

North Central Michigan College

NCMC MASTER COURSE SYLLABUS

Last Date Revised ____ 10/13/08 ____

DIVISION/AREA: Liberal Arts

DEPARTMENT: Social Sciences

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: Advanced Concepts in GIS

COURSE ALPHA: GIS

COURSE NUMBER: 130

CATALOG DESCRIPTION:

Advanced theoretical and technical issues in geographic information science utilizing a problems oriented approach. This course will cover the development and implementation of geographic information science solutions and formal documentation of work.

PREREQUISITE(S): GIS 120

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 the core scientific concepts of GIS

Use valid statistical analysis for geospatial problem solving

Develop a sophisticated geospatial model

Understand the major issues involved with real-life GIS management

Be proficient in analysis with ArcGIS/ArcInfo

METHODS OF INSTRUCTION:

Lecture/Lab

METHODS OF EVALUATION:

Projects, exams, group work

REQUIRED TEXT AT TIME OF COURSE ADOPTION/REVISION:

GIS: A Computing Perspective. Second Edition, Michael Worboys and Matt Duckham

OPTIONAL SUPPLEMENTARY MATERIALS:

Reasonable accommodations can be provided for students with documented 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
WEEK 2	Databases, Geospatial Models
WEEK 3	Field Models
WEEK 4	Object Models and Topology
WEEK 5	Spatial Representation: Geometry and Objects
WEEK 6	Spatial Representation: Algorithms
WEEK 7	Spatial Representation: Networking
WEEK 8	Structures and Access
WEEK 9	System Design
WEEK 10	Cartographic Visualization
WEEK 11	Symbolization and Geo-visualization
WEEK 12	Spatial Reasoning and Uncertainty
WEEK 13	Data Quality
WEEK 14	Modeling Time
WEEK 15	Web Authoring and GIS Analysis 1
WEEK 16	Web Authoring and GIS Analysis 2

APPROVED FOR ADOPTION/REVISION BY THE CRD/AP COMMITTEE ON __11/26/08__