

### Advanced Geographic Information Systems Certificate

The Department of Geosciences offers an advanced certificate in Geographic Information Systems that permits students to develop an in-depth understanding of programming and spatial data analysis beyond the basic GIS certificate. Two required courses and one additional course in an applied area of geographic information science complete the advanced GIS certificate.

<b>Required Courses</b>		
Programming in GIS	GIS 4102C	3
Spatial Data Analysis	GEO 4167C	3
<b>Choose one of the following applied courses</b>		
Applications of GIS	GIS 4048C	3
<u>Geospatial Databases</u>	<u>GIS 4118</u>	<u>3</u>
Geovisualization and GIS	GIS 4138C	3
Photogrammetry and Aerial Photograph Interpretation	GIS 4021C*	3

\*SUR 4331/SUR 4331L - Digital Photogrammetry Principles and Applications is an approved substitute for Geomatics Engineering students.