877. Statistical Inference in Economics III
Spring. 3(3-0) EC 877 or approval of department. Interdepartmental with the departments of Agricultural Economics and Economics and administered by the Department of Economics.
Validation and application of dynamic econometric models. Bayesian approach to estimation problems. Recent developments in econometric methods and in applied econometric research.

886. Stochastic Processes and Technological Applications
Winter. 3(3-0) STT 441 or STT 861.

887. Stochastic Models in the Physical Sciences
Spring. 3(3-0) STT 896 or approval of department.
Selected models from the physical sciences. These may include topics from the theory of queues, the theory of dams, and branching processes in cosmo ray theory.

890. Statistical Problems
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

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

927. Theory of Measure and Integration
Spring. 3(3-0) MTH 822. Interdepartmental with and administered by the Department of Mathematics.
Introduction to the theory of integration over abstract spaces. Topics include: measure spaces, measurable and integrable functions, modes of convergence, theorems of Egoroff, Luzin, Riesz-Fischer, Lebesgue absolute continuity, and the Radon-Nikodym theorem; product measures and Fubini's theorem. Applications to some of the classical theorems of integration and summability.

928. Measure Theory Applications to Probability
Fall. 3(3-0) MTH 927.

929. Foundations of Decision Theory
Winter. 3(3-0) STT 928.

937. Systems Simulation
Fall. 4(4-0) MGT 836, STT 423, MTH 228. Interdepartmental with and administered by the Department of Management.
The concept of a model, model building, characteristics of simulation models. Techniques of computer simulation. Simulation models in research and management planning/control. Validation and experimental design. Special purpose languages.

948. Mathematical Programming For Business
Spring. 4(4-0) MGT 836, MTH 334, MTH 426. STT 563. Interdepartmental with and administered by the Department of Management.

949. Advanced Applied Stochastic Processes
Winter. 4(4-0) MGT 836, MGT 937. Interdepartmental with and administered by the Department of Management.
Selected topics from the following areas: Semi-Markov, Markov renewal and regenerative process models; Markov and semi-Markov decision processes; decision theory, applications from production, inventory, reliability, queueing, and gambling theory.

951. Advanced Theory of Nonparametric Statistics
Fall of odd-numbered years. 3(3-0) STT 873, STT 928 or concurrently.
Possible topics include small and large sample properties of distribution free tests; robust estimation of location, scale and regression parameters; nonparametric ANOVA.

952. Asymptotic Theory
Spring of even-numbered years. 3(3-0) STT 873, STT 929.
Possible topics include large sample behavior of likelihood functions; contiguity; Bahadur and Pitman efficiency of statistical procedures.

953. Advanced Theory of Linear Statistical Models
Fall of even-numbered years. 3(3-0) STT 873; STT 928 or concurrently.
Possible topics include construction and analysis of linear models; regression; ridge regression; optimality criteria, relationships and merits; existence and construction of optimal designs.

954. Sequential Analysis
Spring of odd-numbered years. 3(3-0) STT 873; STT 929.
Possible topics include sequential estimation, testing and design; optimal stopping.

961. Convergence of Measures and Random Variables
Fall of odd-numbered years. 3(3-0) STT 873; STT 928, or concurrently.

962. Martingales
Winter or even-numbered years. 3(3-0) STT 873; STT 928.
Convergence, sampling, decomposition and stopping of sub- and super-martingales. Relationship with differentiation of measures. Applications to sequential analysis and boundary crossing probabilities.

963. Diffusion and Brownian Motion
Spring of even-numbered years. 3(3-0) STT 873; STT 928.
One dimensional diffusion, speed and drift measures, local time, stochastic integral, Ito's theorem.

964. Renewal Theory and Random Walk
Fall of even-numbered years. 3(3-0) STT 873, STT 928, or concurrently.

965. Second Order Processes
Winter of odd-numbered years. 3(3-0) STT 873, STT 928.
Stochastic processes studied by the methods of linear spaces. Sample path properties, representativeness, estimation, prediction, multiplicity.

966. Semi-Groups and Applications
Spring of odd-numbered years. 3(3-0) STT 873, STT 928.
Hille-Yosida theorem, processes of independent increments, infinitely divisible processes, Markov processes in several dimensions.

990. Problems in Statistics and Probability
Fall, Winter, Spring. 1 to 4 credits. May reenroll for a maximum of 10 credits. STT 873. Seminar or individual study on an advanced topic in statistics.

995. Topics in Statistics and Probability
Fall, Winter, Spring. Variable credit.
Nonparametric statistics, multivariate statistical analysis, statistical time series analysis, Bayesian statistics, reliability theory, stochastic approximation, design of experiments, sets of decision problems, stochastic processes, sequential analysis, other topics.

