#### 865. Environmental Sociology

Fall of odd years. 3(3-0) R: Open only to graduate students in Sociology.

Effects of attitudes, social structure, and policy on the causes and consequences of natural resource depletion, pollution, energy use, growth, and technological risks. Response of movements and policies to environmental problems.

### 866. Rural Households, Family, and Community

Spring of even years. 3(3-0) P: SOC 860 or concurrently.

Household strategies for achieving economic, social, and family goals. Everyday life of rural residents.

#### 867. Social Impact Analysis

Spring of odd years. 3(3-0) Interdepartmental with Anthropology. Administered by Anthropology.

Sociocultural consequences of development programs on populations, communities, and regions in developing and industrial societies. Theory, purposes, methods, outcomes, and uses of social impact analysis.

#### 868. Science and Technology

Spring of odd years. 3(3-0) R: Open only to graduate students in the Department of Sociology. Social aspects of science and technology. History of science studies. Contemporary perspectives, controversies, and cases. Role of science and technology in development.

#### 870. Theories of Social Psychology

Spring. 3(3-0) R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Theoretical perspectives in social psychology. Cognitive processes, group processes, and the self.

### 871. Organizations and Occupations

Fall. 3(3-0) R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Major theorists and landmark empirical studies of organizations and occupations. Methodological approaches and theoretical applications.

### 872. Social Psychology of Health Care

Fall. 3(3-0) R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Social psychological aspects of help-seeking behavior. Provider, patient, and family interactions and role relationships. Medical deviance. Compliance, mental health, and stress. Health beliefs and behavior.

# 873. Social Organization of Health and Medicine

Spring. 3(3-0) R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Organization, delivery, and financing of health care. Public health systems, professional training and associations, and technology. International comparisons.

#### 881. Analysis of Social Data I

Fall. 4(4-0) P: One course in statistics. R: Open only to graduate students in Sociology, Sociology-Urban Studies, Social Science, and Education with a Sociology cognate.

Applications of statistical techniques to social science data. Use of multiple regression and SPSS. Interpretation, strengths, and weaknesses of various statistical practices.

#### 882. Analysis of Social Data II

Spring. 4(4-0) P: SOC 881. R: Open only to graduate students in Sociology, Sociology-Urban Studies, Social Science, and Education with a Sociology cognate.

Applications of multiple regression, path analysis, and factor analysis to social science data. Interpretation, strengths, and weaknesses of commonly used statistical practices.

#### 890. Individual Readings

Fall, Spring, Summer. 1 to 9 credits. A student may earn a maximum of 16 credits in all enrollments for this course. R: Approval of department.

#### 899. Master's Thesis Research

Fall, Spring, Summer. 1 to 9 credits. A student may earn a maximum of 16 credits in all enrollments for this course.

#### 931. Topics in Structural Inequality

Fall of even years. 3(3-0) R: Open only to graduate students in Sociology or Sociology-Urban Studies. Current research on socioeconomic class, gender inequality, racial and ethnic inequality, power structures, social conflict, urban dynamics, or social change.

# 932. State, Poverty, and Empowerment Spring of odd years. 3(3-0) R: Open only to graduate students in Sociology or Sociology-

*Urban Studies*. Poverty, inequality, domination, resistance, and democratic practice in policy planning. Global resource distribution and future policy priorities.

### 954. Techniques of Population Analysis

Spring of odd years. 3(3-0) R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Global sources of demographic data. Characteristics of populations. Life table modeling, fertility, mortality, and migration. Reliability of data and validity of models.

### 970. Topics in Wellbeing and Health

Spring of even years. 3(3-0) R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Topics such as family work and stress, risk and uncertainty, social epidemiology, and life course.

### 973. Social Analysis of Work

Fall of even years. 3(3-0) P: SOC 871. R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Occupational structures, work settings, functions and meanings of work. Mobility and career patterns. Applications to health and medicine.

#### 974. Social Attitudes

Fall of odd years. 3(3-0) P: SOC 870 or SOC 872. R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Attitude and behavior measurement. Structure and function of social attitudes. Persuasion and attitude change.

# 976. Social Structure and the Individual

Spring of odd years. 3(3-0) P: SOC 870 or SOC 872. R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Contemporary theory and research on social structure and the individual, the self, and identity

#### 977. Social Epidemiology

Spring of odd years. 3(3-0) P: SOC 851 or SOC 872 or SOC 873. R: Open only to graduate students in Sociology or Sociology-Urban Studies. Social, economic, and ecological factors in health problems within a community or society. Application of social models and methods to epidemiology. Social policies of health promotion and disease prevention.

#### 985. Qualitative Field Research

Fall. 3(3-0) R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Qualitative research methods. Participant observation, interview, and field documents. Design, data gathering, and analysis.

