

---

# Geography

In the College of Arts and Letters

**OFFICE: Storm Hall 323**

**TELEPHONE: 619-594-5437 / FAX: 619-594-4938**

## Faculty

Stuart C. Aitken, Ph.D., Professor of Geography,  
Chair of Department

Edward Aguado, Ph.D., Professor of Geography,  
Master's Degree Programs Adviser, and Assistant Dean for  
Student Services, Policy and Curriculum in the Division of  
Graduate Affairs

George Christakos, Ph.D., Professor of Geography, The Stephen and  
Mary Birch Foundation Chair in Geographical Studies

Allen S. Hope, Ph.D., Professor of Geography

Piotr Jankowski, Ph.D., Professor of Geography

John F. O'Leary, Ph.D., Professor of Geography

Douglas A. Stow, Ph.D., Professor of Geography,  
Doctoral Program Adviser

John R. Weeks, Ph.D., Professor of Geography

Fernando Bosco, Ph.D., Associate Professor of Geography

André Skupin, Ph.D., Associate Professor of Geography

Ming-Hsiang Tsou, Ph.D., Associate Professor of Geography

Li An, Ph.D., Assistant Professor of Geography

Trent Biggs, Ph.D., Assistant Professor of Geography

Kathleen A. Farley, Ph.D., Assistant Professor of Geography

Pascale J. Marcelli, Ph.D., Assistant Professor of Geography

Katherine Elizabeth Swanson, Ph.D., Assistant Professor of  
Geography

## The Stephen and Mary Birch Foundation Chair in Geographical Studies

The Stephen and Mary Birch Foundation Chair in Geographical Studies was created through the Birch Foundation's grant to the Department of Geography to endow a chair and create a Center for Earth Systems Analysis Research. Dr. George Christakos, internationally recognized for his expertise in theory and methodology of spatial analysis and mathematical modeling applied to environmental, ecological, health, and geographical systems is the third holder of the chair.

## Associateships

Approximately 45 graduate teaching associateships and graduate research associateships in geography are available to highly qualified students. Applications and additional information may be secured from the department. The deadline for submitting applications for teaching associateships or research associateships is March 1 for the Master's degree programs and February 1 for the Doctor of Philosophy degree program. Applications for associateships must include transcripts, three letters of recommendation, and Graduate Record Examination (GRE) scores, and a statement of interests and goals. Our graduate teaching associateships program can prepare students for a teaching career.

## General Information

The Department of Geography offers graduate study leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees in geography. These degrees provide the essential education, technical training, and creative experience necessary for professional activity or college-level teaching. Graduate programs are generally assigned around one of the following systematic areas:

### Group A – Systematic Areas

#### Human Geography

Comparative Urban Structure  
Economic Geography  
Social and Critical Theory  
Social and Political Geography  
Urban Cultural Geography  
Urban and Regional Modeling

#### Environmental Geography

Society and Environment  
Watershed/Ecosystem Analysis

#### Physical Geography

Biogeography  
Climatology  
Geomorphology  
Hydrology

### Group B – Spatial Analytical Techniques

Cartography and Internet Mapping  
Geocomputation and Spatial Modeling  
Geographic Information Systems  
Remote Sensing and Image Processing  
Spatial Quantitative and Qualitative Methods

The main regional foci are Latin America, Western Europe, the Pacific Rim, Mexico-U.S. borderlands, arctic, and arid lands. Further information on systematic areas, techniques and regional foci, as well as general program information can be obtained through the Department of Geography's Web site at <http://geography.sdsu.edu>.

The master's degree programs are designed to provide advanced training for a) students who plan to terminate their graduate studies at the master's level, and b) those who anticipate additional work leading to the doctoral degree in geography or related fields.

The Master of Arts degree program is designed around one of the systematic areas previously listed in Group A and will generally also include coursework in one of or more technical skills in Group B. The Master of Science program has two concentrations (1) geographic information science, and (2) watershed science.