STUDIO ART
See Art.

SURGERY
College of Human Medicine
608. Surgery Clerkship
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 43 credits. H M 602.
An introduction to the surgical patient, stressing surgical diagnosis, pre-operative evaluation and post-operative care. Objectives are designed to help the student attain acceptable levels of surgical competence for physicians.

609. Otolaryngology Clerkship
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 34 credits. H M 602.
Common otolaryngologic disorders, emergencies, including diagnosis and treatment, and judgments concerning proper management by primary physicians.
610. Plastic Clerkship  
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 34 credits. If M 602.
Principles of wound healing and tissue repair. Indications and applications of plastic procedures.

611. Urology Clerkship  
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 34 credits. If M 602.
Demonstration of clinical manifestations of genito-urinary disease, investigational methods and techniques of diagnosis and management. Familiarity with urologic emergencies and performance of basic urologic skills.

613. Orthopedic Clerkship  
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 34 credits. If M 602.
Diagnostic and management information and skills, including emergencies, in common orthopedic problems.

614. Neurosurgery Clerkship  
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 34 credits. If M 602.
A hospital-based experience to provide the student with familiarity with the field and understanding of the contribution of neurosurgery in medicine generally.

615. Ophthalmology Clerkship  
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 34 credits. If M 602.
Development of skills and knowledge in ophthalmoscopy, neuro-ophthalmology, visual function, and management of problems such as glaucoma, the red eye, and trauma.

616. Thoracic Surgery Clerkship  
Fall, Winter, Spring, Summer. 1 to 17 credits. May reenroll for a maximum of 34 credits. If M 602.
Problem-solving in thoracic medicine and surgery, also stressing pulmonary physiology, use of diagnostic tools and tests, and indications for surgical procedures.

618. Anesthesiology Clerkship  
Fall, Winter, Spring, Summer. 4 to 16 credits. May reenroll for a maximum of 18 credits. If M 602.
Introduces common anesthetic agents and provides opportunity for performing anesthetic procedures under faculty supervision.

630. Emergency Medicine Clerkship  
Fall, Winter, Spring, Summer. 4 to 8 credits. May reenroll for a maximum of 8 credits. SUR 609, H D 609 or MED 608, If M 602. Interdepartmental with and administered by the Department of Medicine.
Pathophysiology and other basic concepts will be used to explain the development of emergency conditions. Clinical diagnosis and treatment of emergencies seen in community emergency departments will be discussed.

**SYSTEMS SCIENCE**

See Electrical Engineering and Systems Science.

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**TELECOMMUNICATION TC**  
(Name change effective July 1, 1975. Formerly Department of Television and Radio.)

**College of Communication Arts and Sciences**  
(Name change effective July 1, 1975. Formerly College of Communication Arts.)

120. Telecommunication in the United States  
Fall, Winter, Spring. 3(3-0) Nonmajors.
History, economics, public control, programming, social effects and future of telecommunication, primarily radio and television broadcasting and cable communication. Citizen responsibilities in the development of telecommunication systems and services.

210. Telecommunication Processes  
Fall, 3(3-0) Sophomores, Telecommunication majors.
Human communication processes and behavior as modified by telecommunication. Audiences of telecommunication. Functions and dysfunctions of telecommunication. Contemporary implications of telecommunication media on society.

220. History and Economics of Telecommunication  
Winter. 4(3-2) Sophomore TC majors, EC 201.
Institutional and cultural development and underlying economic principles of the telecommunication field, including broadcast programs.

230. Basic Telecommunication Technology  
Spring. 4(3-2) Sophomore TC majors.
An analysis of technical factors involved in electronic communication: transmission, sound physics and art technology, light physics, visual behavior and image technology, computer and automation controls, technical telecommunication policy formulation.

250. History of the Motion Picture  
Fall, Winter. 4(2-4) Sophomores.
Development of the motion picture from its beginning to the present, emphasizing social background and cultural values. Screening of significant films from various periods and countries.

301. Basic Audio Production  
(201.) Fall, Winter, Spring, Summer. 4(2-4) TC 230.
Basic orientation to audio and radio studios, with laboratory experiences in production, writing and performance.

302. Basic Video Production  
(202.) Fall, Winter, Spring. 4(2-4) TC 230.
Basic orientation to video and television studios, with lab experiences in production, writing and performance.

310. Basic Telecommunication Policy  
Fall, Winter. 4(4-0) Juniors, approval of department.
Essential U.S. public communication policy is treated through rigorous methodological analysis of case and statutory law, public documents and related primary materials.