Lecture—3 hours; laboratory—3 hours. Prerequisite: the environment is emphasized. GE credit: orchard and plantation forest soils; management of organic and conventional agricultural, vineyard, course 100 or the equivalent. Availability of nutrients in land use. May be repeated one time for credit. Offered in alternate years.—II. (I.) Houlton

92. Soil Science Internship (1-12) Internship—3-36 hours. Prerequisite: lower division standing and consent of instructor. Work experience off and on campus in soil science. Internship supervised by a member of the faculty. (P/NP grading only.)—I, II, III, (I, II, III)

Upper Division


102. Environmental Soil Chemistry (3) Lecture—3 hours. Prerequisite: course 100 or the equivalent; general chemistry. Soil chemistry processes related to the fate and transport of contaminants in soil. Soil minerals, natural organic matter, surface charge, soil solution chemistry, redox reactions in soil, and sorption of inorganic and organic contaminants. GE credit: SciEng | QL, SE, SL.—II. (II.) Parikh

105. Field Studies of Soils in California Ecosystems (5) Prerequisite: courses 100 and 120, or equivalent recommended. Field-based studies of soils in California ecosystems, away from campus, throughout California. Emphasis on description and classification of soils; relationships among soils, vegetation, geology, and climate; physical, chemical, and biological processes in soils on the landscape, and the role of soils in land use. May be repeated one time for credit. GE credit: SciEng | QL, SE, SL, VL, WE.—IV. (IV.) Southard, Dahlen, O'Geen, Amundson


109. Sustainable Nutrient Management (4) Lecture—3 hours; laboratory—3 hours. Prerequisite: course 100 or equivalent. Availability of nutrients in organic and conventional agricultural, vineyard, orchard and plantation forest soils; management of fertilizers, cover crops, compost, sewage sludge and manure, and their contribution and prevention to loss to the environment is emphasized. GE credit: SciEng | QL, SE, SL, VL, WE.—III. (III.) Horwath

111. Soil Microbiology (4) Lecture—3 hours; laboratory—3 hours. Prerequisite: Chemistry 1C and Biological Sciences 1C. Major groups of microorganisms in soil, their interrelationships, and their responses to environmental variables. Role of microorganisms in cycling of nutrients. Plant-microbe relationships. Transformations of organic and inorganic pollutants. GE credit: SciEng | QL, SE, SL, VL.—III. (III.) Scow

118. Soils in Land Use and the Environment (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 100 or consent of instructor. Soils are considered as elements in land use planning and environmental quality. Topics include: soil survey reports, remote sensing, land capability classification, soil erosion/conservation, waste disposal on soils and soil reclamation. GE credit: SciEng | SE, SL.—III. (III.) O'Geen

120. Soil Genesis, Morphology, and Classification (5) Lecture—4 hours; laboratory—3 hours (includes five one weekend field trips). Prerequisite: course 100; Geology 50 recommended. Recognition and description of soils; chemical, biological and physical processes of soil formation. Factors of soil formation. Introduction to soil classification. Practice using soil taxonomy. Practical experience describing soil properties in the field. GE credit: SciEng | QL, SE, SL, VL.—III. (III.) Southard

192. Soil Science Internship (1-12) Internship—3-36 hours. Prerequisite: completion of 84 units and consent of instructor. Work experience off and on campus in soil science. Internship supervised by a member of the faculty. (P/NP grading only.)—I, II, III, (I, II, III)

198. Directed Group Study (1-5) (P/NP grading only.)—I, II, III, (I, II, III)

199. Special Study for Advanced Undergraduates (1-5) (P/NP grading only.)—I, II, III, (I, II, III)

Graduate

202. Topics in Advanced Soil Chemistry (3) Lecture/discussion—3 hours. Prerequisite: undergraduate course in chemistry, water chemistry, or consent of instructor. Reviews of current research in soil chemistry. Topics include double layer theory; clay mineral and oxide surface chemistry; adsorption on soil surfaces and modeling of solution ions; solubility and mineral stability diagrams. Discussion of current journal articles. May be repeated one time for credit when topic differs.—II. (II.) Parikh

205. Field Studies of Soils in California Ecosystems (5) Fieldwork—50 hours; discussion—15 hours; lecture—5 hours. Prerequisite: courses 100 and 120 or equivalent recommended. Limited enrollment. Field-based soil studies in California ecosystems. Description and classification of soils; relationships among soils, vegetation, geology, and climate; physical, chemical, and biological processes; their role in land use. Similar to SSC 105; requires additional coursework. Global carbon cycle from Phanerozoic epoch to modern times. Examination of long and short-term carbon cycles. Transfer of carbon among ocean, land and life with emphasis on humic substance formation, methods of characterization, reactions with organic and soil carbon stabilization. Offered in alternate years.—II. (II.) Horwath

290. Special Topics in Soil Science (1-4) Seminar—1-4 hours. Prerequisite: graduate standing. Seminars and critical review of problems, issues, and research in soil science. May be repeated for credit. (S/U grading only.)—I, II, III, (I, II, III)

298. Group Study (1-5) Prerequisite: consent of instructor. May be repeated for credit when topic differs. (S/U grading only.)—I, II, III, (I, II, III)

299. Research (1-12) (S/U grading only.)—I, II, III, (I, II, III)

Professional

396. Teaching Assistant Training Practicum (1-4) Prerequisite: graduate standing. May be repeated for credit. (S/U grading only.)—I, II, III, (I, II, III)

Soils and Biogeochemistry (A Graduate Group)

A. Toby O'Geen, Ph.D., Chairperson of the Group


Pre-Fall 2011 General Education (GE): ArHum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences; DivII=Diverse Domesticity; Wrt=Writing Experience