#### 986. Survey Research Principles

Spring. 3(3-0) P: SOC 881. R: Open only to graduate students in Sociology or Sociology-Urban Studies.

Design, analysis, sampling, questionnaire construction, interviewing, and data processing.

# 989. Topics in Sociological Methodology

Fall of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. R: Open only to graduate students in Sociology or Sociology-Urban Studies. Approval of department.

Evaluation research, experimental or comparative research methods.

#### 999. Doctoral Dissertation Research

Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 99 credits in all enrollments for this course.

### SPANISH SPN

### Department of Romance and Classical Languages College of Arts and Letters

#### 101. Elementary Spanish I

Fall, Spring. 4(4-1) R: No previous experience in Spanish or designated score on Spanish placement test. Not open to students with credit in SPN 150.

Practice in using and understanding Spanish to develop listening, speaking, reading, and writing skills. Pronunciation, grammar, vocabulary, and cultural topics.

### 102. Elementary Spanish II

Fall, Spring. 4(4-1) P: SPN 101 or designated score on Spanish placement test. Not open to students with credit in SPN 150.

Further practice in using and understanding Spanish to develop listening, speaking, reading, and writing skills. Pronunciation, grammar, vocabulary, and cultural topics.

#### 150. Review of Elementary Spanish

Fall, Spring. 3(3-1) R: Open to students with high school credit in Spanish and designated score on Spanish placement test. Not open to students with credit in SPN 101 or SPN 102.

Review of college first-year Spanish for students who had the language in high school and who need to strengthen communication skills, vocabulary, grammar, and pronunciation before study at the 200 level.

### Descriptions—Spanish of

### Courses

#### 201. Second Year Spanish I

Fall, Spring. 4(4-0) P: SPN 102 or SPN 150 or designated score on Spanish placement test.

Intermediate-level review and development of aural comprehension, speaking, reading, and writing skills. Topics in the cultures of the Spanish-speaking world.

#### 202. Second-Year Spanish II

Fall, Spring. 4(4-0) P: SPN 201.

Further review and development of aural comprehension, speaking, reading, and writing skills. Topics in the cultures of the Spanish-speaking world.

#### 290. Independent Study

Fall, Spring. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Approval of department.

Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

#### 320. Grammar and Composition (W)

Fall, Spring. 3(3-0) P: SPN 202. R: Completion of Tier I writing requirement.

Systematic study of Spanish grammar and composition. Extensive writing in Spanish.

#### 330. Phonetics and Oral Spanish

Fall, Spring. 3(3-0) P: SPN 320.

Phonetic description of the sound system of Spanish, developed linguistically and applied to the improvement of pronunciation and spoken Spanish.

### 340. Spanish Culture

Fall. 3(3-0) P: SPN 320.

Aspects of political, social, economic, intellectual, artistic, and literary life of Spain from its origins to the present. Readings, film, and musical selections used as sources for discussion in Spanish.

### 345. Spanish American Culture

Spring. 3(3-0) P: SPN 320.

Aspects of political, social, economic, intellectual, artistic, and literary life of Spanish America. Readings, films, and musical selections used as sources for class discussion in Spanish.

# 346. Hispanic Cultures in the United States

Spring of even years. 3(3-0) R: Not open to freshmen.

History and culture of the varied Hispanic groups in the United States. Migrant and bilingual education. Border and Caribbean cultures. Literary and artistic expression.

### 350. Introduction to Reading Hispanic Literature (W)

Fall, Spring. 3(3-0) P: SPN 320. R: Completion of Tier I writing requirement.

Close reading of poetry, drama, and prose.

# 355. Hispanic Literatures in English Translation

Spring. 3(3-0) R: Not open to freshmen. Selected representative works or themes of the literatures of Spain or Spanish America.

### 410. Survey of Spanish Literature I

Fall of even years. 3(3-0) P: SPN 350; SPN 340 or SPN 345.

Major periods, trends, and authors from the origins through the literature of the Golden Age.

### 411. Survey of Spanish Literature II Spring of odd years. 3(3-0) P: SPN 350; SPN 340

or SPN 345.

Major periods, trends, and authors from the Spanish Enlightenment to the post-Franco era.

#### 415. Survey of Spanish American Literature I

Fall of odd years. 3(3-0) P: SPN 350; SPN 340 or SPN 345.

Survey of literature from the conquest through the nineteenth century.

#### 416. Survey of Spanish American Literature II

Spring of even years. 3(3-0) P: SPN 350; SPN 340 or SPN 345.

Survey of literature of the twentieth century.

#### 425. Linguistic Grammar

Fall. 3(3-0) P: SPN 320; LIN 401 or ROM 401. Linguistic justification and investigation of major grammar rules of Spanish. Extraction of generalizations from contextualized spoken and written Spanish.