The Doctor of Philosophy program, offered jointly with the University of California, Santa Barbara, provides advanced training for research and teaching at the highest academic level.

Research and instructional facilities provided by the Department of Geography include a map library, the Stephen and Mary Birch Center for Earth Systems Analysis Research (CESAR), an image processing/GIS center, laboratories for physical geography, cartography, remote sensing and aerial interpretation, and equipment for field studies.

## Admission to Master's and Doctoral Study

Students applying for admission should electronically submit the university application available at <http://www.csumentor.edu> along with the \$55 application fee.

All applicants must submit admissions materials separately to SDSU Graduate Admissions and to the Department of Geography.

### Graduate Admissions

The following materials should be submitted as a complete package directly to:

Graduate Admissions  
Enrollment Services  
San Diego State University  
San Diego, CA 92182-7416

(1) Official transcripts (in sealed envelopes) from all postsecondary institutions attended;

Note:

- Students who attended SDSU need only submit transcripts for work completed since last attendance.
- Students with international coursework must submit both the official transcript and proof of degree. If documents are in a language other than English, they must be accompanied by a certified English translation.

(2) GRE scores (<http://www.ets.org>, SDSU institution code 4682);

(3) TOEFL score, if medium of instruction was in a language other than English (<http://www.ets.org>, SDSU institution code 4682).

#### **Master of Arts Degree in Geography**

#### **Master of Science Degree in Geography**

The following materials should be sent to:

Department of Geography  
Master's Program Administrative Coordinator  
San Diego State University  
San Diego, CA 92182-4493

- (1) Department application form (available online at [http://geography.sdsu.edu/Programs/Masters/m\\_apply.html](http://geography.sdsu.edu/Programs/Masters/m_apply.html));
- (2) A statement of your geographic research interests and professional goals, and the names of three SDSU geography faculty who would be suitable program advisers;
- (3) Three letters of recommendation.

#### **Ph.D. Degree in Geography**

The following materials should be sent to:

Department of Geography  
Graduate Administrative Coordinator  
San Diego State University  
5500 Campanile Drive  
San Diego, CA 92182-4493

- (1) Department application form (available online at [http://geography.sdsu.edu/Programs/PhD/p\\_forms.html](http://geography.sdsu.edu/Programs/PhD/p_forms.html));
- (2) A statement of your geographic research interests and professional goals, and the names of SDSU and UCSB geography faculty who would be suitable program advisers;
- (3) Three letters of recommendation.

## **Section I. Master's Degree Programs**

### **Admission to the Degree Curriculum**

Admission application deadline is May 1. Students applying for admission and a graduate assistantship must have their applications complete and all supporting materials received by March 1.

The Department of Geography does not encourage students to apply for admission for spring semester. Completed applications for spring admission must be submitted to the Department of Geography by September 15.

Satisfaction of the minimum requirements of San Diego State University and of the Department of Geography does not guarantee admission to the master's program for either the fall or spring semester. Department requirements are normally a minimum grade point average of 3.0 in the last 60 semester units taken as an undergraduate and a satisfactory combined score (minimum 1000) on the verbal and quantitative section of the GRE. The minimum TOEFL score is 550. Applicants taking the Computer Based Test of English must present a score of 213 or above.

Candidates whose preparation is considered insufficient by the master's advising committee will be required to complete specified courses in addition to the minimum 30 units required for the degree.

We will notify applicants of our recommendation on admission to the master's program in geography after application files in Enrollment Services and in the Department of Geography are complete. Enrollment Services will notify you of admission to the Division of Graduate Affairs.

### **Advancement to Candidacy**

All students must satisfy the general requirements for candidacy, as stated in Part Two of this bulletin.

### **Specific Requirements for the Master of Arts Degree**

#### **(Major Code: 22061)**

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete a graduate program of at least 30 units of upper division and graduate courses selected with the approval of the master's advising committee. The department requires students to complete all degree requirements within seven years of the semester that they entered the M.A. program.

