

SOCIOLOGY

891*. **Topics in Analysis of Social Data**
 Fall of even-numbered years. 3(3-0)
 P: SOC 882. R: Open only to graduate students in Sociology, Multidisciplinary Social Science, and Education with Sociology minors. Selected issues and techniques and their strengths and weaknesses.
 QP: SOC 882 QA: SOC 883

899*. **Master's Thesis Research**
 Fall, Spring, Summer. 1 to 9 credits. May reenroll for a maximum of 16 credits.

QA: SOC 899

919*. **Topics in Sociological Theory**
 Fall of odd-numbered years. 3(3-0)
 May reenroll for a maximum of 9 credits.
 P: SOC 815. R: Open only to graduate students in Sociology. Topics in theory construction and in the sociology of knowledge. Critical appraisal of the work of major sociological theorists.
 QP: SOC 815 QA: SOC 916

931*. **Selected Topics in Structural Inequality**
 Fall of even-numbered years. 3(3-0)
 Current research in structural inequality. 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-numbered years. 3(3-0)
 Poverty, inequality, domination, resistance, and democratic practice in policy planning. Global resource distribution and future policy priorities.

950*. **Selected Topics in Rural and Environmental Studies**
 Spring of even-numbered years. 3(3-0)
 May reenroll for a maximum of 12 credits.
 Special topics in rural and environmental studies. Adoption of innovations, consolidation of food production enterprises, or community response to farm crises.
 QA: SOC 961

954*. **Techniques of Population Analysis**
 Spring of odd-numbered years. 3(3-0)
 Global sources of demographic data. The characteristics of populations. Life table modeling, fertility, mortality, and migration. Reliability of data and validity of models.
 QA: SOC 984

970*. **Selected Topics in Wellbeing and Health**
 Spring of even-numbered years. 3(3-0)
 Current topics in the study of wellbeing and health. Family work and stress, risk and uncertainty, social epidemiology, and life course.
 QA: SOC 948

973*. **Social Analysis of Work**
 Fall of even-numbered years. 3(3-0)
 P: SOC 871.
 Occupational structures, work settings, functions and meanings of work. Mobility and career patterns. Applications to health and medicine.
 QP: SOC 820N QA: SOC 920

974*. **Social Attitudes**
 Fall of odd-numbered years. 3(3-0)
 P: SOC 870 or SOC 872.
 Attitude and behavior measurement. Structure and function of social attitudes. Persuasion and attitude change.
 QP: SOC 840 ORSOC 871 QA: SOC 943

975*. **Complex Organizations**
 Spring of even-numbered years. 3(3-0)
 P: SOC 871 or SOC 873.
 Theories of social processes within and among complex organizations. The social structure of organizations. Organizations and their environment. Applications to health care systems.
 QP: SOC 820N ORSOC 873 QA: SOC 821

976*. **Social Structure and the Individual**
 Spring of odd-numbered years. 3(3-0)
 P: SOC 870 or SOC 872.
 Contemporary theory and research on social structure and the individual, the self, and identity.
 QP: SOC 840 ORSOC 871 QA: SOC 945

977*. **Social Epidemiology**
 Spring of odd-numbered years. 3(3-0)
 The social, economic and ecological factors which characterize the health problems within a community or society. Application of social models and methods to epidemiology. Social policies of health promotion and disease prevention.

980*. **Documentary and Bibliographic Methods**
 Spring. 3(3-0)
 Strategy and techniques for using documentary, bibliographic, and historical source materials in social science research.
 QA: SOC 980

985*. **Qualitative Field Research**
 Fall of odd-numbered years. 3(3-0)
 R: Approval of department.
 Qualitative research methods. Participant observation, interview, and field documents. Design, data gathering, and analysis.
 QA: SOC 985

986*. **Survey Research Principles**
 Spring. 3(3-0)
 P: SOC 881
 The design and analysis of survey research. Sampling, questionnaire construction, interviewing, and data processing.
 QP: SOC 881 QA: SOC 986

989*. **Special Topics in Sociological Methodology**
 Fall of odd-numbered years. 3(3-0)
 May reenroll for a maximum of 9 credits.
 Special topics in advanced methodology. Evaluation research, experimental or comparative research methods.
 QA: SOC 988

999*. **Doctoral Dissertation Research**
 Fall, Spring, Summer. 1 to 12 credits.
 QA: SOC 999

SPANISH SPN

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.
 QA: SPN 101 SPN 102

102*. **Elementary Spanish II**
 Fall, Spring. 4(4-1)
 P: SPN 101 or designated score on Spanish placement test. R: 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.
 QP: SPN 102 QA: SPN 103