#### 430. Topics in Hispanic Linguistics

Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P: SPN 320; LIN 401 or ROM 401. R: Approval of department.

Topics include phonology, contrastive structures, and syntax.

# 450. Spanish Literature of the Middle Ages

Fall of even years. 3(3-0) P: SPN 410, SPN 411; or SPN 415, SPN 416.

Major currents of the Middle Ages as reflected in the writings of representative authors of the period.

#### 455. Cervantes

Spring of odd years. 3(3-0) P: SPN 410, SPN 411; or SPN 415, SPN 416.

Don Quijote, representative novel as ejemplares, drama and poetry.  $\parbox{\footnote{A}}$ 

# **460.** Spanish Golden Age Literature Fall of odd years. 3(3-0) P: SPN 410, SPN 411; or SPN 415, SPN 416.

Theatre, prose, and poetry of the Golden Age, excluding Don Quijote. Renaissance and Baroque ideologies and their genres.

#### 465. 19th Century Spanish Literature

Spring of even years. 3(3-0) P: SPN 410, SPN 411; or SPN 415, SPN 416.

Principal literary movements of nineteenth-century Spain through representative major works in all genres, and pertinent secondary sources.

# **470. 20th Century Spanish Literature** Fall of even years. 3(3-0) P: SPN 410, SPN 411; or SPN 415, SPN 416.

Principal literary movements of Spain through major works, generations, and authors.

# 475. Spanish American Literature through the 19th Century

Spring of odd years. 3(3-0) P: SPN 410, SPN 411; or SPN 415, SPN 416.

Development of Spanish American literature from its origins through the nineteenth Century.

# 480. Spanish American Literature of the 20th Century

Fall of odd years. 3(3-0) P: SPN 410, SPN 411; or SPN 415. SPN 416.

Major works of poetry, theatre, prose fiction, and essay.

### 485. Topics in Hispanic Literatures of the Americas

Spring of even years. 3(3-0) P: SPN 410, SPN 411; or SPN 415, SPN 416.

A national literature or regional literature: Hispanic Caribbean, Mexico and Central America, Andean Countries, River Plate area, or Latino literature in the United States.

#### 490. Independent Study

Fall, Spring. 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course. R: Approval of department.

Special project arranged by an individual student and faculty member in an area supplementing regular course offerings.

### 491. Special Topics in Spanish

Fall, Spring. 3(3-0) R: Approval of department. Special topics supplementing regular course offerings, proposed by faculty on a group study basis.

### 492. Senior Writing Project

Fall, Spring, Summer. 1(1-0) R: Open only to seniors in Spanish.

Research and preparation of a paper on an interdisciplinary subject that synthesizes at least three areas of a major's undergraduate education. Students work under the supervision of a faculty member.

# 800. Current Approaches to Spanish Instruction

Fall. 3(3-0)

Theoretical and applied study of methodologies of teaching Spanish.

### 805. Evolution of the Spanish Language

Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.

Phonology, morphology and syntax of Spanish from its origins to the present.

### 806. Topics in Hispanic Linguistics

Spring of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.

Issues in Spanish language treated in light of current linguistic inquiry. Topics vary.

### 807. Topics in Hispanic Culture

Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.

Topics such as the Enlightenment, Post-Francoist film, and pre-Columbian cultures.

#### 810. Studies in Medieval Spanish Literature

Spring of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this

Works, genres, and writers of the Spanish Middle Ages. Topics vary.

#### 815. Studies in Golden Age Literature

Fall of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.

Poetry, drama, and prose of 16th and 17th century Spain. Topics vary.

#### 820. Cervantes

Fall of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course

Critical study of "Don Quijote," "Novelas Ejemplares," or other works.

#### 825. Studies in 18th and 19th Century Spanish Literature

Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course

Literature from post-Baroque Spain to the Generation of 1898. Topics vary.

#### 830. Studies in 20th-Century Spanish Literature

Fall of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.

Authors, generations, and tendencies that shape the directions of Spanish literature in the 20th Century. Topics vary.

### 835. Spanish-American Literature before Modernismo

Spring of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.

Major authors and movements from the colonial period to Modernismo. Topics vary.

#### 840. Contemporary Spanish-American Literature

Fall of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.

Poetry, drama, prose, fiction, and essay from Modernismo to the present. Topics vary.

### 890. Independent Study

Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Approval of department. Special projects, directed reading, and research arranged by an individual graduate student and a faculty member in areas supplementing regular course offerings.

#### 891. Special Topics in Spanish

Fall, Spring, Summer. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department.

Special topics supplementing regular course offerings proposed by faculty on a group study basis for graduate students.

