# SOCIOLOGY

#### SOC

# College of Human Medicine College of Social Science

# 150. The Individual in Modern Society (S)

Fall, Spring. 4(4-0)

Recognition and description of social conditions which lead to individual human development. Exploration of ways in which society facilitates and fails to facilitate individual human development.

# 160. Structural Problems of American Society (S)

Winter, 4(4-0)

Analysis of beliefs and values which underlie the definition of social problems and proposed solutions. Structural basis of problems such as those of workplace, life cycle, energy, and environment.

# 170. International Problems of Change and Development (S)

Fall, Winter, Spring. 4(4-0)

Global issues and problems of social change and development within societies, including population growth, food shortages, energy, conflict, inequality: strategies, impacts, ethics of planned change; perspectives on change; future trends.

### 241. Introduction to Sociology

 $Fall, \ Winter, \ Spring, \ Summer. \ 4(4\text{-}0)$  Sophomores.

Introduction to nature of sociological inquiry and to concepts and principles of sociology. Analysis focuses on institutional features of modern society and of structure and dynamics of social organization.

# 251. Social Psychology

Fall, Winter, Spring, Summer. 5(5-0) SOC 241. Students may not receive credit in both SOC 251 and PSY 335.

Social psychology from a sociological perspective. Relation of individuals to their social environment with special reference to group process and interaction, social structure and personality, mass phenomena, and social attitudes.

# 310. Social Stratification

Fall, Winter. 4(4-0) SOC 241.

Survey of literature on the formation and changes in social class systems in modern and traditional societies. Social mobility in class, status and political orders.

#### 311. Development of Sociological Theory

Winter, Spring. 4(4-0) SOC 310.

Significant theoretical contributions to the development of sociological theory, both European and American.

## 312. Research Methods in Sociology

Fall, Spring. 5(4-2) STT 201 or PSY

215.

Elements of scientific logic; procedures and problem formation; development of concepts, hypotheses, theory; research design; sampling, measurement, data gathering; analysis, interpretation, and reporting research findings.

#### 320. Criminology

Fall, Winter, Spring, Summer. 4(4-0) SOC 241 or C J 110 or approval of department. Interdepartmental with the School of Criminal Justice.

Crime analyzed from sociological perspective: meaning of 'crime', crime statistics, and measurement, theories of crime causation, crime typologies, e.g., professional organized, violent, sex, white-collar crimes, juvenile deliquency.

# 321. Industrial Sociology

Fall. 4(4-0) SOC 241.

Industrialization in Western and non-Western societies; social organization of work; internal dynamics of work plant as a social system; and labor-management relations in various cultural settings.

# 322. Political Sociology

Fall, Winter. 4(4-0) SOC 241.

Political action in the United States in relation to theory and practice of democracy. Nature of social pressures, political group, politician and effect of local community situation on political activity will be considered.

# 323. Sociology of the Family

Winter, 4(4-0) SOC 241.

Sociological analysis of the family, its development as a social institution, its relationship to society, and its contribution to personality.

## 329. Urban Sociology

Fall, Winter, Spring. 4(4-0) SOC 241.

Urban theory and research techniques emphasizing the demography, ecology and social organization of American cities and sociological aspects of urban planning and redevelopment.

### 332. Behavior of Youth

Winter, Spring. 4(4-0) SOC 241.

Sociological analysis of normal and deviant behavior of youth. Issues related to the existence of youth subcultures. Relation of social change to behavior of youth.

## 333. Racial and Ethnic Inequality

Winter, Spring. 4(4-0) SOC 241.

Sociology of racial and ethnic problems in contemporary society with an emphasis on American society. Attention to specific ethnic and racial groups in terms of prejudice and discrimination with particular concern for the resolution of inequality.

# 353. Sociology of Sex and Gender Fall. 4(4-0) SOC 241.

Analysis of the organization of gender - divisions between women and men and sexual inequalityin production, reproduction, sexuality, and the socialization of children. Includes both institutional and social psychological perspectives.

## 400H. Honors Work

Spring. 1 to 4 credits. May reenroll for a maximum of 20 credits. Approval of department.

Study on an individual or class basis on various sociological topics.

# 401. Sociology of Education

Winter. 4(4-0) SOC 241. Interdepartmental with the Department of Teacher Education.

School as a social institution, school-community relations, social control of education, and structure of school society.