Fall 2011 and on Revised General Education (GE): AH=Arts and Humanities; SE=Science and Engineering. SS=Social Sciences; ACH=American Cultures; DD=Diverse Domesticity; OLL=Oral Skills; QL=Quantitative; SL=Science; VL=Visual; WC=World Cultures; WE=Writing Experience
Spanish and Portuguese

(College of Letters and Science)

Cecilia Colombi, Ph.D., Chairperson of the Department

Department Office. 215 Sprout Hall; 530-752-0835; http://spanish.ucdavis.edu

Faculty

María E. Alisent, Ph.D., Professor
Emilio Bejín, Ph.D., Professor
Leopoldo Bernucci, Ph.D., Professor
Robert Blake, Ph.D., Professor
Travis Bradley, Ph.D., Associate Professor
Cecilia Colombi, Ph.D., Associate Professor
Linda Egan, Ph.D., Professor
Cristina González, Ph.D., Professor
Robert Irwin, Ph.D., Professor
Michael Lazzara, Ph.D., Associate Professor
Adrienne Martin, Ph.D., Professor
Cristina Martínez-Carazo, Associate Professor
Robert Newcomb, Ph.D., Associate Professor
Ana Peluffo, Ph.D., Associate Professor
John Slater, Ph.D., Associate Professor

Emeriti Faculty

Zunilda Gertel, Ph.D., Professor Emeritus
Fabián A. Samaniego, M.A., Senior Lecturer
Ermu A. Verani, Ph.D., Professor Emeritus

Affiliated Faculty

Francisco Alarcón, M.A., Lecturer
Norma López-Burton, M.A., Lecturer
Charles Oriel, Ph.D., Lecturer

The Major Program

The Spanish major program assures proficiency in all four language skills—speaking, listening, reading, and writing—and acquaints students with the intellectual and cultural contributions of the Spanish-speaking world through a study of its language, literature, and cultural productions.

The Program. The department’s lower division program gives students a solid foundation in the Spanish language, either through the traditional elementary and intermediate language series or through an accelerated three-course sequence of Spanish for native speakers. Linguistics 1 introduces students to a systematic study of language in general and serves as an introduction to upper division courses in Spanish linguistics. At the upper division level, students receive a broad introduction to basic concepts and the practice of literary and cultural criticism and to the four areas of study represented in the department’s curriculum: Spanish linguistics, Spanish literature and culture, Latin-American literature and culture, and Latino literatures and cultures in the United States. Students are encouraged to work closely with the department’s academic advisers in designing a program of studies tailored to their individual needs and interests. Many students combine the Spanish major with another major in the humanities or social sciences.

Student Learning Outcomes. Educational Objectives:

- Linguistics. Demonstrate knowledge of the Spanish speaking world’s linguistic diversity through the comprehension of Spanish in a variety of situations, discursive modes and historical, regional or social variations. Demonstrates analytical, interpretative, and critical thinking skills; Spanish 111N, 113, 115/S, 116, 117, 118, 180.
- Literature. Demonstrate analytic, interpretative and critical thinking skills with respect to literary texts from Latin America, Spain, the United States and other countries in which there is a literary production in Spanish; Spanish 100/S, 130, 131N, 134A/B, 142 (Spain); 150N, 151, 157, 159/S (Latin America); 117, 174, 177 (United States).
- Culture. Demonstrate cultural awareness with respect to the diversity of cultural products and manifestations produced in the Spanish speaking world (Latin America, Spain, the United States and other countries in which there is a cultural production in Spanish; Spanish 100/S, 141/S, 170/S, 174).
- Film and Art. Demonstrate analytic interpretative and critical thinking skills with respect to linguistics, literature and cultural studies.

Career Alternatives. This program, alone or in combination with other major programs, may lead to advanced study of the language or literature and culture of Spain and Spanish America, and to careers not only in teaching, but also in other professions such as library science, law, medicine, and in government, social service, business, or international relations.

A.B. Major Requirements:

<table>
<thead>
<tr>
<th>Preparatory Subject Matter</th>
<th>4-37</th>
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</thead>
<tbody>
<tr>
<td>Spanish 1, 2, 3, 21 or 21S, 22 or 22S, 23 for 23S, and 24 or 24S</td>
<td>0-33</td>
</tr>
<tr>
<td>Spanish 31, 32, 33</td>
<td>0-15</td>
</tr>
<tr>
<td>Linguistics</td>
<td>4</td>
</tr>
</tbody>
</table>

In consultation with a departmental adviser and with the consent of the department chairperson, Linguistics 1 may be taken concurrently with upper division courses.

Depth Subject Matter. The program, alone or in combination with other major programs, may lead to advanced study of the language or literature and culture of Spain and Spanish America, and to careers not only in teaching, but also in other professions such as library science, law, medicine, and in government, social service, business, or international relations.

A.B. Major Requirements:

<table>
<thead>
<tr>
<th>Total Units for the Major</th>
<th>49-85</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Advisers</td>
<td>26-28</td>
</tr>
</tbody>
</table>

Students may, with the approval of their adviser, take up to two elective courses outside the Spanish department in such programs as: African American and African Studies: African American and African Studies 107A, 180

Anthropology: Anthropology 144

Art History: Art History 151

Comparative Literature: Comparative Literature 151S

Education: Education 151, 152


Linguistics: Linguistics 166

Native American Studies: Native American Studies 120, 133A/B, 184

A maximum of six units of course 199 may be counted concurrently with regular departmental courses.

Total Units for the Major. 49-85

Major Advisers. Student Affairs Officer/Undergraduate Academic Coordinator, Laura Barrera, ljbarrera@ucdavis.edu

Advising. Given the great flexibility in the Spanish major, it is important that students design their programs in close consultation with their major adviser. This is especially important for students who intend...