The requirements for students electing the Master of Arts degree program are as follows:

1. A minimum of 30 units of courses numbered 500 or above as approved by the geography department master's advising committee. At least 24 of these units must be from the geography department.
2. A minimum of 18 of the 30 units of coursework must be 600- or 700-level courses.
3. Geography 700 and 701, normally taken during the first two semesters.
4. Completion of Geography 799A (Thesis).

### **Specific Requirements for the Master of Science Degree**

#### **(Major Code: 22061)**

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete a graduate program of at least 30 units of upper division and graduate courses selected with the approval of the master's advising committee. The department requires students to complete all degree requirements within seven years of the semester that they entered the M.S. program.

#### **Concentration in Geographic Information Science**

1. A minimum of 30 units of which not more than six may be in disciplines other than geography and at least 15 units from 600- and 700-numbered courses in geography.
2. Geography 700 and 701.
3. A thesis in the area of geographic information science (Geography 799A).
4. Fifteen units from the following list of geographic information science courses: Geography 581 through 585, 587 through 589, 683 through 688L, 780.
5. Additional 500-, 600-, and 700-level coursework determined in consultation with the student's thesis adviser.

#### **Concentration in Watershed Science**

1. A minimum of 30 units with no more than nine units from disciplines other than geography and at least 15 units from 600- and 700-numbered courses.
2. Geography 700 and 701.
3. A thesis in the area of watershed science (Geography 799A).
4. Geography 511 and six units of methods courses selected from Geography 581 through 585, 587 through 589, 683 through 688L, 780.
5. Advanced coursework (12 units) in watershed science to be determined in consultation with the student's adviser.

**Section II.  
Doctoral Program**

<http://geography.sdsu.edu>

**General Information**

**(Major Code: 22061)**

The cooperating faculties of the Department of Geography at San Diego State University and the University of California, Santa Barbara, offer a joint doctoral program in geography. The research interests of the participating faculty members cover a range of geographic problems. The joint doctoral program offers work leading to the Ph.D. in the following systematic areas (Group A) with supporting development of skills in spatial techniques (Group B) as previously listed.

Each student's program is designed around one of the areas selected from Group A and at least one of the technique emphases selected from Group B. Students must attain the requisite skills in programming, statistics, mathematics, and foreign language necessary to successfully pursue their research goals.

**Admission to the Degree Curriculum**

Applicants for admission to the doctoral program in geography offered jointly by SDSU and UCSB must meet the general requirements for admission to both universities with classified graduate standing as outlined in the respective current catalogs. There are no inflexible requirements for entrance to graduate study in this program, but a strong background in geography or a closely related field is essential. Admission to the program requires acceptance by the graduate deans and by the participating departments at UCSB and SDSU. Applications from outstanding students in other majors are encouraged, but such students should expect to take additional courses during their first year to improve their background. All students entering the program should have completed a lower and upper division statistics course and the appropriate mathematics and computer science courses for the specialty chosen.

Applications must be received by the Department of Geography no later than February 1 for the Ph.D. program.

**Application.** Deadline is February 1 for the upcoming fall semester. Applicants are generally not admitted for the spring semester. Review procedures begin early February with admission notification beginning mid-March.

Applications must be received by the Department of Geography no later than February 1 for the Ph.D. program.

A high undergraduate grade point average, normally 3.25 or higher for the last 60 units taken (90 quarter units), and/or a graduate grade point average of 3.50 or higher are required for admission. A minimum combined score of 1100 on the GRE is expected. Scores on both the verbal and quantitative sections of the GRE should exceed the 50th percentile.

Satisfaction of the minimum requirements at San Diego State University or the Department of Geography does not guarantee admission to the doctoral program.

**Specific Requirements**

**Residency Requirements.** After formal admission to the joint doctoral program, the student must spend at least one academic year in full-time residence on each of the two campuses. The definition of residence must be in accord with the regulations of UCSB and SDSU. Usually, the first year is spent at SDSU, the second at UCSB, and subsequent years at SDSU.