#### 418. Critical Issues in Contemporary Africa (MTC)

Fall, Spring. 3(3-0) May reenroll for a maximum of 9 credits if different topics are taken. One course on African subject and approval of instructor. Interdepartmental with African Languages and the departments of Anthropology, Geography, History, and Political Science. Administered by the Department of History.

Four separate multidisciplinary topics will be offered at different times: The Horn of Africa, Southern Africa, Africa and the Americas, Social Impact Studies.

# 420. Dynamics of Population

 $Fall, \, Winter, \, 4 (4 \hbox{--} 0) \, One \, 300 \, level \, sociology \, course.$ 

General demographic theories, especially those concerning population growth. Population distribution and density, age, sex, and ethnic composition. Emphasis on fertility, mortality, and migration and their influences on population change.

#### 423. Sociology of the Health Care System

Winter. 4(4-0) One 300 level sociology or health related course.

Social organizations, occupations, and institutions of the health care system including socioeconomic factors influencing access and utilization, provider-patient interactions, and social epidemiology.

# 424. Sociology of Mental Health

Spring. 4(4-0) SOC 251 or PSY 335.

Sociological theories of etiology of mental disorder; research on social epidemiology and ecology; impact of social structure; popular conceptions of mental health and deviancy; emerging ideologies of mental health disciplines.

## 427. Social Movements and Ideologies

Winter, Spring. 4(4-0) One 300 level sociology course.

The analysis of the collective response to situations of social tension and change that take the form of social movements and their accompanying ideologies. Both historical and contemporary cases will be examined.

## 428. Contemporary Communities

 $Fall,\, Spring.\,\, 4(4\text{-}0)\,\, One\,\, 300\,\, level\,\, sociology\, course.$ 

An examination of the contemporary community. Emphasis will be placed on associational and institutional organization in communities of varying complexity. Particular attention will be paid to social organizational theory as it applies to the problems of American community life.

## 430. Sociology of Work

 $Winter.\ 4 (4-0)\ One\ 300\ level\ sociology$  course.

Social significance of work. Forces changing contemporary occupational structure. Factors associated with typical career patterns of occupations and professions. Social organization of occupational groups with emphasis on their ideology and politics.

# 434. Social Deviance and Control

Spring. 4(4-0) SOC 320.

The relationship between social structure, social control and social deviance; a survey and criticism of present social science theories in light of empirical research and application of theories to selected problem areas.

# 437. Rural Sociology

Fall, Spring. 4(4-0) One 300 level sociology course.

Structure, function and change in rural areas of the United States. The major social systems, social class, demographic characteristics, commodity organizations and value orientations of rural people.

# 438. Sociology of Developing Societies

Spring, 4(4-0) One 300 level sociology

Sociological elements of modernization. Process of technological change and type of programs to induce change. Emergence and accomodation of institutions to change. The changing population, family, community and ideological structures

## 443. Personality and Social Structure

Spring. 4(4-0) SOC 251 or PSY 335; one 300 level sociology course.

Effects of social structural variables upon personality development, adult socialization, role behavior, self image, and self evaluation.

## 448. Small Group Interaction

Winter. 4(4-0) SOC 251 or PSY 335; one 300 level sociology course.

Properties of social interaction in small groups. Relationship between group structure and social interaction.

# 471. Modern American Society

Winter, Spring. 4(4-0) One 300 level sociology course.

Cultural patterns and social structures of contemporary American life. Relationship of these patterns and structures to individual and group adjustment.

# 473. Culture and Personality

Fall, Spring. 4(4-0) One 300 level anthropology or sociology course. Interdepartmental with and administered by the Department of Anthropology.

Human nature in evolutionary and cross-cultural perspective. Special attention to relating theories of anthropology and psychology to methods of studying personality in non-Western societies.

## 475. Individual Research Projects

Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits. Nine credits in sociology and approval of department.

## 477. Complex Organizations

Spring. 4(4-0) One 300 level sociology course.

Bureaucracies and complex formal organizations in various institutional settings and the relationship among organizations in the community. Informal structures, internal conflict, integrative mechanisms, and the dilemmas of professional and administrative demands will be emphasized.

# 485. Wealth and Poverty

Winter, 4(4-0) SOC 310.

Distribution of income and wealth in contemporary industrial societies; relevance of wealth to prestige and political orders of societies; social consequences of public and private programs.

