online and desktop software is utilized to introduce data creation, acquisition, management, and editing, georeferencing, spatial analysis, symbolization, and map production workflows for a variety of professional GIS applications.

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: Determined on a yearly basis by instructor based on availability, price, and content.

Additional resources:

- GIS computer lab (Room 208) with most recent version of ESRI ArcGIS Pro installed
- Plotter for poster printing
- Institutional ArcGIS Online account with student access
- ESRI online courses and tutorials
- Various government and ESRI data repositories
- Supplemental articles, videos, and case studies
- Open Educational Resource texts on GIS and Geospatial Information

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

1. Three fields of GIS: Systems, Science, Studies (course emphasis is on Systems)

2. Example applications of GIS
 3. Hardware, software, and grayware components of GIS
 4. Drawing, symbolizing, and labeling data
 5. Basic GIS map production
 6. Information representation: analog vs. digital, objects vs. fields, generalization
 7. Geospatial data file structure and geodatabases
 8. Metadata
 9. Geodesy: ellipsoids, datums, coordinate systems, and projections
 10. Data acquisition
 11. Attributes
 12. Georeferencing and geocoding data
 13. Digitizing and editing spatial data
 14. Queries: visual, attribute, location-based
 15. Data joins
- 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.)

Upon completion of this course, the student will be able to:

Learning Outcomes	Competencies (CAC)	Cultural Standards
Describe several ways GIS can be used to analyze information and solve spatial problems in different domain fields.	B, D	1, 4
Describe the components of a GIS and how they interact.	A, B	1
Critique the ontology of digital geospatial information as a product of dominant ways of thinking about the world.	A, D	1, 4
Download and process geospatial datasets for analysis and mapping.	A, C	1
Edit spatial and attribute data using GIS software.	A, B	1, 4

Perform joins to create linkages between tabular and spatial datasets.	A	1, 4
Georeference raster and vector data that lack coordinate reference system information.	A	1, 4
Perform spatial and attribute queries.	A, C	1, 4

WINHEC Cultural Standards:

1. **GIKENDAASOWIN – *Knowing knowledge*:** To develop human beings who value knowledge, learning, and critical thinking and are able to effectively use the language, knowledge, and skills central to an Ojibwe-Anishinaabe way of knowing.
2. **GWAYAKWAADIZIWIN – *Living a balanced way*:** To develop balanced human beings who are reflective, informed learners who understand the interrelatedness of human society and the natural environment, recognize the importance of living in harmony with creation, and are able to apply a systems approach to understanding and deciding on a course of action.
3. **ZOONGIDE'EWIN – *Strong hearted*:** To increase the students' capacity to live and walk with a strong heart, humble and open to new ideas and courageous enough to confront the accepted truths of history and society.
4. **AANGWAAMIZIWIN – *Diligence and caution*:** To develop students' capacity to proceed carefully, after identifying, discussing, and reflecting on the logical and ethical dimensions of political, social, and personal life.
5. **DEBWEWIN – *Honesty and integrity*:** To increase students' capacity to think and act with honesty and integrity as they understand and face the realities of increasingly interdependent nations and people.
6. **ZAAGI' IDIWIN – *Loving and Caring*:** To encourage students' acceptance of the diversity within their school, community, and environment by developing healthy, caring relationships built on respect for all.
7. **ZHAWENINDIWIN – *Compassion*:** To expand students' knowledge of the human condition and human cultures and the importance of compassion especially in relation to behavior, ideas, and values expressed in the works of human imagination and thought.

16. **Minnesota Transfer Curriculum (MnTC):** List which goal area(s) – up to two – this course fulfills.

See www.mntransfer.org

Goal Area(s): _____

Provide the specific learning outcomes as listed on the mntransfer.org website that pertain to this course.

17. Are there any additional licensing/certification requirements involved?

_____ Yes _____ No

Provide the required documentation to show course meets required licensing/certification standards.

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