FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER:	GIS 2046
COURSE TITLE:	Advanced Geographic Information Systems
PREREQUISITE(S):	GIS 2045
COREQUISITE(S):	None
CREDIT HOURS:	3
CONTACT HOURS/WEEK:	4
CONTACT HOUR BREAKDOWN:	
Lecture/Discussion:	3
Laboratory:	1
Other _____:	
FACULTY WORKLOAD POINTS:	3.5
STANDARDIZED CLASS SIZE ALLOCATION:	24

CATALOG COURSE DESCRIPTION:

This course is a continuation of GIS 2045. Advanced GIS principles, techniques, analysis, and applications will be introduced through lecture and laboratory exercises. Applied experience using GIS software in real world situations will be the central focus of this course.

SUGGESTED TEXT(S):

Chang, Kang-tsung. Introduction to Geographic Information Systems. New York, NY: McGraw-Hill 2006. 3rd Ed. ISBN 0- 07-282682-7.

Price, Maribeth. Mastering ArcGIS. New York, NY: McGraw-Hill 2006. 2nd Ed. ISBN 0-07-298417-1.

IMPLEMENTATION DATE: Spring Term, 2007 (20072)

REVIEW OR MODIFICATION DATE:

Rationale: A Geographic Information System (GIS) is a computer-based data processing tool used to manage and analyze spatial information. There are many applications for GIS, including environmental assessment, analysis of natural hazards, site analysis for business and industry, criminal justice, real estate, location analysis, resource management, and land-use planning.

Intent: This course will analyze and develop the fundamental skills necessary for applications of GIS mapping tools.

COURSE TOPICS	CONTACT HOURS PER TOPIC
I. Suggested Distribution	
A. Terrain Mapping and Analysis	10
1. Data	
2. Terrain Mapping	
3. Slope and Aspect	
4. Surface curvature	
5. Raster vs. TIN	
B. Viewsheds and Watersheds	10
1. Viewshed analysis	
2. Watershed Analysis	
3. Applications	
C. Spatial Interpolation	10
1. Elements	
2. Global Methods	
3. Local Methods	
4. Kriging	
5. Comparison of Spatial Interpolation	
D. Geocoding and Dynamic Segmentation	10
1. Geocoding	
2. Dynamic Segmentation	
3. Applications	
E. Path Analysis and Network Applications	8
1. Path analysis	
2. Network applications	
F. GIS Models and Modeling	8
1. Basic elements of GIS models.	
2. Binary Models	
3. Index Models	
4. Regression Models	
5. Process Models	
G. Exams, Reviews, Summaries	4

PROGRAM TITLE: GIS Technician

COURSE TITLE: Fundamentals of GIS

CIP NUMBER: 0615020200

PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S): TITLES(S):

01.0 APPLY BASIC DRAFTING SKILLS – The student will be able to:

01.04 Prepare advanced civil drawings.
01.10 Prepare title blocks and other formats.
01.12 Compile a portfolio.

04.0 PREPARE CIVIL DRAFTING DRAWINGS – The student will be able to:

04.01 Demonstrate an understanding of civil drafting.
04.02 Demonstrate a knowledge of surveying fundamentals.
04.03 Demonstrate an understanding of mapping scales.
04.04 Demonstrate a knowledge of legal descriptions and plot plans.
04.05 Demonstrate an understanding of contour lines.
04.06 Demonstrate a knowledge of profiles.

06.0 DEMONSTRATE GIS – GEOGRAPHIC INFORMATION SYSTEM – The student will be able to:

06.01 Demonstrate a basic knowledge of GIS.
06.02 Demonstrate an understanding of Global Positioning Systems.
06.03 Demonstrate an understanding of Remote Sensing.

Florida State College
At Jacksonville

Course Learning Outcomes & Assessment For All College Credit Courses

NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

Section 1

COURSE PREFIX AND NUMBER: **GIS 2046**

SEMESTER CREDIT HOURS: **3**

COURSE TITLE: **ADVANCED GEOGRAPHIC INFORMATION SYSTEMS**

Section 2

TYPE OF COURSE: (Click on the box to check all that apply)

- ☐ **AA Elective**
- ☐ **AS Required Professional Course**
- ☐ **College Prep**
- ☒ **AS Professional Elective**
- ☐ **AAS Required Professional Course**
- ☒ **Technical Certificate**
- ☐ **Other** ____
- ☐ **General Education: (For General Education courses, you must also complete Section 3 and Section 7)**

Section 3 (If applicable)

INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

- ☐ **Communications**
- ☐ **Social & Behavioral Sciences**
- ☐ **Mathematics**
- ☐ **Natural Sciences**
- ☐ **Humanities**

Section 4

INTELLECTUAL COMPETENCIES:

- ☒ **Reading**
- ☒ **Speaking**
- ☒ **Critical Analysis**
- ☒ **Quantitative Skills**
- ☒ **Scientific Method of Inquiry**
- ☒ **Writing**
- ☒ **Listening**
- ☒ **Information Literacy**
- ☐ **Ethical Judgment**
- ☒ **Working Collaboratively**

Section 5

	LEARNING OUTCOMES	METHOD OF ASSESSMENT
•	Understand different data types for terrain mapping.	Mapping Project
•	Demonstrate applications for viewsheds and watersheds.	Mapping Project
•	Identify and use different methods for spatial interpolation.	Mapping Project
•	Define geocoding and dynamic segmentation and identify applications of each.	Mapping Project
•	Understand path analysis and network applications.	Mapping Project
•	Identify the basic elements of GIS modeling, and using various types of models.	Mapping Project
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Section 6

Name of Person Completing This Form: Patrick Land

Date: 10/02/2006