

# Course Outcome Guide (COG)

Approved 13 September 2012

<b>Course:</b>	GIS 201 – Advanced Applications in GIS	<b>Credits:</b>	3	<b>Instructor:</b>	TBD
<b>Course Description:</b>	An advanced hands-on applications course designed to extend GIS experience and knowledge and prepare students in becoming self-sufficient GIS technicians. The course follows a hands-on problem solving approach that integrates the interests and analytical needs of participating students. The class will be divided between lecture and lab sections.				
Concepts and Issues	Process Skills	Assessment Tasks	Intended Outcomes		
			Course	General Education or Program	Institutional
<ul style="list-style-type: none"> <li>* GIS</li> <li>* Maps and Cartography</li> <li>* ArcGIS</li> <li>* ArcGIS Extensions</li> <li>* Use of ArcGIS to geocode addresses</li> <li>* Use of ArcGIS to create and manage geodatabases</li> <li>* Spatial analysis with ArcGIS</li> <li>* Statistical analysis with ArcGIS</li> <li>* Creation of TINs for three-dimensional analysis</li> </ul>	<ul style="list-style-type: none"> <li>* Use ArcGIS to select, buffer, clip, dissolve, or otherwise prepare data for analysis.</li> <li>* Use ArcGIS to perform spatial &amp; statistical analysis</li> <li>* Identify the processes involved in creating and maintaining geodatabases in ArcGIS.</li> <li>* Identify the steps involved in geocoding and georeferencing data.</li> <li>* Identify the current trends in GIS research by analyzing professional journals.</li> <li>* Identify the statistical techniques used for performing spatial analysis.</li> <li>* Use ArcGIS to create vector, raster, and TIN data.</li> <li>* Use ArcGIS to create and animate three-dimensional models.</li> </ul>	<ul style="list-style-type: none"> <li>*Participate in class discussions and activities demonstrating knowledge of subject matter.</li> <li>*Complete examinations demonstrating acceptable skill level of concept and process.</li> <li>*Complete textbook readings, questions and problems (both individually and collaboratively) demonstrating acceptable skill levels of concept and process.</li> <li>* Design, construct and test your final project.</li> </ul>	<p>Demonstrate an advanced understanding of data preparation and manipulation.</p> <p>Demonstrate an advanced understanding of map principles and map design.</p> <p>Demonstrate an understanding of geodatabase design and management</p> <p>Demonstrate a basic understanding of statistical processes behind data analysis.</p>	<ol style="list-style-type: none"> <li>1.Mathematics-including numeration literacy and the knowledge and use of statistical and logical processes.</li> <li>2.Analytical-gathering, organizing, and evaluating information</li> <li>3.Analogical-using former knowledge to help comprehend and explain new situations</li> <li>4.Critical Thinking-the ability to identify ad define criteria, understand biases, and construct objective judgments.</li> <li>5.Problem solving-the ability to analyze situations and synthesize solutions.</li> </ol>	<ol style="list-style-type: none"> <li>1. Students will demonstrate effective communication skills.</li> <li>2. Students will use reasoning skills to analyze and solve problems.</li> </ol>