**Advising Committee.** Upon admission to the program, the joint doctoral graduate advisers of the two institutions will establish an advising committee for each student. The committee will consist of four faculty members, normally two from each campus. In consultation with the student, the committee will develop a course of study, including identifying academic deficiencies and recommending remedies for them. The advising committee will be the official advising group for the student until a joint doctoral committee has been chosen and recommended to the Divisions of Graduate Affairs by the advising committee.

**Language Requirement.** There is no specific foreign language requirement for this program, but knowledge of a foreign language may be deemed necessary by the advising committee to successfully pursue the student's research goal.

**Course Requirements.** Students admitted into the joint doctoral program are expected to take common core courses which include: Geography 700 (Seminar in Geographic Research Design) and Geography 701 (Seminar in Development of Geographic Thought). No specified number of courses beyond core courses is required for the doctoral degree. However, students are expected to have a broad understanding of modern geographic principles in addition to a specialist's competence in their own sub-field. In addition, all doctoral students must have computation skills and knowledge of spatial analysis.

**Qualifying Examinations**

**Joint Doctoral Committee.** When a doctoral student makes a definitive selection of the systematic area and technique emphasis as well as the general topic of their dissertation research, she/he will select a dissertation supervisor (major professor), who can be from either department but who normally will be a member of the SDSU faculty, and the members of his/her joint doctoral committee. The joint doctoral committee shall be composed of at least four members (with the rank of Assistant Professor or above), two from the SDSU department and two from the UCSB department. The committee may be augmented as needed by an additional member from outside geography at UCSB or a member of the faculty at SDSU from outside of geography or, when authorized, another university. Chaired by the student's major professor, the joint doctoral committee shall be responsible for evaluating the dissertation proposal, administering and evaluating the qualifying examination, judging the dissertation, and administering and evaluating the dissertation defense.

**Qualifying Examinations.** The process of qualifying to write a Ph.D. dissertation has three steps. First, the student must take a written qualifying examination that normally consists of three portions devoted to: 1) the student's substantive area, 2) her or his technical field(s) of interest, and 3) general geographic thought and inquiry. Second, the student prepares a dissertation proposal that describes the dissertation topic, summarizes the relevant background literature, and presents a comprehensive research plan for the dissertation. Third, the student's doctoral committee will conduct an oral qualifying examination to ensure that the student possesses the full knowledge and competence required to carry out her or his dissertation research. The doctoral committee will assign a pass or fail grade for each examination. Passing the written examination allows the student to proceed to the preparation of the dissertation proposal. The doctoral committee must conditionally approve the dissertation proposal before the student takes the oral qualifying examination. Passing the oral examination signifies that the doctoral dissertation proposal is approved. A student may repeat each examination once.

Upon satisfactory completion of the oral examination and prescribed coursework, the student must apply to the graduate dean at UCSB for advancement to candidacy. Upon payment of the candidacy fee to UCSB, and after approval by the graduate deans of both campuses, students will be notified of their advancement to candidacy by the UCSB graduate dean.

**Dissertation.** Following the successful completion of all prescribed coursework and qualifying examinations, the major remaining requirement for the Ph.D. degree will be the satisfactory completion of a dissertation consisting of original research of publishable quality carried out under the guidance of the major professor. Approval of the completed dissertation by the joint doctoral committee implies that an organized investigation yielding substantial conclusions of interest which expand the frontiers of knowledge and understanding in the discipline has been carried out. Results must be reported in a manner demonstrating the ability of the candidate to effectively prosecute and report independent investigation.

The requirement for completing and filing the dissertation, including the number of copies required, will be decided jointly by the graduate deans and in accordance with regulations of the Divisions of Graduate Affairs.

**Final Examination.** The final examination, organized and administered by the joint doctoral committee, shall consist of a dissertation defense, before the joint doctoral committee. A public lecture will be presented in addition to this defense with the committee.

**Award of the Degree.** The Doctor of Philosophy degree in geography will be awarded jointly by the Regents of the University of California and the Trustees of The California State University in the names of both institutions.

