9/15/2022 DATE

☐ REQUIRED COURSE
☐ ELECTIVE COURSE

MSD   DIVISION
☐ NEW COURSE
☑ REVISION

Lake Land College
Course Information Form

COURSE NUMBER:	ESC-106	TITLE: (30 Characters Max)		Intro to Geographic Information Systems		

SEM CR HRS:	4	Lecture:	3		Lab:	2			ECH:	5

Course Level:	☐ Gen Ed / IAI ☑ Baccalaureate /Non-IAI	☐ Career/Technical ☐ Dev Ed/ Not in Degree Audit	Clinical Practicum:	0	SOE/ Internship:	0	SOE ECH:	0

COURSE PCS #	11 - 45.0701	IAI Code				Contact Hours (Minutes Per Week)		
Repeatable (Y/N):	N	Pass/Fail (Y/N):	N	Variable Credit (Y/N):	N	Min:	Max:	
						16 Wks	250	8 wks	500

Prerequisites:	
Catalog Description: (40 Word Limit)	Introduction to basic Geographic Information Systems (GIS) concepts, using the ArcGIS-ArcView GIS software program. Course will focus on developing both a theoretical background in the technology and real world applications using GIS techniques.

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Non-Clinical Internship/ SOE
History of Maps	3			
Survey of current GIS applications used across the economy	7	3		
Introduction to cartographic principles	7	3		
Introduction to data structures	5	3		
Define Data requirements	4	3		
Spatial analysis	4	3		
Creating your own data	4	3		
Acquiring Data	3	5		
Mini Project (Assessment-Evaluation)	8	7		
TOTAL	45	30	0	0

EVALUATION

QUIZZES ☐	EXAMS ☑	ORAL PRES ☐	PAPERS ☐
LAB WORK ☑	PROJECTS ☑	COMP FINAL ☐	OTHER ☐

COURSE MATERIALS

TITLE:	Learning ArcGIS I – online text
AUTHOR:	
PUBLISHER:	Esri
VOLUME/EDITION/URL:	
COPYRIGHT DATE:	2014

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		The student will be able to:

History of Maps
a. Early map making
b. Computer aided mapping
c. Map making and Geographic Information Systems GIS
  1) GIS terminology and concepts
  2) Map features versus objects in real world
	3	• Demonstrate the evolution of modern mapping

Survey of GIS Applications Used in Industry Science Business Government (Local to Global) Environmental Science-Agriculture	10	• Produce maps and analysis for targeted industries using geospatial technologies.
Introduction to Cartographic Techniques Map Projections Coordinate Systems	10	• Work with and produce analysis demonstrating an understanding of modern mapping techniques associated with map projection, coordinate systems and transformations.
Introduction to Data Structures Vector Data Raster Data	8	• Demonstrate a comparison and contrast analysis between the two different data formulas used in geospatial technology.

Define Data Requirements Metadata Accuracy Acquisition of Data	7	• Produce metadata associated with quality control issues relating to the accuracy and usability of geospatial data by additional users.
Spatial Analysis Single and Multi-layer Analysis Geographic Queries Overlays	7	• Produce maps and analysis demonstrating spatial analysis techniques used by GIS technicians.
Creating Your Own Data Creating Shapefiles and Geodatabases Editing Spatial Data Editing Attribute Data Importing Tabular Data	7	• Produce datasets demonstrating data development techniques used by GIS technicians.
Acquiring Data Locating Data Sources on the Web Using Purchased Data Data Transformation	8	• Demonstrate techniques associated with downloading data from existing Internet resources and imported into a GIS program for analysis.
Mini Project (Assessment/Evaluation) Planning your Project Acquiring Data Cleaning up a Database Metadata and Data Dictionary Creating Base Map Spatial Analysis Presentation of Project (Paper, Maps, Charts)	15	• Produce and develop a final project. This final project will be used for course assessment and divided into five categories. Each student must score at least 75% or higher in each category to reach course goals for core competency development in the GIS Technician Occupation.
Insert New Line Above this Line		
	75	

COURSE OUTCOMES*	At the successful completion of this course, students will be able to:
	• Demonstrate an understanding of data processing techniques of capturing geospatial data.
	• Demonstrate an understanding of evaluating geospatial data for accuracy and content.
	• Demonstrate an understanding of presenting geospatial data relative to reports, statistical analysis, and maps.

Course Outcomes will be used in the Assessment Software for Outcomes Assessment. Limit to 3 - 5.