

# North Central Michigan College

NCMC MASTER COURSE SYLLABUS

Last Date Revised \_\_\_\_ 10/06/08 \_\_\_\_

**DIVISION/AREA:** Liberal Arts

**DEPARTMENT:** Social Science

**ASSOCIATE DEAN:** Sam McLin

**ORIGINATOR:** Carla Elenz

**DEAN OF INSTRUCTION:** Dr. Timothy Dykstra

**HOURS OF INSTRUCTION:**

Credit hours: 3

Lecture: 2

Lab: 2

Contact hours: 70.4

**COURSE TITLE:** Introduction to Geographic Information Systems I

**COURSE ALPHA:** GIS

**COURSE NUMBER:** 110

**CATALOG DESCRIPTION:**

Introduction to the concept of Geographic Information Systems and their applications, including basic mapping concepts, coordinate systems, georeferencing spatial data, vector and raster data models, using on-line digital spatial data, creating and editing data and basic database management and spatial analysis. Introduction to various methods of data collection, including on-line, digitizing, and GPS. ArcGIS software will be used for practical exercises.

**PREREQUISITE(S):** Based on student's curriculum, see WBL Coordinator for a complete list.

**COREQUISITE(S):**

**GENERAL EDUCATION DISTRIBUTION AREA:**

(example: Social Science Group B)

**GENERAL EDUCATION/PROGRAM OUTCOMES:**

Think Critically

Write and speak effectively

**COURSE OBJECTIVES AND OUTCOMES:**

Students will be able to:

Understand projections and coordinate systems

Be familiar with principles of map design and construction using GIS.

Understand the structure of GIS data models.

Create spatial data or import data from various sources.

Understand the basic theory of spatial analysis.

Create a basic cartographic product.

Be a productive user of ArcGIS software, with the ability to comfortably perform basic commands.

*NCMC MASTER COURSE SYLLABUS*

*COURSE TITLE AND NUMBER: GIS 110 Introduction to Geographic Information Systems I*

**METHODS OF INSTRUCTION:**

Lecture/Lab

**METHODS OF EVALUATION:** Projects, exams, group work

**REQUIRED TEXT AT TIME OF COURSE ADOPTION/REVISION:**

TEXTS: Introducing Geographic Information Systems with ArcGIS, 2<sup>nd</sup> Edition, Michael Kennedy

OPTIONAL SUPPLEMENTARY MATERIALS:

**Reasonable accommodations can be provided for students with diagnosed disabilities. Please contact Learning Support Services for assistance: 231/348-6817.**

**SUGGESTED TIME ALLOWANCE AND SEQUENCE OF INSTRUCTION:**

*(List general content description of what is being covered each week)*

WEEK 1	Introduction to GIS/History of Maps
WEEK 2	Geographic data and data types
WEEK 3	Geodatabases
WEEK 4	Attribute tables
WEEK 5	Projections and coordinate systems
WEEK 6	Data capture
WEEK 7	Creating and Editing Data
WEEK 8	Creating and Editing Data
WEEK 9	Map Design and Thematic mapping
WEEK 10	Queries and selections
WEEK 11	Geoprocessing and spatial analysis
WEEK 12	Geoprocessing and spatial analysis
WEEK 13	Spatial Joins
WEEK 14	Raster Analysis/Remote Sensing
WEEK 15	Extensions-spatial analyst and 3D Analyst
WEEK 16	Use of GIS in the real world.

APPROVED FOR ADOPTION/REVISION BY THE CRD/AP COMMITTEE ON 10/22/08