150*. **Review of Elementary Spanish**
 Fall, Spring. 3(3-1)
 R: Open to students with credit 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.
 QA: SPN 190

201*. **Second Year Spanish I**
 Fall, Spring. 4(4-0)
 P: SPN 102 or SPN 150 or R: 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.
 QP: SPN 103 SPN 190 QA: SPN 201 SPN 202

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.
 QP: SPN 202 QA: SPN 203

290*. **Independent Study**
 Fall, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 4 credits.
 R: Approval of the Department
 Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

320*. **Grammar and Composition**
 Fall, Spring. 3(3-0)
 P: SPN 202.
 Systematic study of Spanish grammar and composition. Extensive writing in Spanish.
 QP: SPN 203 QA: SPN 321 SPN 322

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.
 QP: SPN 203 QA: SPN 300 SPN 311

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.
 QP: SPN 203 SPN 322 QA: SPN 327

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.
 QP: SPN 203 SPN 322 QA: SPN 328
- 346*.** **Hispanic Cultures in the United States**
 Spring of even-numbered years. 3(3-0)
 R: Sophomore and above
 The presence of varied Hispanic groups in the United States; historical, educational and cultural issues of these minority groups and their impact on American society. Not applicable towards the major or minor in Spanish.
 QA: SPN 326
- 350*.** **Introduction to Reading Hispanic Literature**
 Fall, Spring. 3(3-0)
 P: SPN 320.
 Close reading of poetry, drama, and prose.
 QP: SPN 203 QA: SPN 361
- 355*.** **Hispanic Literatures in English Translation**
 Spring of odd-numbered years. 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-numbered 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.
 QP: SPN 361 SPN 322 QA: SPN 362
- 411*.** **Survey of Spanish Literature II**
 Spring of odd-numbered 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.
 QP: SPN 361 SPN 322 QA: SPN 363
- 415*.** **Survey of Spanish American Literature I**
 Fall of odd-numbered years. 3(3-0)
 P: SPN 350; SPN 340 or SPN 345.
 Survey of literature from the conquest through the nineteenth century.
 QP: SPN 361 SPN 322 QA: SPN 364
- 416*.** **Survey of Spanish American Literature II**
 Spring of even-numbered years. 3(3-0)
 P: SPN 350; SPN 340 or SPN 345
 Survey of literature of the twentieth century.
 QP: SPN 361 SPN 322 QA: SPN 365
- 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.
 QP: SPN 322 LIN 401 QA: SPN 422 SPN 423
- 430*.** **Topics in Hispanic Linguistics**
 Spring. 3(3-0)
 P: SPN 320; LIN 401 or ROM 401.
 Topics include phonology, contrastive structures, and syntax.
 QP: SPN 322 LIN 401 QA: SPN 420 SPN 421
- 450*.** **Spanish Literature of the Middle Ages**
 Fall of even-numbered 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.
 QP: SPN 361 ORSPN 363ORSPN 365 QA: SPN 450
- 455*.** **Cervantes**
 Spring of odd-numbered years. 3(3-0)
 P: SPN 410, SPN 411; or SPN 415, SPN 416.
 Don Quijote, representative novelas ejemplares, drama and poetry.
 QP: SPN 361 ORSPN 363ORSPN 365 QA: SPN 455
- 460*.** **Spanish Golden Age Literature**
 Fall of odd-numbered 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.
 QP: SPN 361 ORSPN 363ORSPN 365 QA: SPN 460
- 465*.** **Nineteenth Century Spanish Literature**
 Spring of even-numbered 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.
 QP: SPN 361 ORSPN 363ORSPN 365 QA: SPN 465
- 470*.** **Twentieth Century Spanish Literature**
 Fall of even-numbered 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.
 QP: SPN 361 ORSPN 363ORSPN 365 QA: SPN 470
- 475*.** **Spanish American Literature through the Nineteenth Century**
 Spring of odd-numbered 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.
 QP: SPN 361 ORSPN 363ORSPN 365 QA: SPN 475
- 480*.** **Spanish American Literature of the Twentieth Century**
 Fall of odd-numbered years. 3(3-0)
 P: SPN 410, SPN 411; or SPN 415, SPN 416.
 Major works of poetry, theatre, prose fiction, and essay.
 QP: SPN 361 ORSPN 363ORSPN 365 QA: SPN 480
- 485*.** **Topics in Hispanic Literatures of the Americas**
 Spring of even-numbered years. 3(3-0)
 P: SPN 410, SPN 411; or SPN 415, SPN 416.
 A national literature or regional literature: region, Hispanic Caribbean, Mexico and Central America, Andean Countries, River Plate area, or Latino literature in the United States.
 QP: SPN 363 ORSPN 365 QA: SPN 485
- 490*.** **Independent Study**
 Fall, Spring, Summer. 1 to 4 credits.
 May reenroll for a maximum of 4 credits.
 R: Approval of the Department
 Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.
 QA: SPN 499
- 491*.** **Special Topics in Spanish**
 Fall, Spring, Summer. 3(03-00)
 R: Approval of the Department
 Special topics supplementing regular course offerings proposed by faculty on a group study basis.
- 800*.** **Current Approaches to Spanish Instruction**
 Fall. 3(3-0)
 A theoretical and applied study of methodologies of teaching Spanish.
 QA: SPN 800
- 805*.** **Evolution of the Spanish Language**
 Spring of odd-numbered years. 3(3-0)
 A diachronic examination of the phonology, morphology and syntax of Spanish from its origins to the present.
 QA: SPN 805
- 806*.** **Topics in Hispanic Linguistics**
 Spring of even-numbered years. 3(3-0)
 Issues in Spanish language treated in light of current linguistic inquiry. Topic varies.
 QA: SPN 806
- 807*.** **Topics in Hispanic Culture**
 Spring of odd-numbered years. 3(3-0)
 Specific aspects of Hispanic culture. Topic varies.
 QA: SPN 809
- 810*.** **Studies in Medieval Spanish Literature**
 Spring of even-numbered years. 3(3-0)
 Major works, genres and writers of the Spanish Middle Ages. Topic varies.
 QA: SPN 802
- 815*.** **Studies in Golden Age Literature**
 Fall of even-numbered years. 3(3-0)
 Poetry, drama, prose of 16th and 17th century Spain. Topic varies.
 QA: SPN 811
- 820*.** **Cervantes**
 Fall of odd-numbered years. 3(3-0)
 Critical study of "Don Quijote," "Novelas Ejemplares" and/or other works of Cervantes.
 QA: SPN 812
- 825*.** **Studies in Eighteenth and Nineteenth Century Spanish Literature**
 Spring of odd-numbered years. 3(3-0)
 Literature from Post-Baroque Spain to the Generation of 1898. Topic varies.
 QA: SPN 831
- 830*.** **Studies in 20th-Century Spanish Literature**
 Fall of odd-numbered years. 3(3-0)
 The authors, generations and tendencies that shape the directions charted by Spanish literature in the 20th Century. Topic varies.
 QA: SPN 842