# 490. Special Topics

Fall, Winter, Spring, Summer. 4(4-0) May reenroll for a maximum of 12 credits if different topic is offered. SOC 241 or approval of department.

Experimental courses and courses taught by visiting scholars.

# 499. Senior Seminar

Spring. 3 to 5 credits. Senior majors or approval of department.

Selected issues in sociological research and theory.

#### 803B. Comparative Foundations of Education: Education in Industrialized Societies

(ED 804E., EAC 803B.) Fall. 3(3-0) Approval of department. Interdepartmental with and administered by the Department of Teacher Education.

Comparative study of the policies, practices and social context of educational systems in major industrialized countries, such as Canada, England, France, Germany, Japan, Soviet Union, Sweden.

### 810. General Social Organization

Fall. 4 credits. Majors or approval of department.

Research and literature on the structure and function of social organizations ranging from societies to small groups.

#### 811. Research Problems and Literature in Social Psychology

Fall. 4(4-0) Majors or approval of department.

Central points of view and concepts of contemporary social psychology with emphasis upon symbolic interaction. Collective behavior, small groups, attitudes and behavior, and culture and personality.

# 812. Theory of Sociological Inquiry

Winter. 4(4-0) Majors or approval of department.

Critical review of some of the procedures followed by sociologists and social psychologists in their attempts to achieve reliable knowledge.

# 813. Proseminar in Research Methods Spring. 5(5-0) STT 421.

Examination and comparison of documentary, field, experimental, and survey research methods in social science. Emphasis on techniques of data gathering and analysis, and problems of reliability, validity, sampling and measurement.

## 820. Sociology of Migration

Winter, 4(4-0) SOC 420 or approval of department.

Theory and research in studying the causes, patterns, and consequences of human migration. Emphasis on sociological, social psychological and demographic perspectives.

# 823. Organizational Behavior in Labor and Industrial Relations

Fall, Winter, Summer. 4(4-0) Approval of department. Interdepartmental with and administered by the School of Labor and Industrial Relations.

Analysis of why organizations, individuals and groups in unions, management and government act as they do in industrial relations situations with emphasis on sociological, psychological and cultural factors.

# 827. Social Movements and Ideologies

Spring, 3(3-0) Approval of department.

Organizational structure and supporting belief systems of groups and collectivities which desire major institutional changes in society.

# 831. Documentary and Bibliographic Research Methods.

Fall. 4(4-0) Approval of department. Systematic and detailed exploration of source materials relevant to documentary and biblio-

graphic social science research. Emphasis on research strategy and techniques.

## 837. Special Topics in Rural Sociology

Fall, Winter, Spring. 3 to 8 credits. Approval of department.

Special fields of rural sociology such as farmers' organizations, population, migration, adaption of practices, changing ideologies, political behavior, stratification, and attitudes.

## 839. African Research

(IDC 838.) Fall, Winter, Spring. 2 to 4 credits. May reenroll for a maximum of 8 credits. Graduate standing or approval of instructor. Interdepartmental with African Languages and the departments of Anthropology, Educational Administration, Geography, History, and Political Science. Administered by the Department of Anthropology.

African-related archival and field research topics and methodologies viewed from perspective of relevant social science and humanistic disciplines associated with the African Studies Center.

# 842. Seminar in Conflict and Change

Winter. 3(3-0) Approval of depart-

ment.

Overview of the substantive and research literature in Conflict and Change; and explores possibilities for student research and involvement in the area.

### 845. Classical Sociological Theory

Fall, Winter. 5(5-0) Approval of department.

Nineteenth and early twentieth century sociological theory from Marx to Pareto in sociohistorical context. The development of contemporary sociology theory and research from the classics.

## 846. Sociology of Knowledge

Winter of even-numbered years. 3(3-0) Approval of department.

A selective review of the classical issues posed by the sociology of knowledge, with emphasis upon the implications these have for sociological theory.

## 853. Social Attitudes

Spring. 4(4-0) Approval of department.

Origin, development, classification, and measurement. Relationship between attitudes and behavior. Students will conduct field research.

# 858. Analysis of Sociological Data I Winter. 4(4-0) MTH 108, STT 201.

Analysis of sociological research using categorical variables: interpretation, strengths, weaknesses of commonly used practices.

### 859. Analysis of Sociological Data II

Spring. 4(4-0) SOC 858 or approval of instructor.

Analysis of sociological research using interval and ratio level variables: interpretation, strengths, weaknesses of commonly used practices.

