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 tests 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.

630. Emergency Medicine Clerkship
Fall, Winter, Spring, Summer. 4 to 8 credits. May reenroll for a maximum of 8 credits. SUR 608, M D 608 or MED 608, H M 602.
Intermediate and advanced level of care is offered. 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

College of Communication Arts and Sciences

120. Telecommunication in the United States
Fall, Winter, Spring. 3(3-0) Non-majors.
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.
Economic 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 background and cultural values. Screening of significant films from various periods and countries.

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

310. Basic Telecommunication Policy
Fall, Winter. 4(0-4) 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, Summer. 4(0-4) Juniors.
Designing research for the study of telecommunication audiences. Survey research, sampling, questionnaire construction, research administration. Analysis and interpretation of research results. Audience measurement services and feedback systems.

350. 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 crew operations. Writing and production of programs directed by students in TC 451.

361. Television Directing
Fall, Winter, Spring. 4(2-4) TC 303 and approval of department.
Television production and directing methods with assigned experiences in the television studios.

A-199
Descriptions – Telecommunication

of Courses

390. Cinema I
Fall, 4(3-2) TC 290 and approval of department.
Survey of the film production process: concepts, techniques, procedures, problems, emphasis on production as the execution of film design.

396. The Documentary Film
Spring, 4(2-4) TC 290.
History of documentary film and analysis of documentary types, providing a solid basis for the understanding and evaluation of the nonfiction film. Screening of significant films.

399. WKAR-TV Internship
Fall, Winter, Spring, 2 credits. May reenroll for a maximum of 4 credits. TC 302, approval of department.
Internship in television studio operations.

401. Station Operations and Programming
Fall, Spring, 4(4-0) Seniors, TC 310, TC 335.
Sales, ratings, station organization, departmental functions, promotion, program formats, station-community relations, ascertainment of community needs, license renewal, stations-network relations.

415. Cable Communication
Winter, 4(4-0) Juniors.
History, technology, public policy, services, economics, management and social effects of broadband cable communication systems.

437. Television Program Development
Winter, Summer, 3(1-4) Senior non-majors.
Television production planning and practices. Designed for non-majors who desire a working knowledge of the medium for application in other fields.

451. Advanced Television Directing
Fall, Spring, 3(0-6) TC 361, approval of department.
Assigned experiences in television directing of programs written and produced by students in TC 351.

489. Television and Radio in Education
Fall, Summer, 4(4-0) Seniors, Juniors with approval of department.
Uses of broadcast media for instructional purposes, both on-the-air and in the classroom. Current usages by institutions of higher learning and public schools, including both broadcasting and closed-circuit television. Survey of research studies of the effects of educational broadcasting. Types of educational programs are evaluated. Specialists in educational radio and television participate as guest lecturers.

490. Cinema II
Spring, 4(1-6) TC 390 and approval of department.
Theory and practice in film production: script, scheduling, shooting, editing, sound. Elaboration and implementation of Cinema I concepts.

498. International Telecommunication
Fall, Summer, 4(4-0) Seniors; Juniors with approval of department.
Alternative approaches to television, radio, cable, and satellite communication with examples from selected national and international systems. Telecommunication's role in national development. Conflict and cooperation in information distribution and propaganda.

499. Individual Projects
Fall, Winter, Spring, Summer. Variable credit. Junior telecommunication majors and approval of department.

801. Trends and Issues in Telecommunication
Spring, Summer, 4(4-0) Approval of department.
Salient issues and prevailing trends in telecommunication. Consideration of interdependence and relationships within and between telecommunication systems, services, and society.

810. Telecommunication Policy Analysis
Winter, 4(4-0) TC 310, or approval of department.
Systematic interdisciplinary analysis of major public and private telecommunication policies applying tenets from law, political science, economics, communication, general social science and technology.

820. Art Instructional Media Laboratory II – Television
Fall, Winter, Spring, Summer, 4(1-9) May reenroll for a maximum of 8 credits. Approval of department. Interdepartmental and jointly administered with the Department of Art.
Analysis of teaching video tapes and television programs in art. Utilization of television as a medium of artistic expression and communication for application to art education or related fields.

825. Seminar in Instructional Television
Spring, Summer, 3(3-0) Approval of department. Interdepartmental and administered by the College of Education.
Television use in instruction, particularly as it concerns the learner, the classroom teacher, the instructional developer and the administration.

830. The Television Producer
Fall, Winter, 4(4-0) TC 361 or approval of department.
Producer's functions in planning and supervising the execution of television programs, with emphasis on content, organization and use of production techniques to secure the intended audience response.

831. Media Research I
Fall, 4(4-0) Approval of department. Interdepartmental with the Department of Advertising.
Survey and experimental research designs and their relationship to mass media problems. Applied mass media research, audience research, consumer studies, mass media message research.