#### 999. Doctoral Dissertation Research

Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 24 credits in all enrollments for this course. R: Approval of department.

# STATISTICS AND PROBABILITY

STT

### Department of Statistics and Probability College of Natural Science

#### 200. Statistical Methods

Fall, Spring, Summer. 3(4-0) P: MTH 103 or designated score on mathematics placement test. Not open to students with credit in STT 201 or STT 315 or STT 421.

Data analysis, probability models, random variables, estimation, tests of hypotheses, confidence intervals, and simple linear regression.

#### 201. Statistical Methods

Fall, Spring, Summer. 4(3-2) P: MTH 103 or designated score on mathematics placement test. Not open to students with credit in STT 200 or STT 315 or STT 421.

Probability and statistics with computer applications. Data analysis, probability models, random variables, tests of hypotheses, confidence intervals, simple linear regression. Weekly lab using statistical software.

### 231. Statistics for Scientists

Fall, Spring. 3(3-0) P: MTH 120 or MTH 124 or MTH 132 or MTH 152H or LBS 118. R: Open only to students in College of Natural Science.

Calculus based course in probability and statistics. Probability models, random variables. Estimation, confidence intervals, tests of hypotheses, simple linear regression with applications in sciences.

SA: STT 331

# 290. Topics in Statistics and Probability

Fall, Spring, Summer. 1 to 3 credits. P: MTH 103. R: Approval of Department Individualized study of selected topics.

## 315. Introduction to Probability and Statistics for Business

Fall, Spring, Summer. 3(4-0) P: MTH 120 or MTH 124 or MTH 132. Not open to students with credit in STT 200 or STT 201 or STT 421.

A first course in probability and statistics primarily for business majors. Data analysis, probability models, random variables, confidence intervals, and tests of hypotheses with business applications.

### 317. Quantitative Business Research Methods

Fall, Spring, Summer. 3(3-1) Interdepartmental with Marketing and Supply Chain Management. Administered by Marketing and Supply Chain Management. P: (STT 315) R: Open only to juniors or seniors.

Application of statistical techniques, including forecasting, to business decision making. Includes applications of linear regression and correlation, analysis of variance, selected non-parametric tests, time series, and index numbers.

SA: ML 317, MTA 317

### 351. Probability and Statistics for Engineers

Fall, Spring, Summer. 3(3-0) P: MTH 234. R: Open only to juniors and seniors. Not open to students with credit in STT 430.

Calculus based course in probability and statistics for engineers. Probability models and random variables. Estimation, confidence intervals, tests of hypotheses, simple linear regression. Other topics with applications to engineering.

#### 421. Statistics I

Fall, Spring, Summer. 3(3-0) P: MTH 103 or MTH 110 or MTH 116. Not open to students with credit in STT 200 or STT 201 or STT 315.

Basic probability, random variables, and common distributions. Estimation and tests for one-, two-, and paired sample problems. Introduction to simple linear regression and correlation, 1-way ANOVA.

#### 422. Statistics II

Fall, Spring, Summer. 3(3-0) P: STT 421. Not open to students with credit in STT 464.

Goodness of fit and other non-parametric methods. Linear models including multiple regression and ANOVA for simple experimental designs.

# 430. Introduction to Probability and Statistics

Fall. 3(3-0) P: MTH 126 or MTH 133. R: Open only to Economics and Agricultural Economics majors. Not open to students with credit in STT 351

Calculus based probability and statistics with applications. Discrete and continuous random variables and their expectations. Point and interval estimation, tests of hypotheses, simple linear regression.

# 441. Probability and Statistics I: Probability

Fall, Spring, Summer. 3(3-0) P: MTH 234
Probability models and basic statistics at an intermediate mathematical level. Discrete, continuous, univariate, and multivariate distributions. Random variables. Normal approximation. Sampling distributions, parameter estimation, and elementary tests of hypotheses.

#### 442. Probability and Statistics II: Statistics

Spring. 3(3-0) P: STT 441, MTH 314. Estimation, tests of hypotheses, confidence intervals. Goodness of fit, non-parametric methods. Linear models, multiple regression, ANOVA.

### 461. Computations in Probability and

Spring. 3(3-0) P: CSE 131 or CSE 230; MTH 314, STT 441.

Computer algorithms for evaluation, simulation and visualization. Sampling and prescribed distributions. Robustness and error analysis of procedures used by statistical packages. Graphics for data display, computation of probabilities and percentiles.

# 464. Statistical Methods for Biologists I Fall. 3(3-0) Interdepartmental with Animal Sci-

ence; and Crop and Soil Sciences. P: STT 421.
Biological random variables. Estimation of population parameters. Testing hypotheses. Linear correlation and regression (prediction). Analyses of counted and measured data to compare several biological groups (contingency tables and analysis

of variance).