# 860. Topics in Multivariate Analysis

Winter. 5(5-0) STT 421, STT 422.

Selected topics in the areas of path analysis, factor analysis and other multivariate techniques.

#### 864. Population Studies: Research Problems and Literature: Seminar

Winter, 3 to 4 credits. May reenroll for a maximum of 16 credits. Approval of department.

Theoretical and substantive literature relating to demographic change, and research problems of special interest.

#### Selected Research and Literature In Social Institutions

Fall, Winter, Spring. 4(4-0) May reenroll for a maximum of 16 credits.

A review and analysis of the significant literature concerning major problems in the institutional structure of modern society. A. Economic and Industrial; B. Political; C. Keligious; D. Family.

#### Social Organization and Administration 868.

Fall, Spring. 3(3-0) Approval of department.

General principles of inter- and intra-organizational change in the administrative process.

#### 869. Social Impact Analysis and International Development

Spring of odd-numbered years. 4(4-0) Approval of department. Interdepartmental with and administered by the Department of Anthropology

Evaluation of development programs and assessment of their sociocultural impacts on Third World rural populations. Methods of impact analysis. Anthropological theories of change and development.

# Seminar in Teaching Sociology

Spring, Summer. 4(4-0) Approval of department.

Theory and Practice in College Teaching of Sociology. Role related pressures on sociology teachers and methods of facilitating significant learning. Course organization, alternative instructional procedures, and evaluation techniques.

#### 872. Seminar in Special Subject Fields

Fall, Winter, Spring. 3 to 8 credits. May reenroll for a maximum of 40 credits. Approval of department.

Special fields of study will include any area of sociology and social psychology selected.

### Individual Research Projects

Fall, Winter, Spring, Summer. 1 to 8 credits. May reenroll for a maximum of 24 credits. Approval of department.

## Seminar in Complex Organizations Winter. 4(4-0) SOC 321 or SOC 477 or

approval of department.

Major theoretical and methodological problems in studying complex organizations. Using a com-parative approach, special emphasis will be given to the design and execution of empirical research.

#### 880. Individual Readings

Fall, Winter, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 40 credits. Approval of department.

#### Seminar in Social Stratification 884.

Spring. 3(3-0) Approval of department.

Theory and research in societal systems of strati-fication. The articulation of stratification orders to institutional structures. Research design in stratification studies.

#### 885. Dependency, Development and International Inequality

Winter. 4(4-0) Approval of department.

Focus on conceptual formulations concerning uneven development and problems of social and economic change within structures of dependency; uses of research-based knowledge for change and development.

#### 886. Sexual Inequality

Winter, 3(3-0) Approval of instructor.

Theoretical and empirical perspectives on sexual inequality. The sexual division of labor; gender and family and economic institutions; sex stratification in relation to class and race; socializa-tion; social change.

## Master's Thesis Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

# Educational Sociology: Seminar

Fall, Winter. 3 or 4 credits. Approval of department. Interdepartmental with the Department of Teacher Education.

#### 903. Urbanization in Comparative Perspective

Fall. 3(3-0)

Comparative research and theory on urbanization in the world system. Relationship of urbanization to development.

#### Sociology of Work 930.

Spring. 4(4-0) SOC 430, SOC 310, SOC 884 or approval of instructor.

Theory and research problems in occupational structure, work settings, functions and meanings of work, occupational mobility and career pat-

#### Human Ecology 941.

Winter of odd-numbered years. 4(4-0) Approval of department.

The analysis of population aggregates in terms of their place in a total ecosystem, defined as the structure of interdependencies involving population, environment, technology, and patterns of organization.

#### 942. Urban Theory

Winter, 4(4-0) Approval of department.

Examination and critique of competing theories of urban structure and process: theories of evolu-tion of human settlement, classic location theories, human ecology, communication and system theories.

#### **Techniques of Population Analysis** 952. Spring. 4(4-0) SOC 420; STT 422 or

approval of department.

Techniques for the analysis of population size and composition, mortality, fertility, migration, population estimates and forecasts, population and labor force distribution, and selected techniques of ecological analysis.

#### 954. Social Survey Methods

Spring. 4(4-0) SOC 860.

The design and analysis of theoretically oriented survey research. Sampling, questionnaire construction, interviewing, and data processing.

#### 955. Field Research Methods

Spring. 4 credits. SOC 312; approval of department.

