

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER:	GIS 2045
COURSE TITLE:	Intermediate Geographic Information Systems
PREREQUISITE(S):	GIS 2040
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 2040. This course will focus on advanced topics in GIS including planning, management, raster-vector integration, and data quality issues. Students will learn how to do spatial modeling, advanced editing and database query mainly in ArcGIS environment. Basic techniques of GPS data collection will also be introduced. Students will learn how to bring all the pieces of Geographic Information Technologies together for advanced analysis and modeling.

SUGGESTED TEXT(S):	Chang, Kang-tsung. <u>Introduction to Geographic Information Systems</u> . New York, NY: McGraw-Hill 2006. 3rd Ed. ISBN 0-07-282682-7.
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	Price, Maribeth. <u>Mastering ArcGIS</u> . New York, NY: McGraw-Hill 2006. 2nd Ed. ISBN 0-07-298417-1.
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IMPLEMENTATION DATE:	Spring Term, 2007 (20072)
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REVIEW OR MODIFICATION DATE:	
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COURSE TOPICS

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 advanced skills necessary for entry into the GIS Technician career path.

CONTACT HOURS
PER TOPIC

I. Suggested Distribution:	
A. Geometric Transformation	8
1. Geometric Transformation	
2. Root Mean Square Error	
3. Interpretation of RMS Errors	
4. Pixel Resampling	
B. Spatial Data Editing	8
1. Location Errors	
2. Spatial Data Accuracy Standards	
3. Topological Errors	
4. Editing	
C. Attribute Data Input and Management	8
1. Attribute Data in GIS	
2. Relational Model	
3. Attribute Data Entry	
4. Manipulation of fields and Attribute Data	
D. Data Display and Cartography	8
1. Cartographic Symbolization	
2. Types of Maps	
3. Typography	
4. Map Design	
5. Map Production	
E. Data Exploration	8
1. Attribute Data Query	
2. Spatial Data Query	
3. Raster Data Query	
4. Geographic Visualization	
F. Vector Data Analysis	8
1. Buffering	
2. Overlay	
3. Distance Measurement	
4. Pattern Analysis	
5. Map Manipulation	

COURSE TOPICS (Continued)

CONTACT HOURS
PER TOPIC

G. Raster Data Analysis	8
1. Data Analysis Environment	
2. Local Operations	
3. Neighborhood Operations	
4. Zonal Operations	
5. Physical Distance Measure Operations	
6. Comparison of Raster- and Vector-Based Data Analysis	
H. 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.

<i>Section 1</i>	
COURSE PREFIX AND NUMBER: <u>GIS 2045</u>	SEMESTER CREDIT HOURS: <u>3</u>
COURSE TITLE: <u>INTERMEDIATE GEOGRAPHIC INFORMATION SYSTEMS</u>	

Section 2
TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> AA Elective	<input type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input checked="" type="checkbox"/> AS Professional Elective	<input type="checkbox"/> AAS Required Professional Course	<input checked="" type="checkbox"/> Technical Certificate
<input type="checkbox"/> Other _____		
<input type="checkbox"/> 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:

<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	

Section 4
INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> Reading	<input checked="" type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis	<input checked="" type="checkbox"/> Quantitative Skills	<input checked="" type="checkbox"/> Scientific Method of Inquiry
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input checked="" type="checkbox"/> Information Literacy	<input type="checkbox"/> Ethical Judgment	<input checked="" type="checkbox"/> Working Collaboratively

<i>Section 5</i>	
LEARNING OUTCOMES	METHOD OF ASSESSMENT
• Understand errors and corrections due to digitization problems.	Mapping Project
• Competency in editing spatial data editing.	Mapping Project
• Input and management of attribute data in GIS.	Mapping Project
• Understanding types of maps, map design, and map production.	Mapping Project
• Querying spatial, attribute, and raster data.	Mapping Project
• Ability to analyze Raster and Vector Data types.	Mapping Project
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Section 6

Name of Person Completing This Form: <u>Patrick Land</u>	Date: <u>10/02/2006</u>
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