SPANISH

835*. **Spanish American Literature before Modernismo**
Spring of even-numbered years. 3(3-0)

Major authors and movements from the colonial period and nineteenth century to modernismo. Topic varies.
QA: SPN 850

840*. **Contemporary Spanish American Literature**
Fall of odd-numbered years. 3(3-0)

Poetry, drama, prose, fiction and essay from modernismo to the present. Topic varies.
QA: SPN 852

890*. **Independent Study**
Fall, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 3 credits.
R: Approval of the Department

Special projects, directed reading, and research arranged by an individual graduate student and a faculty member in areas supplementing regular course offerings.
QA: SPN 860

891*. **Special Topics in Spanish**
Fall, Spring, Summer. 3(03-00) May reenroll for a maximum of 6 credits.
R: Approval of the 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. May reenroll for a maximum of 24 credits.
R: Approval of the Department

QA: SPN 999

STATISTICS AND PROBABILITY STT

200. **Statistical Methods**
Fall, Spring, Summer. 3(4-0)
P: MTH 110 or MTH 116 or designated score on mathematics placement test. <F9
R: Not open to students with credit in STT 351.
Descriptive statistics, elementary probability and combinatorics. The binomial distribution. Random variables, their expectations and variances. Central Limit Theorem, estimation and inference. Simple tests based on the binomial, normal, t, chi-square an
QP: STT 315 STT 421 QA: STT 201

201. **Statistical Methods**
Fall, Spring, Summer. 4(3-2)
P: MTH 110 or MTH 116 or designated score on mathematics placement test.
R: Not open to students with credit in STT 200 or STT 315 or STT 331 or STT 351 or STT 421.
Probability and statistics with computer applications. Data analysis, probability models, random variables, tests of hypotheses, confidence intervals, simple linear regression.
QP: STT 315 STT 421

315. **Introduction to Probability and Statistics for Business**
Fall, Spring, Summer. 3(4-0)
P: MTH 120 or MTH 124 or MTH 132.
R: Not open to students with credit in STT 200 or STT 201 or STT 331 or STT 351 or STT 421.
Probability and statistics for business majors. Data analysis, probability models, random variables, single population confidence intervals and tests of hypotheses with business applications.
QP: MTH 111