An overview of the design and execution of social research.

#### 964 Seminar in Small Group Research

Fall. 4(4-0) Thirty graduate credits including SOC 811, or approval of department. The experimental and theoretical investigation of organizational processes in small groups.

### Social Structure and the Individual Winter. 4(4-0) SOC 811 or approval of

department.

Contemporary theory and research on the influence of social structure on the individual and the interaction of the individual and social structure as determinants of behavior.

#### 967. Introduction to Formal Theory in Sociology

Spring. 4(4-0) STT 422, a course in research methods.

Analysis of the structure of formal theory in sociology and of the problems of interpretation and verification of deterministic and probalistic theories. Examination of specific practices of theory construction.

#### Symbolic Interactionism: Theory and Research

Spring. 4(4-0) SOC 811; social psychology concentration.

Theoretical and research problems within the framework of symbolic interaction. The socialization process and the development, maintenance, and enhancement of the self. Critique of the literature and proposals for new research directions.

#### 970. Theories of Conflict and Change

Fall, 3(3-0) Approval of department.

Major theoretical European and American contributions to the study of conflict and change.

# Race, Politics, and Social Structure

Winter. 3(3-0) Approval of depart-

ment.

Racism, including the social mechanisms by which it is created, maintained, and lessened, and the variant forms of political action related to racism and social structure.

### Values, Crises and Utopias in a Post-Modern Society

Fall. 3(3-0) Approval of department.

Macro-sociological approach to study of social problems and stresses; planned change; and conscious improvement of modern societies.

#### 976. Theoretical Perspectives in Sociology

Winter. 4 credits. SOC 845 or SOC

846.

Comparison and analyses of concepts, concep tual schemes and theories of outstanding social theorists in relation to modern research.

#### 977. Seminar in Selected Theoretical Issues

Spring of odd-numbered years. 4(4-0) May reenroll for a maximum of 8 credits. SOC

Issue approach to social theory. Selected themes relate to substantive problems in theory, theory construction or the work of a historical or contemporary thinker.

#### 978. Comparative Rural Social Organization

Spring. 4 credits.

Structure and function of social organizations ranging from societies to small groups. The com-parative approach will be used in studying phe-nomena involved in the transitions from agrarian to industrial societies.

Courses

## 981. Comparative Sociology

Fall. 3 or 4 credits. Doctoral student in sociology; completion of core courses.

Macro-sociological studies of societies. The relationship of the whole to the varied parts of societies, the connection between societies, and the patterns of change in different societies. The development of research with respect to the cross-cultural study of social structures, social institutions, and social systems.

# 982. Comparative Social Psychology

Winter. 3 or 4 credits. SOC 981.

Social psychological research problems involving a comparative methodology. Social psychological functions of education, mobility, mass media use, etc. Comparative study of the social psychology of modernization.

# 983. Comparative Research Methods Spring. 3 or 4 credits. SOC 981.

Sampling problems, data collection strategies, problems of translation and concept equivalence. Management, analysis and interpretation of cross-cultural data.

# 991. Seminar in Work and Organizations

Winter. 4(4-0) May reenroll for a maximum of 8 credits. Thirty graduate credits and approval of instructor.

Selected topics in the sociology of work, occupations, and complex organizations.

#### 999. Doctoral Dissertation Research

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

# **SPANISH**

See Romance and Classical Languages.

# STATISTICS AND PROBABILITY STT

# College of Natural Science

Introductory courses are further classified as follows:

315—for undergraduate students of Business Administration.

201-survey course.

421, 422, 423—minimal sequence for students planning to use statistical methods in their research.

 $441,\ 442,\ 443-$  minimal sequence in theory of statistics. Qualified students should take the  $861,\ 862,\ 863$  sequence instead.

861, 862, 863—sequence for students preparing to do advanced work in statistics.

#### 201. Statistical Methods

Fall, Winter, Spring, Summer. 4(4-0) MTH 108 or MTH 111. Primarily for students in psychology, sociology, anthropology, political science, economics, agriculture, and forestry. Credit may not be earned in more than one of the following: STT 201, STT 315, STT 421.

Descriptive statistics, elementary probability and combinatories. 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 and F distributions.

### 290. Special Topics in Statistics and Probability

Fall, Winter, Spring, 1 to 6 credits. May reenroll for a maximum of 6 credits. MTH 108 or approval of department.

