

GEOGRAPHIC INFORMATION SYSTEMS (GIS)

Contact Information

Division: Science (PS - 148)

Division Phone Number: (909) 384-8645

Faculty Chairs: Todd Heibel (theibel@sbccd.edu), Ph.D. and Matthew Robles (mrobles@sbccd.edu), M.S.

- Geographic Information Systems Certificate of Achievement (<http://catalog.valleycollege.edu/degree-certificate-program-index/geographic-information-systems-gis/geographic-information-systems-certificate-achievement/>)

GIS 039 1 Unit

Global Positioning Systems (GPS) Field Techniques

Lab: 54 contact hours

Advisory: GIS 135

The Global positioning system (GPS) is a satellite-based navigation system comprised of a network of 24 satellites placed into orbit by the US Department of Defense. The aim of this course is to introduce students to the principles of the GPS and to demonstrate its application to GIS. GPS basic components are covered, including satellites, ground control stations, antennae, and receivers. GIS background or work experience in the field are recommended to succeed in this course.

Associate Degree Applicable

GIS 098 1-4 Units

GIS Work Experience

WRKEX: 300 contact hours

Prerequisite/Corequisite: GIS 135

This course involves supervised training, in the form of on the job employment that will enhance the student's knowledge in the selected field of study. The student's major and job must match. For paid work, 75 hours = 1 unit; for volunteer work, 60 hours = 1 unit. Students may earn a total of 16 units toward graduation in Work Experience 098 courses. See department for specific guidelines.

Associate Degree Applicable

GIS 100 3 Units

Map Interpretation and Geospatial Analysis

Lecture: 36 contact hours

Lab: 54 contact hours

Advisory: ENGL 015 or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process.

This class is an introduction to maps, images and geospatial techniques and technologies. The technologies covered in this course include map and aerial photograph interpretation, tabular data, spatial statistics, cartography, Global Positioning Systems (GPS), Internet mapping, remote sensing and Geographic Information Systems (GIS), all of which aid in data collection, analysis and presentation. This course is also offered as GEOG 100.

Associate Degree Applicable

Transfers to CSU only

C-ID: GEOG 150

GIS 130 3 Units

Introduction to Geographic Information Systems (GIS)

Lecture: 36 contact hours

Lab: 54 contact hours

Advisory: ENGL 015 or eligibility for ENGL 101 or ENGL 101H as determined by the SBVC assessment process and MATH 942.

This course provides an introduction to the fundamentals of Geographic Information Systems (GIS), including the history of automated mapping. The course includes a brief introduction to basic cartographic principles, including map scales, coordinate systems and map projections. GIS hardware and software are explored, as are various applications of GIS technology used in environmental science, business and government. (This course is also offered as GEOG 130).

Associate Degree Applicable

Transfers to both UC/CSU

C-ID: GEOG 155

GIS 133 3 Units

GIS Cartography and Base Map Development

Lecture: 36 contact hours

Lab: 54 contact hours

Prerequisite: GIS 130 or GEOG 130

This course introduces the nature of cartography, standard cartographic conventions, and graphic symbology. Map projections, scale, types of thematic maps, and map accuracy are reviewed. Current industry standard techniques used in GIS base map development are employed, including production and presentation techniques of professional quality maps.

Associate Degree Applicable

Transfers to both UC/CSU

GIS 134 3 Units

Data Acquisition and Management

Lecture: 36 contact hours

Lab: 54 contact hours

Prerequisite: GIS 130

This course addresses the interpretation and understanding of a variety of data formats available in GIS. It introduces the fundamental concepts of primary GIS data creation and discusses quantitative techniques for collection, classification, and management of geographical data.

Associate Degree Applicable

Transfers to CSU only

GIS 135 3 Units

Spatial Analysis with GIS

Lecture: 36 contact hours

Lab: 54 contact hours

Prerequisite: GIS 130

This course is an introduction to spatial analysis with fundamental concepts and analytical procedures used to simplify complex spatial modeling. Specific methods covered include spatial queries, buffering, overlay, interpolation, network analysis, surface analysis, and spatial autocorrelation.

Associate Degree Applicable

Transfers to CSU only

GIS 136 3 Units

GIS for Science, Government, and Business

Lecture: 36 contact hours

Lab: 54 contact hours

Prerequisite: GIS 135

This course introduces students to the various GIS techniques deployed to help government, businesses, and consulting firms to operate in a constantly changing social, physical, economic, and political environment. Government agencies and businesses today face challenges that force them to think beyond traditional, non-geographic approaches to problem solving. Students are introduced to data integration, maps, and GIS outputs.

Associate Degree Applicable

Transfers to CSU only

GIS 137 3 Units

GIS Advanced Applications

Lecture: 36 contact hours

Lab: 54 contact hours

Prerequisite: GIS 135

This course provides hands-on training in advanced applications of GIS using ArcView and ArcInfo, and a review of Visual Basic for Applications (VBA) for customizing ArcGIS. It includes introduction to ArcGIS Server, ArcIMS, and building maps and models for publishing to the web. Students will learn to build web applications with GIS capabilities using Application Service Provider (ASP).

Associate Degree Applicable

Transfers to CSU only

GIS 222 1-3 Units

Independent Study in Geographic Information Systems

DIR: 54 contact hours

Prerequisite: GIS 130 or GIS 131

Students with previous course work in GIS may do assigned projects involving research and analysis of selected topics. This independent study is for students who are interested in furthering their knowledge of GIS. Prior to registration, a written contract must be prepared jointly by the instructor and the student.

Associate Degree Applicable

Transfers to CSU only