948. Mathematical Programming For Business

Spring of even-numbered years. 4(4-0) MGT 835. Interdepartmental with and administered by the Department of Management.

Large mathematical programs with special structure. Duality and decomposition. Dynamic programming; multistage decision processes and the principle of optimality. Integer programming.

951. Advanced Theory of Nonparametric Statistics

Spring of even-numbered years. 3(3-0) STT 929.

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

Winter of even-numbered years. 3(3-0) STT 929.

Possible topics include large sample behavior of likelihood functions; contiguity; Bahadur and Pitman efficiency of statistical procedures.

954. Sequential Analysis

Spring of odd-numbered years. 3(3-0) STT 929.

Possible topics include sequential estimation, testing and design; optimal stopping.

955. Estimation and Testing

Winter of odd-numbered years. 3(3-0) STT 929.

Possible topics include completeness and admissibility results for the family of Neyman-Pearson tests, minimum variance estimates, admissibility of estimates in exponential families and estimation in the normal multivariate case.

961. Convergence of Measures and Random Variables

Fall of odd-numbered years. 3(3-0) STT 883.

Topology of vague convergence of measures. Conditions for relative compactness of a set of measures. Relationships between vague, almost sure, and in-measure convergence. Donsker's theorem and its extensions; applications to statistics.

962. Martingales

Winter of even-numbered years. 3(3-0) STT 883.

Convergence, sampling, decomposition and stopping of sub- and super-martingales. Relationship with differentiation of measures. Applications to sequential analysis and boundary crossing probabilities.

963. Stochastic Analysis

Spring of even-numbered years. 3(3-0) STT 883.

Brownian motion. Stochastic integrals. Ito's formula. Stochastic differential equations. Diffusion processes.

964. Renewal Theory and Random Walk

Fall of even-numbered years. 3(3-0) STT 883.

Renewal events and processes, random walk, Wiener-Hopf factorization, Tauberian theorem. Renewal-Type Equations. Branching processes, birth and death processes.

965. Stationary and Second Order Processes

Winter of odd-numbered years. 3(3-0) STT 883.

Stationary, second order, and Gaussian processes. Sample path properties. Linear and nonlinear prediction and estimation. Applications.

966. Markov Processes

Spring of odd-numbered years. 3(3-0) STT 883.

Transition functions, semigroups, generators. Sample path properties. Strong Markov property. Characterization and convergence of Markov processes. Ergodicity.

990. Problems in Statistics and Probablility

Fall, Winter, Spring, Summer. 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. 1 to 4 credits. May reenroll for a maximum of 36 credits.

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.

999. Doctoral Dissertation Research

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

STUDIO ART

See Art.

SURGERY SUR

College of Human Medicine

608. Basic Surgery Clerkship

Fall, Winter, Spring, Summer. 6 to 15 credits. May reenroll for a maximum of 30 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. H 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. H M 602.

Demonstration of clinical manifestations of genito-urinary disease, investigative 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. H 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. H 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. H M 602.

Development of skills and knowledge in ophthalmoscopy, neuro-opthalmology, 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. H 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 16 credits. H M 602.

Introduces common anesthetic agents and provides opportunity for performing anesthetic procedures under faculty supervision.

619. General Surgery Elective Clerkship

Fall, Winter, Spring, Summer. 4 to 16 credits. May reenroll for a maximum of 16 credits. H M 602 and SUR 608.

Experiences in clinical general surgery.

620. Advanced Surgery Clerkship

Fall, Winter, Spring, Summer. 6 to 8 credits. May reenroll for a maximum of 16 credits. SUR 608; MED 608.

Focus on advanced clinical and surgical skills. Students have more responsibility for patient care and direct learning to specific topics in general or subspecialty surgery. Clerkship options vary by community.

621. Nutritional Care of Surgical Patients

Fall, Winter, Spring, Summer. 4 to 12 credits. SUR 608, MED 608, approval of instructor.

Clinical experience on the Nutrition Team in dealing with surgical and medical patients requiring therapeutic nutrition as a result of metabolic derangement and nutritional deficiencies. Major emphasis on nutritional assessment and formulation of plans of management through intravenous support.