# 315. Introduction to Probability and Statistics for Business

Fall, Winter, Spring, Summer. 4(5-0) MTH 111. Credit may not be earned in more than one of the following: STT 201, STT 315, STT 421.

Descriptive statistics, elementary probability, random variables, probability models, sampling distributions, the Central Limit Theorem, confidence intervals and one-sample tests based on normal, t and chi-square with applications to business problems.

#### 317. Quantitative Business Research Methods

Fall, Winter, Spring, Summer. 4(5-0) STT 315. Interdepartmental with and administered by the Department of Marketing and Transportation Administration.

Application of statistical techniques to business decision making. Topics covered include applications of linear regression and correlation, analysis of variance, selected nonparametric tests, time series, and index numbers.

#### 351. Probability and Statistics for Engineers

Fall, Winter, Spring. 4(4-0) MTH 215.

Discrete and continuous probability models, conditional probability, independence, random variables. Estimation and testing, including one- and two-sample tests and confidence intervals. Applications to engineering problems.

# 421. Statistics I

Fall, Winter, Spring, Summer. 4(4-0) MTH 108. Credit may not be earned in more than one of the following: STT 201, STT 315, STT 421. This course and STT 422, STT 423 form a one year sequence in statistics for those without a calculus background; STT 421 provides an introduction to a few of the main ideas of probability and statistics. The course sequences STT 441-2-3 and STT 861-2-3 form one year sequences in statistics for those with a calculus background. Those expecting to use statistics in their graduate research should complete one of the full year sequences.

Descriptive statistics, elementary probability, combinatorics. Binomial distribution. Random variables, expectations and variances. Central Limit Theorem, point estimation. One sample confidence intervals, tests based on the binomial, normal, t, chi-square distributions.

# 422. Statistics II

Fall, Winter, Spring, Summer. 3(3-0) STT 421.

Two sample confidence intervals and tests based on the normal and t-distributions. Nonparametric models, contingency table analysis, simple linear regression, one-way analysis of variance.

#### 423. Statistics III

Fall, Winter, Spring. 3(3-0) STT 422.

Multiple regression. Analysis of variance for various experimental designs such as randomized block, factorial, nested and Latin square designs.

# 441. Probability and Statistics I: Probability

Fall, Winter, Spring, Summer. 4(4-0) MTH 215.

Mathematical probability as a basis for the theory of statistics. Discrete and continuous probability models, conditional probability and independence, random variables, central limit theorem, sampling distributions.

# 442. Probability and Statistics II: Inference

Winter, Spring, 4(4-0) STT 441; MTH 334 or concurrently.

Estimation, confidence intervals, tests of hypotheses, linear models.

### 443. Probability and Statistics III: Inference

Spring. 4(4-0) STT 442.

Multiple linear regression, analysis of variance, goodness of fit tests, certain non-parametric tests.

## 490. Statistical Problems

Fall, Winter, Spring. 1 to 6 credits. Approval of department.

Individualized study adapted to the preparation and interests of the student.

#### 520. Biostatistical and Epidemiological Reasoning

Fall. 4(4-0) Approval of instructor. Interdepartmental with and administered by the Department of Community Health Science. Concepts and principles from biostatistics and epidemiology to facilitate critical reading literature relevant to clinical medicine and community health. Emphasis on design and interpretation.

# 825. Sample Surveys

Fall. 3(3-0) STT 423 or STT 442 or STT

862.

Application of statistical sampling theory to survey designs involving simple random, stratified, and systematic samples; sub-sampling, double sampling; ratio and regression estimates; other topics.

# 826. Nonparametric Statistics

Spring. 4(4-0) STT 442 or STT 862.

Current tests of hypotheses which may be made without specification of the underlying distribution. Rank tests and tests based on permutation of observations. Tolerance and confidence sets. Large-sample distributions. Applications to research in the social and natural sciences.

# 841. Linear Statistical Models

Fall. 4(4-0) STT 443 or STT 863.

Use of linear statistical models. Curve fitting, simple and multiple regression analysis, multiple and partial correlation coefficients, the analysis of variance, simultaneous confidence intervals, more complex experimental designs.

# 843. Multivariate Analysis

Winter of even-numbered years. 3(3-0) STT 443 or STT 863.

The multivariate normal distribution, tests of hypotheses on means, discriminant analysis, multivariate analysis of variance, principal components, factor analysis, analysis of multivariate categorical data.