952. Asymptotic Theory
Spring of even-numbered years. 3(3-0)
STT 873; STT 928
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. 2(2-0)
STT 873; STT 929
Possible topics include sequential estimation, testing and design, optimal stopping.

955. Convergence of Measures and Random Variables
Fall of odd-numbered years. 3(3-0)
STT 873; STT 929, or concurrently.

961. Martingales
Winter or even-numbered years. 2(2-0)
STT 873; STT 929.
Convergence, sampling, decomposition and stopping of sub- or super-martingales. Relationship with differential 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, Itô'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, representations, 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. 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. 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.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

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. 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-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. 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. 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 9 credits. May reenroll for a maximum of 16 credits. H M 602 and SUR 608.
Experiences in clinical general surgery.

630. Emergency Medicine Clerkship
Fall, Winter, Spring. Summer. 4 to 9 credits. May reenroll for a maximum of 8 credits. SUR 608, PHD 608 or MED 608; H M 602.
Interdepartmental with and administered by the Department of Medicine. Pathophysiology and other basic concepts will be used to explain the development of emergent conditions. Clinical diagnosis and treatment of emergencies seen in community emergency departments will be discussed.

SYSTEMS SCIENCE
See Electrical Engineering and Systems Science.

TELECOMMUNICATION - Descriptions of Courses

TC College of Communication Arts and Sciences

120. Telecommunication Media and Society
Fall, Winter, Spring. Summer. 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 Process and Effects
Fall, 3(3-0) Sophomores. Telecommunication majors.
Human communication processes and behavior as modified by telecommunication. Functions, audiences, and implications of electronic 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 aural 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, economic, and statutory law, public and private telecommunication policies involved in the field. May reenroll for a maximum of 16 credits. May reenroll for a maximum of 16 credits. Telecommunication juniors and seniors; approval of department.

201. Basic Audio Production
Fall, Winter, Spring. 4(2-4) TC 210, TC 220, TC 230.
Basic orientation to audio and radio studios, with laboratory experiences in production, writing and performance.

202. Basic Video Production
Fall, Winter, Spring. 4(2-4) TC 301.
Basic orientation to video and television studies, with lab experiences in production, writing and performance.

280. Human communication processes and behavior as modified by telecommunication. Functions, audiences, and implications of electronic media on society.

591. Telecommunication Internship
Fall, Winter, Spring. 3(3-0) TC 361 and approval of department.
Internship in a telecommunication studio or in a government agency or business.

301. Basic Audio Production
(201.) Fall, Winter, Spring. 4(2-4) TC 210, TC 220, 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 301.
Basic orientation to video and television studies, with lab experiences in production, writing and performance.

310. Basic Telecommunication Policy
Fall, Winter. 4(4-0) TC 210, TC 220, TC 230.
Essential U.S. public communication policy is treated through rigorous methodological analysis of case and statutory law, public documents and related primary materials.

335. Audience Survey and Analysis
Winter, Spring. 4(4-0) Juniors.
Designing research for the study of telecommunication audiences. Survey research, sampling, questionnaire construction, research administration. Analyses and interpretation of research results. Audience measurement services and feedback systems.

360. Advanced Radio Production
Fall, Spring. 4(2-4) TC 301 and approval of department.
Planning, coordinating and producing the radio program. Emphasis on documentary and studio productions utilizing original ideas and methods.

351. Television Studio Production
Fall, Spring. 4(2-4) TC 302, approval of department.
Advanced television production. Writing and production of programs directed by students in TC 451.
841. News and Public Affairs Producing
Spring. 4(2-4) Approval of department.
Researching, writing and producing extended news and public affairs reports.

850. Telecommunication Sales Management
Winter. 4(4-0) TC 401 or approval of department.
Direction and supervision of station sales and promotion personnel in securing and servicing national, regional and local accounts.

851. Telecommunication Financial Management
Spring. 4(4-0) TC 532.
Financial analysis of broadcast stations and cable systems, acquisition criteria, recapitalization, and evaluation of system performance. Role of finance and managerial economics in pricing, profit maximization. Application of forecasting techniques.

852. Telecommunication Industries
Spring. 4(4-0) EC 201 or approval of department.
Economic examination of telecommunication industries with emphasis on market structure, conduct, performance, program diversity, new technologies, recent regulatory policies, antitrust, and common carrier.

870. Global Broadcasting: Foreign Domestic Systems
(990.) Winter. 4(4-0) TC 498 or approval of department.
Organization, financing, and programming as related to historic and cultural determinants. Special emphasis on the role of broadcasting in developing nations.

(991.) Spring. 4(4-0) TC 498 or approval of department.
Propaganda and information services. International coordinating organizations such as U.N., UNESCO, Eurovision, and Intervision. Developments in satellite communication.

