COURSE OUTLINE: NET0108 - GIS

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Approved: Martha Irwin, Chair, Community Services and Interdisciplinary Studies

Course Code: Title	NET0108: GEOGRAPHIC INFORMATION SYSTEMS
Program Number: Name	1120: COMMUNITY INTEGRATN
Department:	C.I.C.E.
Semesters/Terms:	18F, 19W
Course Description:	This course builds introductory GIS skills. Focus is on effective data creation, collection & management. Topics covered include: efficient data capture methodology, creating & managing geodatabases, performing spatial analysis, performing 3D analysis, image georeferencing, advanced spatial queries, data manipulation, image processing, metadata & vector editing.
Total Credits:	4
Hours/Week:	4
Total Hours:	60
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Essential Employability Skills (EES) addressed in this course:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 50%, D
Course Outcomes and Learning Objectives:	Upon successful completion of this course, the CICE student, with the assistance of a Learning Specialist will acquire varying levels of skill development relevant to the following learning outcomes:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Apply knowledge of natural environment practices to plan, create & manage GIS data.	1.1 Effective geodatabase planning & creation. 1.2 Gain experience with GIS toolbars used by OMNR. 1.3 Solve natural environment/management problems using GIS. 1.4 Perform GIS tasks following OMNR data specifications.
Course Outcome 2	**Learning Objectives for Course Outcome 2**

	2. Use the ESRI ArcMap and ArcCatalog interface effectively.	2.1 Load multiple vector and raster layers. 2.2 Maintain existing ArcMap projects used for data update. 2.3 Perform geoprocessing operations. 2.4 Use ArcCatalog to interchange and convert file formats. 2.5 Customize toolbars for efficient usage. 2.6 Understand procedures for metadata file update and use.
	Course Outcome 3	**Learning Objectives for Course Outcome 3**
	3. Manipulate attribute tables and perform tabular operations.	3.1 Populate attribute tables from existing spreadsheets. 3.2 Add, delete and calculate field records. 3.3 Perform many query types using the Field Calculator.
	Course Outcome 4	**Learning Objectives for Course Outcome 4**
	4. Create and print effective layouts and digital presentations.	4.1 Manipulate layout properties and operations. 4.2 Export layouts to .pdf, or .tif formats for digital storage. 4.3 Cartographic principles exposure.
	Course Outcome 5	**Learning Objectives for Course Outcome 5**
	5. Use ArcToolbox to perform geoprocessing tasks.	5.1 Analyze spatial data by buffering features, overlaying data and calculating attribute values. 5.2 Merge, dissolve, clip, union, erase, intersect and calculate areas tools to manipulate layers & evaluate results. 5.3 Reproject data for use with GPS units, and also to view within different UTM zones. 5.4 Interpolate vertices to incorporate elevation values within a 3D shapefile. 5.5 Understand the geometry repairing tools. 5.6 Perform smoothing to reduce the number of redundant vertices within a shape.
	Course Outcome 6	**Learning Objectives for Course Outcome 6**
	6. Integrating Elevation and Depth data with GIS Analysis.	6.1 Generate contour lines from elevation data. 6.2 Create a bathymetric map using depth data. 6.3 Examine slope, line of sight, and hill-shading. 6.4 Perform raster clipping and mosaicking operations.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight	Course Outcome Assessed
Assignments	75%	All
Tests	25%	All

CICE Modifications:

Preparation and Participation

1. A Learning Specialist will attend class with the student(s) to assist with inclusion in the class and to take notes.
2. Students will receive support in and outside of the classroom (i.e. tutoring, assistance with homework and assignments, preparation for exams, tests and quizzes.)
3. Study notes will be geared to test content and style which will match with modified learning outcomes.
4. Although the Learning Specialist may not attend all classes with the student(s), support will always be available. When the Learning Specialist does attend classes he/she will remain as inconspicuous as possible.

A. Further modifications may be required as needed as the semester progresses based on

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individual student(s) abilities and must be discussed with and agreed upon by the instructor.

B. Tests may be modified in the following ways:

1. Tests, which require essay answers, may be modified to short answers.
2. Short answer questions may be changed to multiple choice or the question may be simplified so the answer will reflect a basic understanding.
3. Tests, which use fill in the blank format, may be modified to include a few choices for each question, or a list of choices for all questions. This will allow the student to match or use visual clues.
4. Tests in the T/F or multiple choice format may be modified by rewording or clarifying statements into layman's or simplified terms. Multiple choice questions may have a reduced number of choices.

C. Tests will be written in CICE office with assistance from a Learning Specialist.

The Learning Specialist may:

1. Read the test question to the student.
2. Paraphrase the test question without revealing any key words or definitions.
3. Transcribe the student's verbal answer.
4. Test length may be reduced and time allowed to complete test may be increased.

D. Assignments may be modified in the following ways:

1. Assignments may be modified by reducing the amount of information required while maintaining general concepts.
2. Some assignments may be eliminated depending on the number of assignments required in the particular course.

The Learning Specialist may:

1. Use a question/answer format instead of essay/research format
2. Propose a reduction in the number of references required for an assignment
3. Assist with groups to ensure that student comprehends his/her role within the group
4. Require an extension on due dates due to the fact that some students may require additional time to process information
5. Formally summarize articles and assigned readings to isolate main points for the student
6. Use questioning techniques and paraphrasing to assist in student comprehension of an assignment

E. Evaluation:

Is reflective of modified learning outcomes.

NOTE: Due to the possibility of documented medical issues, CICE students may require alternate methods of evaluation to be able to acquire and demonstrate the modified learning outcomes

Date:	December 19, 2018
	Please refer to the course outline addendum on the Learning Management System for further information.