**Financial Support.** The Department of Geography at SDSU has a number of research and teaching associateships available to support students admitted to the joint doctoral program. All students applying to admission to the joint doctoral program will be considered for financial support.

## Courses Acceptable on Master's and Doctoral Degree Programs in Geography (Regr)

Refer to *Courses and Curricula and Regulations of the Division of Graduate Affairs* sections of this bulletin for explanation of the course numbering system, unit or credit hour, prerequisites, and related information.

### UPPER DIVISION COURSES

#### **GEOG 504. Coastal and Submarine Geomorphology (3)**

Prerequisites: Geography 101 and Mathematics 121 or 150.

Analysis of marine waves, of their modification in shallow waters, of coastal currents and tides. Interpretation of coastal and submarine relief in relation to environmental processes and their modification by humans. Field trips may be arranged.

#### **GEOG 505. Fluvial Geomorphology (3)**

Prerequisite: Geography 401.

Physical foundation of river systems. Geographic variability in river channels and influence of human activities on fluvial forms and processes. Role of fluvial geomorphology in river and watershed management. Field trips may be arranged.

#### **GEOG 507. Geography of Natural Vegetation (3)**

Prerequisite: Geography 101.

The natural vegetation associations of the world, their distribution, classification and development, including relationship to human activities. Field trips may be arranged.

#### **GEOG 509. Regional Climatology (3)**

Prerequisite: Geography 101 or 103.

The causes of climatic types as they occur throughout the world. Principles of several climatic classifications.

#### **GEOG 511. Hydrology and Global Environmental Change (3)**

Prerequisite: Geography 101 or 103.

Hydrologic processes and regimes, how these are affected by environmental change and how hydrologic process and regimes affect patterns of environmental change. Processes operating at global, regional, and local scales are examined, including land-use/land-cover change and climate change.

#### **GEOG 554. World Cities: Comparative Approaches to Urbanization (3)**

Prerequisite: Geography 354.

Worldwide trends in urbanization. Case studies of selected cities from various culture areas with focus on international variations in city structure and urban problems.

#### **GEOG 556. Location and Spatial Structure of Cities (3)**

Prerequisite: Geography 354 or three units of upper division coursework in a related field.

Principles and characteristics of urban growth and settlement; the internal structure and functioning of urban centers; spatial models of urban land use; growth management, transportation problems, and sociopolitical urban problems. Field trips may be arranged.

#### **GEOG 559. Urban Transportation Geography (3)**

Prerequisite: Three units of upper division urban or transportation coursework in geography or related field.

Urban transportation networks and their effects, past, present and future, on the economy and physical structure of the urban region. Field trips may be arranged.

#### **GEOG 570. Environmental Resource Conservation (3)**

Prerequisite: Geography 370.

Management of environmental and natural resources. Effective programs and the institutional frameworks in which they occur.

#### **GEOG 572. Land Use Analysis (3)**

Prerequisite: Geography 370.

Problems of maintaining environmental quality in the process of land conversion from rural to urban uses with emphasis on land capability and suitability studies. Field trips may be arranged.

#### **GEOG 573. Population and the Environment (3)**

Prerequisite: Geography 102.

Population distribution, growth, and characteristics as they relate to environmental degradation, both as causes and consequences. Roles of women, sustainable development, carrying capacity, optimum population, and policy initiatives in relationships between population and environment.

#### **GEOG 574. Water Resources (3)**

Prerequisite: Geography 370.

Occurrence and utilization of water resources and the problems of water resource development. Field trips may be arranged.

#### **GEOG 575. Geography of Recreational Land Use (3)**

Prerequisite: Geography 101 or 102.

Importance of location and environment in the use, management, and quality of recreation areas. Field trips are required.

#### **GEOG 581. Cartographic Design (3)**

Two lectures and three hours of laboratory.

Prerequisite: Geography 381.

Computer-assisted map production techniques with emphasis on map design and color use.

#### **GEOG 583. Internet Mapping and Distributed GIServices (3)**

Two lectures and three hours of laboratory.