880. Public Broadcasting
Winter. 4(4-0) TC 489 or approval of department.
Investigation of the role, organization, and problems of non-profit broadcasting by television and radio, especially since its recognition by federal legislation as an alternate program service to commercial broadcasting in the United States.

885. Teaching of Broadcasting
Summer. 4(4-0) Approval of department.
Philosophy and objectives of instruction in broadcasting. The undergraduate and graduate curricula. The content of radio and television courses and methods of teaching.

887. Evaluation and Criticism in Broadcasting and Film
(941.) Winter. 3(3-0) Approval of department.
Evaluation and criticism of standards for objective appraisal of the social, ethical and artistic aspects of radio, television and film programs.

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

899. Master's Thesis Research
Fall, Winter, Spring, Summer. Variable credit. Approval of department.

910. Public Policy in Mass Media II
Fall. 4(4-0) Students in the Ph.D. Program in the Mass Media or approval of department.
Analysis of theory, documents and research in public policy as it relates to mass media including administrative, antitrust, copyright, advertising and communication policy.

931. Mass Media and the First Amendment
Fall. 4(4-0) Advanced graduate students. Interdepartmental with the departments of Advertising and Journalism. Administered by the Department of Journalism.
First amendment rights and the mass media. Analysis in depth of past and present public policy in areas of confrontation over guaranteed rights of freedom of expression.

THEATRE – THR Courses

101. Theatre Appreciation: Foundations
Fall, Winter, Spring, Summer. 3(3-0).
An overview of theatre arts as a recreational, cultural and social force in contemporary life; fundamentals of play production.

104. Introduction to Costuming
Fall, Winter, Spring. 3(2-2).
Introductory study of theatrical costume including theory, patterning, materials, construction and history of dress.

204. Sophomore Theatre Practicum
Fall, Winter, Spring, Summer. 12(0-40) THR 104, THR 221 or approval of department.
Theatre apprenticeship served in the MSU production program.

211. Sophomore Acting Practicum I
Fall. 4(0-10) THR 233 or approval of department.
Intensive preparation of actor's physical and vocal instrument through exercises and improvisation and scene study.

212. Sophomore Acting Practicum II
Winter. 4(0-10) THR 211 or approval of department.
Continuation of THR 211.

213. Sophomore Acting Practicum III
Spring. 4(0-10) THR 211, THR 212 or approval of department.
Continuation of THR 212.

221. Introduction to Technical Theatre
Fall, Winter, Spring, Summer. 3(2-2).
Fundamentals of the technical aspects of stage practice with an opportunity to practice basic technical theatre skills in the department shops.

223. Introduction to Acting
Fall, Winter, Spring, Summer. 4(1-6).
Training the beginning actor to utilize his experiences to develop himself as an artistic instrument.

300A. Rehearsal
Fall, Winter, Spring, Summer. 10(0-3).
May reenroll for a maximum of 4 credits. Combined credits in THR 300A and THR 300B may not exceed 6. Approval of instructor.
Rehearsal in the public performance program of the Department of Theatre.

300B. Production
Fall, Winter, Spring. 10(0-3).
May reenroll for a maximum of 6 credits. Combined credits in THR 300A and THR 300B may not exceed 6. Approval of instructor.
Production work in the public performance program of the Department of Theatre.

301. Directing and Design Practicum I
Fall. 4(0-8) THR 201 or approval of department.
Practice in directing for the theatre emphasizing the concept of the stage as an expressive medium for movement and design.

302. Directing and Design Practicum II
Fall. 3(4-0) THR 301 or approval of department.
Continuation of THR 301.

303. Directing and Design Practicum III
Fall. 4(0-8) THR 302 or approval of department.
Continuation of THR 301 and THR 302.

304. Basic Production Design
Spring. 3(0-4) Approval of department.
Basic rendering and design techniques relative to effective costume and scenic design.

323. Intermediate Acting
Winter, Spring. Summer. 4(1-6) THR 223, for nonmajors only.
Continuation of THR 223 with emphasis on vocal interpretation and characterization.

406. Oral Interpretation
Winter. Spring. 3(1-4) THR 223 or THR 211.
Training in selecting, interpreting, and performing literature for an audience.

411. Acting Studio I
Fall. 4(0-10) May reenroll for a maximum of 8 credits. THR 213 and approval of department.
An intensive acting practicum designed to deal with problems in acting style as well as the extension of the actor's range.

412. Acting Studio II
Winter. 4(0-10) May reenroll for a maximum of 8 credits. THR 411 or approval of department.
Continuation of THR 411.

413. Acting Studio III
Spring. 4(0-10) May reenroll for a maximum of 8 credits. THR 412 or approval of department.
Continuation of THR 412.

414. Auditioning
Fall. 2(1-2) Approval of department.
Selection and preparation of audition materials to prepare the student for the audition situation.