

# GEOGRAPHY & PLANNING (GEOG)

## **GEOG 505 Geographic Information Systems (3 Units)**

Introduction to the principles and concepts underlying geographic information systems (GIS) and their application in professional practice and academic research. Laboratory. (Formerly 3350:505)

## **GEOG 507 Advanced Geographic Information Systems (3 Units)**

Prerequisite: GEOG 505 or permission. Advanced instruction in the theory and application of geographic information systems (GIS) including hands-on experience with both raster and vector GIS. Laboratory. (Formerly 3350:507)

## **GEOG 509 Archaeogeophysical Survey (3 Units)**

Prerequisite: Permission. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geological and archaeological interpretation. (Formerly 3350:509)

## **GEOG 515 Environmental Planning (3 Units)**

Scientific and technical principles for decision-making in planning, with emphasis on soils, land use, and water quality issues. Data sources and methods of site evaluation. (Formerly 3350:515)

## **GEOG 520 Urban Geography (3 Units)**

Spatial structure of urban systems; interaction between cities; internal structure of cities. Perspectives on urban change; contemporary urban geographic problems; urban and regional planning issues. (Formerly 3350:520)

## **GEOG 522 Transportation Systems Planning (3 Units)**

Study and analysis of transportation systems from a geographic perspective. Emphasis on transportation problems and issues, elements of transportation planning. (Formerly 3350:522)

## **GEOG 524 Military Geography (3 Units)**

Influence of physical and human geography on military operations and military history. Role played by geography in international conflicts. (Formerly 3350:524)

## **GEOG 532 Land Use Planning Law (3 Units)**

Acquaint student with past and present approaches to land use control in the United States and examine the political, economic, social and legal forces which have shaped existing land-use legislation. (Formerly 3350:532)

## **GEOG 533 Practical Approaches to Planning (3 Units)**

Role of geographic investigation in city, regional and resource planning. (Formerly 3350:533)

## **GEOG 537 Planning Analysis & Projection Methods (3 Units)**

Introduction to the primary analytic techniques for small-area demographic and economic analysis and projection. (Formerly 3350:537)

## **GEOG 538 Land Use Planning Methods (3 Units)**

Application of GIS and other computer-based tools to the preparation, implementation and evaluation of comprehensive land use plans. (Formerly 3350:538)

## **GEOG 539 History of Urban Design & Planning (3 Units)**

Origins of human settlements and planning from the perspective of urban design and related societal trends. Comparison of world regional and historical urban forms. Experience in 'reading' settlements as visual landscapes. (Formerly 3350:539)

## **GEOG 540 Cartography (3 Units)**

Theoretical and practical applications of cartographic principles used to design and produce maps for research reports, public presentations, publication, and other professional uses. (Formerly 3350:540)

## **GEOG 541 Global Positioning Systems (GPS) (1 Unit)**

Fundamentals of Global Positioning System (GPS), with emphasis on geographic and planning activities. Includes hands-on exercises. (Formerly 3350:541)

## **GEOG 542 Cartographic Theory & Design (3 Units)**

Prerequisite: GEOG 540 or permission of instructor. Principles and techniques of thematic mapping. Stresses maps as communication tools. Examines principal thematic mapping techniques and means of presenting quantitative and qualitative data. Laboratory. (Formerly 3350:542)

## **GEOG 543 Urban Applications in GIS (3 Units)**

Prerequisite: GEOG 505 or permission. Applications of GIS in the urban context, including methods used for analysis of population density gradients, migration, and accessibility. (Formerly 3350:543)

## **GEOG 544 Applications in Cartography & Geographic Information Systems (3 Units)**

Prerequisite: GEOG 405 or GEOG 505 or permission of instructor. Application of analytic and presentation techniques from cartography and geographic information systems to practical problems in geography and planning. Laboratory. (Formerly 3350:544)

## **GEOG 545 GIS Database Design (3 Units)**

Prerequisite: GEOG 505 or permission. Introduction to theory and concepts of geographic data modeling, geodatabase design, and topology. Emphasis on current practices and methodologies in geography and planning. (Formerly 3350:545)

## **GEOG 546 GIS Programming and Customization (3 Units)**

Prerequisite: GEOG 505 or permission. Introduction to use of scripting languages for customizing the interface and extending the functionality of desktop GIS software. (Formerly 3350:546)

## **GEOG 547 Remote Sensing (3 Units)**

Concepts, systems, and methods of applying aerial photography, satellite imagery, and other remote-sensing data for analyzing geographic, geological, and other earth phenomena. (Formerly 3350:547)