Prerequisite: Geography 381 or 484.

Current development of Internet mapping and cartographic skills for web-based maps (multimedia, animation, and interactive design). Fundamental theories of distributed GIS to support Internet mapping with focus on distributed component technologies, Internet map servers and web services. Not open to students with credit in Geography 582.

#### **GEOG 584. Geographic Information Systems Applications (3)**

Two lectures and three hours of laboratory.

Prerequisite: Geography 484 or 587.

Conceptualization, completion, and implementation of geographic information systems (GIS) at local, regional, national, and global levels. Spatial analysis and modeling with GIS. GIS in planning, management, and research.

#### **GEOG 585. Quantitative Methods in Geographic Research (3)**

Prerequisite: Geography 385.

Application of statistical techniques to geographic research including simple regression and correlation, multiple regression, classification, factor analysis, and computer applications.

#### **GEOG 586. Qualitative Methods in Geographic Research (3)**

Prerequisite: Geography 102.

Application of qualitative techniques to geographic research including reflexive survey design and in-depth interviews, non-obtrusive methods, landscape interpretation, textual methods and discourse analysis, feminist criticism, and humanistic and historical materialist perspectives on measurement.

#### **GEOG 587. Remote Sensing of Environment (4)**

Three lectures and three hours of laboratory.

Prerequisite: Geography 101. Recommended: Physics 180A-180B.

Techniques for acquiring and interpreting remotely sensed data of environment. Electromagnetic radiation processes, aerial photographic systems, and human interpretation of aerial and satellite imagery. Geographic analysis of selected terrestrial, oceanographic, and atmospheric processes and resources. (Formerly numbered Geography 488.)

### **GEOG 588. Intermediate Remote Sensing of Environment (4)**

Three lectures and three hours of laboratory.

Prerequisites: Geography 385 and 587.

Multispectral remote sensor systems and interpretation of imagery from nonphotographic systems. Computer-assisted image processing. Geographic analysis of selected terrestrial, oceanographic, and atmospheric processes.

### **GEOG 589. GIS-Based Decision Support Methods (3)**

Prerequisite: Geography 484.

Integration of Geographic Information Systems (GIS) with decision support techniques for problem-solving and decision-making. Public participation and collaborative use of GIS for location-based planning and resource management.

### **GEOG 595. Geographic Internship (3)**

Prerequisites: Six upper division units in geography and consent of instructor.

Students will be assigned to various government agencies and industry and will work under the joint supervision of agency heads and the course instructor. Maximum credit three units.

### **GEOG 596. Advanced Topics in Geography (1-3)**

Prerequisite: Six upper division units in geography.

Advanced special topics in geography. May be repeated with new content. See *Class Schedule* for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Credit for 596 and 696 applicable to a master's degree with approval of the graduate adviser.

## **GRADUATE COURSES**

### **GEOG 670. Environmental and Resource Conservation Theory (3)**

Prerequisite: Graduate standing.

Theories and principles involved in natural and environmental resources management.

### **GEOG 683. Advanced Geographic Information Systems (3)**

Prerequisites: Geography 484 and Computer Science 108.

Modeling of spatial phenomena in geographic information systems with geoprocessing techniques.

### **GEOG 683L. Geographic Information Systems Laboratory (1-2)**

Three to six hours of laboratory.

Prerequisite: Concurrent registration in Geography 683.

Data processing and analysis in geographic information systems. Applications of overlay functions in spatial analysis.

### **GEOG 685. Advanced Quantitative Methods in Geography (3)**

Prerequisite: Geography 585.

Statistical techniques and quantitative models applied to spatial problems. Multiple regression, discriminant analysis, factor analysis and spatial modeling.

### **GEOG 688. Advanced Remote Sensing (3)**

Prerequisite: Geography 588.

Sensor systems, image interpretation and geographic applications in thermal infrared and microwave remote sensing. Principles of digital image processing.

### **GEOG 688L. Advanced Remote Sensing Laboratory (1-2)**

Two or four hours of laboratory.

