OEGS 181. Introduction to Principles of Geographic Information Systems  
4 Credits (3+3P)  
This course will introduce students to fundamental software capabilities of geographic information systems (GIS), along with the underlying conceptual framework. Topics include origins, development, and methods of cartography, components of a GIS, the nature and characteristics of spatial data, methods of data capture and sources of data, review of typical GIS operations and applications. Producing useful, aesthetically pleasing maps will be an integral part of the course. ArcGIS software will be used for this course. May be repeated up to 4 credits.

OEGS 187. GIS Data Acquisition and Management  
4 Credits (3+3P)  
An introduction to defining data needs and evaluating whether a given dataset matches those needs. Students will explore some common geographic data formats used in ArcGIS and learn about sources of data and maps that can be incorporated into a GIS project. The student will learn the advanced functionality and versatility of using geodatabases. The student will demonstrate how to design and build a geodatabase, migrate existing data to a geodatabase and edit data stored in a geodatabase. Methods for georeferencing scanned maps, aerial photos and computer aided drafting files will be explored and discussed. May be repeated up to 4 credits.  
Prerequisite(s): OEGS 181.

OEGS 231. Introduction to GIS Spatial Analysis  
4 Credits (3+3P)  
This course aims to provide students with the knowledge and skills necessary to investigate the spatial patterns which result from social and physical processes operating on or near the Earth's surface. Essential theoretical concepts of quantitative geography are examined, including measures of geographical distribution (including point and areal pattern analysis) and spatial autocorrelation, interpolation and network connectivity. Students will also be introduced to ArcView (online GIS) and the open source programs such as QGIS and GRASS. May be repeated up to 4 credits.  
Prerequisite(s): OEGS 181.

OEGS 291. Special Topics in Geographic Information Systems  
1-3 Credits (1-3)  
Topics to be announced in the Schedule of Classes. May be repeated up to 12 credits. Restricted to Community Colleges campuses only.