## **GEOG 549 Advanced Remote Sensing (3 Units)**

Prerequisite: GEOG 547 or permission. Current research in remote sensing. Applications in study of human cultural and biophysical environment. Practice in planning, design, execution and interpretation of remote sensing studies. (Laboratory.) (Formerly 3350:549)

## **GEOG 550 Development Planning (3 Units)**

A study of planning concepts and techniques for developing countries, including growth and development, planning agencies, regional inequities and alternative approaches. (Formerly 3350:550)

## **GEOG 560 Political Geography (3 Units)**

Principles and theory in contemporary domestic and international political geographies. Emphasis on the changing local and global patterns of electoral politics, security, and diplomacy. (Formerly 3350:560)

## **GEOG 581 Research Methods in Geography & Planning (3 Units)**

Investigation of library and archive resources. Emphasis on development of professional writing skills. (Formerly 3350:581)

**GEOG 583 Spatial Analysis (3 Units)**

Analysis of mapped statistical surfaces. Principles for use of map as model for statistical evidence, prediction, hypothesis testing. (Formerly 3350:583)

**GEOG 589 Special Topics in Geography (1-3 Units)**

(May be repeated) Selected topics of interest in geography. (Formerly 3350:589)

**GEOG 590 Workshop in Geography (1-3 Units)**

(May be repeated for a total of six credits) Group studies of special topics in geography. (Formerly 3350:590)

**GEOG 595 Soil & Water Field Studies (3 Units)**

Properties, origins and uses of major soil and water regime landscapes. Stresses relationships between soil and the hydrological cycle, urbanization, suburbanization and agriculture. Field trips required. (Formerly 3350:595)

**GEOG 596 Field Research Methods (3 Units)**

Field work enabling student to become competent in collecting, organizing and analysis of data while carrying out field research projects. Field trips required. (Formerly 3350:596)

**GEOG 597 Regional Field Studies (1-3 Units)**

Off-campus intensive study of geographic features of a region or regions through direct observations and travel using appropriate field study methods. (repeatable up to 6 credits) (Formerly 3350:597)

**GEOG 600 Seminar in Geography and Planning (3 Units)**

(May be repeated for a maximum of six credits each) Prerequisite: permission. Investigation and analysis of selected topics in particular fields of geography. Specialization indicated by second portion of title. (Formerly 3350:600)

**GEOG 601 Seminar in Geography and Planning (3 Units)**

(May be repeated for a maximum of six credits each) Prerequisite: permission. Investigation and analysis of selected topics in particular fields of geography. Specialization indicated by second portion of title. (Formerly 3350:601)

**GEOG 630 Planning Theory (3 Units)**

Introduction to the political, institutional and ethical foundations and procedural theories of urban and regional planning. (Formerly 3350:630)

**GEOG 631 Facilities Planning (3 Units)**

Study of need, process and limitation of urban facilities planning. (Formerly 3350:631)

**GEOG 633 Comparative Planning (3 Units)**

A survey of national, regional and local planning implementation measures in use in the developed world. Particular attention will be given to the planning experiences of European nations and their impact on American planning theory and practice. (Formerly 3350:633)

**GEOG 680 Advanced Spatial Analysis (3 Units)**

Prerequisite: GEOG 583 or permission. Advanced concepts and methodologies in geographic research. Emphasis on quantitative revolution in geographical analysis including multivariate procedures as factor, discriminant and economical analysis, and multidimensional scaling. (Formerly 3350:680)

**GEOG 685 Planning Internship (3 Units)**

Prerequisite: permission. Individual experience in selected planning agencies for supervised performance in professional planning work. (May be repeated but only 3 credits may be applied to total credit hours needed for degree requirements.) Credit/Non-Credit. (Formerly 3350:685)

**GEOG 687 History of Geographic Thought (3 Units)**

Critical review of major developments in geographic concepts from ancient times to present. (Formerly 3350:687)

**GEOG 695 Graduate Colloquium (1 Unit)**

(May be repeated for a maximum of four credits.) Lecture series on topics of interest in geography and planning, by academic and non-academic professionals for both faculty and students. Does not satisfy degree requirements. Credit/noncredit. (Formerly 3350:695)

**GEOG 698 Individual Reading & Research (1-3 Units)**

(May be repeated for a total of six credits) Prerequisite: permission of instructor. Intensive investigation of selected topics under guidance of faculty member. (Formerly 3350:698)

**GEOG 699 Thesis Research (1-6 Units)**

Independent and original work toward a thesis. (Formerly 3350:699)