Prerequisite: Concurrent registration in Geography 688.

Processing and analysis of remotely sensed data. Laboratory training in sensor systems and digital image-processing methods including thermal infrared and microwave data analysis.

### **GEOG 696. Advanced Special Topics in Geography (3)**

Prerequisite: Consent of instructor.

Advanced special topics in geography. May be repeated with new content. See *Class Schedule* for specific content. Credit for 596 and 696 applicable to a master's degree with approval of the graduate adviser.

### **GEOG 700. Seminar in Geographic Research Design (3)**

Prerequisite: Graduate standing.

Definition of spatial problems, hypothesis formulation and testing, selection of appropriate methodology. Development of research proposals, conduct of research, written and oral presentations.

### **GEOG 701. Seminar in Development of Geographic Thought (3)**

Prerequisite: Graduate standing.

Evolution of concepts concerning the nature, scope, theories, and methodologies of geography.

### **GEOG 710. Seminar in Physical Geography (3)**

Prerequisite: Six units of upper division or graduate level courses in physical geography.

Intensive study of an aspect of physical geography. May be repeated with new content. See *Class Schedule* for specific content. Maximum credit six units applicable to a master's degree.

### **GEOG 740. Seminar in Human Geography (3)**

Prerequisite: Six units of upper division or graduate level courses in human geography.

Intensive study of a spatial aspect of human geography. May be repeated with new content. See *Class Schedule* for specific content. Maximum credit six units applicable to a master's degree.

### **GEOG 760. Seminar in Behavioral and Social Geography (3)**

Prerequisite: Six units of upper division or graduate level courses in behavioral or social geography.

Intensive study of a spatial aspect of behavioral or social geography. May be repeated with new content. See *Class Schedule* for specific content. Maximum credit six units applicable to a master's degree.

### **GEOG 770. Seminar in Environmental and Resource Conservation (3)**

Prerequisites: Geography 670 and six units of upper division or graduate level courses in environmental or resource conservation.

Natural and environmental resource conservation. May be repeated with new content. See *Class Schedule* for specific content. Maximum credit six units applicable to a master's degree.

### **GEOG 780. Seminar in Techniques of Spatial Analysis (3)**

Prerequisite: Six units of upper division or graduate level courses in spatial analytic techniques.

Spatial analytic techniques from image processing, remote sensing, geographic information systems, cartography or quantitative methods. May be repeated with new content. See *Class Schedule* for specific content. Maximum credit six units applicable to a master's degree.

### **GEOG 797. Research (1-3) Cr/NC/RP**

Research in one of the fields of geography. Maximum credit six units applicable to a master's degree.

### **GEOG 798. Special Study (1-3) Cr/NC/RP**

Prerequisite: Consent of staff; to be arranged with department chair and instructor.

Individual study. Maximum credit six units applicable to a master's degree.

### **GEOG 799A. Thesis (3) Cr/NC/RP**

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

### **GEOG 799B. Thesis Extension (0) Cr/NC**

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of RP.

Registration required in any semester or term following assignment of RP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

**DOCTORAL COURSES**

**GEOG 890. Independent Study for Doctoral Examination (1-9) Cr/NC**

Prerequisite: Consent of instructor or graduate adviser.  
Tutorial with student's major professor in preparation for qualifying examinations. No unit credit allowed toward advanced degree. Maximum credit nine units.

**GEOG 897. Doctoral Research (1-15) Cr/NC/RP**

Prerequisite: Admission to the doctoral program.  
Independent investigation in the general field of the dissertation. A written proposal must be approved by the joint doctoral advising committee. Maximum credit six units applicable to a doctoral degree.

**GEOG 899. Doctoral Dissertation (1-15) Cr/NC/RP**

Prerequisites: Advancement to candidacy and an officially constituted dissertation committee.  
Preparation of the dissertation for the doctoral degree. Enrollment is required during the term in which the dissertation is approved. No unit credit allowed toward advanced degree.