331. **Statistics for Scientists**
Fall, Spring. 3(3-0)
P: MTH 120 or MTH 124 or MTH 132 or LBS 101. R: Open only to students in College of Natural Science. Not open to students with credit in STT 351 or STT 441.
Calculus based course in probability and statistics. Probability models, random variables, tests of hypotheses, confidence intervals with applications in sciences.
QP: LBS 113 ORMTH 113

351. **Probability and Statistics for Engineers**
Fall, Spring, Summer. 3(3-0)
P: MTH 234. R: Not open to students with credit in STT 200.
A calculus based course in probability and statistics for engineering students. Probability models, random variables, tests of hypotheses, and confidence intervals with engineering applications.
QA: STT 351

421*. **Statistics I**
Fall, Spring, Summer. 3(03-00)
P: MTH 110 or MTH 116. R: Not open to students with credit in STT 200 or STT 201 or STT 231 or STT 315 or STT 351.
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.
QP: MTH 108 QA: STT 421 STT 422

422*. **Statistics II**
Fall, Spring, Summer. 3(03-00)
P: STT 421. R: 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.
QP: STT 421 QA: STT 422 STT 423

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 231 or STT 351 or STT 441 or STT 421.
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.
QP: MTH 113 ORMTH 123ORMTH 480

441*. **Probability and Statistics I: Probability**
Fall, Spring, Summer. 3(03-00)
P: MTH 235 or concurrently.
Discrete and continuous distributions: univariate and multivariate. Normal approximation, sampling distributions and parameter estimation. Poisson process and applications.
QP: MTH 215 QA: STT 441 STT 442

442*. **Probability and Statistics II: Statistics**
Fall, Spring. 3(03-00)
P: STT 441, MTH 314 or concurrently.
Estimation, tests of hypotheses, confidence intervals. Goodness of fit, non-parametric methods. Linear models, multiple regression, ANOVA.
QP: STT 441 QA: STT 442 STT 443

461*. **Computations in Probability and Statistics**
Spring. 3(03-00)
P: CPS 131 or CPS 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.
QP: STT 441 MTH 334 QA: STT 461

464*. **Statistical Methods for Biologists**
Fall. 3(03-00) Interdepartmental with the Department(s) of Animal Science, 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)
QP: STT 421 QA: STT 422

465*. **Statistical Methods for Biologists II**
Spring. 3(03-00) Interdepartmental with the Department(s) of Animal Science, Crop and Soil Sciences.
P: STT 464
Concepts of reducing experimental error: covariance; complete and incomplete block designs; latin squares; split plots; repeated-measures designs; regression applications; response surface designs.
QP: STT 422 QA: ANS 871 CSS 920

471*. **Statistics for Quality and Productivity**
Fall. 3(03-00)
P: STT 351 or STT 422 or STT 442.
Scientific context of quality: Box, Deming, Taguchi. Graphical techniques, control charts. Design of experiments: factorials and fractional factorials, confounding and aliasing. Engineering parameter design through experimentation.
QP: STT 351 ORSTT 422ORSTT 442 QA: STT 471

481*. **Issues in Statistical Practice**
Spring. 1(01-00)
R: Open only to seniors in Statistics.
Selected readings and projects illustrating special problems encountered by professional statisticians in their roles as consultants, educators, and analysts.

490*. **Directed Study of Statistical Problems**
Fall, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 9 credits.
R: Open only to juniors and seniors in Mathematics or Statistics.
Individualized study of selected topics.
QA: STT 490

871*. **Theory of Statistics I**
Fall. 3(03-00)
P: STT 881 & MTH 821 (or concurr); MTH 921 (or concurr) or STT 862.
Empirical distributions, quantiles, Glivenko-Cantelli Theorem. Important distributions and families. Convergences, Slutsky Theorem, asymptotics of differentiable functions. Basic concepts of decision theory. Confidence sets. Some basic stat methods.
QP: STT 870 MTH 822 QA: STT 872

872*. **Theory of Statistics II**
Spring. 3(03-00)
P: STT 871; STT 882 (or concurr).
Theory of Neyman Pearson tests and extensions. Convex loss estimation, best unbiased estimates, sufficient statistics, information lower bounds. Extensive application to linear models. Introduction to LAN families and applications to estimation & test
QP: STT 872 QA: STT 873 STT 955

STUDIO ART STA

110*. **Drawing Fundamentals I**
Fall, Spring. 3(0-6)
Introduction to, and application of, the fundamental concepts of drawing. Emphasis on observational, descriptive and analytical analysis. Practice of drawing skills using common drawing media.
QA: STA 141