832. Media Research II
Winter, 4(4-0) TC 531. Interdepartmental with the Department of Advertising.
Data analysis techniques and presentation of mass media research data. Models for the study of mass media research problems.

840. News and Public Affairs Programming
Winter, 4(4-0) Approval of department.
Analysis of broadcast journalism functions in relation to program design. Writing practice in analytic and editorial forms. Programming responsibilities, legal and ethical restraints.

841. News and Public Affairs Producing
Spring, 4(2-4) Approval of department.
Researching, writing and producing extended news and public affairs reports.

850. Broadcast Management: Sales and Promotion
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. Broadcast Management: Profit and Personnel
Spring, 4(4-0) TC 401 or approval of department.
The management of station finances and the motivation of station personnel.

870. Global Broadcasting: Foreign Domestic Systems
(995, 996) 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.

(995, 997) Spring, 4(4-0) TC 499 or approval of department.
Propaganda and information services. International coordinating organizations such as ITU, 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.
THEATRE

College of Arts and Letters

101. Theatre Appreciation: Foundations
Fall, Winter, Spring, Summer. 3(3-0).
Theory of the theatre as a recreational, cultural and social force in contemporary life; fundamentals of play production and analysis for critical appreciation.

104. Introduction to Costuming
Fall, Winter, Spring. 3(2-2).
Aspects of theatrical costuming including theory, patternmaking, materials, construction, and history of dress.

204. Intensive Sophomore Practicum
Fall, Winter, Spring, Summer. 3(0-40).
Theatre apprenticeship conducted on MSU campus and at Calumet Theatre.

211. Sophomore Acting Practicum I
Fall, 4(3-0) THR 101, THR 103 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).
Non-majors only.
To acquaint the student with fundamental practice of stage appreciation and discipline with an opportunity to practice basic technical theatre skills.

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. 1(0-1). May reenroll for a maximum of 6 credits. Combined credits in THR 300A and THR 300B may not exceed 6. Approval of director.
A minimum of 6 hours of rehearsal per week in the public performance program of the University Theatre.

300B. Production
Fall, Winter, Spring, Summer. 1(0-1). May reenroll for a maximum of 6 credits. Combined credits in THR 300A and THR 300B may not exceed 6. Approval of technical staff.
A minimum of 6 hours of production assignment per week in the public performance program of the University Theatre.

301. Directing and Design Practicum I
Fall, Winter, 4(0-8) THR 204 and approval of department.
Practice in directing for the theatre emphasizing the concept of the stage as an expressive medium for movement and graphic design.

302. Directing and Design Practicum II
Winter, Spring. 3(1-4) THR 301 or approval of department.
Continuation of THR 301.

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

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

323. Intermediate Acting
Winter, Spring. 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(4-1) THR 223 or THR 211.
Purpose is to train student to take written literature, explore background and interpretation and perform verbally and physically for audience. Poetry, prose and drama.

411. Acting Practicum I
Fall. 4(0-10) May reenroll for a maximum of 6 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 Practicum II
Winter. 4(0-10) May reenroll for a maximum of 6 credits. THR 411 or approval of department.
Continuation of THR 411.

413. Acting Practicum III
Spring. 4(0-10) May reenroll for a maximum of 6 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.

415. Stage Dialects
Winter. 3(0-3)
Basic sounds, rhythms, melodies of several dialects using ear training method. Knowledge of phonetics, foreign languages helpful but not required. Students practice and perform each dialect.

416. Text Study for Actors
Spring. 3(3-0) May reenroll for a maximum of 6 credits. THR 415 Methodology and practice in dramatic textual analysis for performance. Authors vision, point of view, historical perspective, images.

420. Creative Dramatics I
Fall, Winter, Spring. 3(1-4)
The teacher as a performer. Classroom performance modes and styles. Developing total student involvement through performance. The pedagogy of the arts.

421. Creative Dramatics II
Fall, Winter, Spring. 3(1-4) THR 420.
Dramatic play, playmaking and improvisation with emphasis on school or recreational use of such activities.

425. Youth Theatre Techniques
Fall, Winter, Spring. 4(2-1) THR 420 or approval of department.
Active participation in creating and producing theatre for young people based on improvisation, participation, story telling and/or puppetry.

431. Advanced Theatrical Makeup
Fall. 4(4-0) THR 213.
Theory and application of makeup for the stage.

432. Theatrical Makeup
Fall, Winter. 3(1-4) THR 204 or THR 213.

433. Advanced Theatrical Makeup
Spring. 3(1-4) THR 432.
Continuation of THR 432.

434. Stage Costume Design
Spring. 4(4-0) THR 431 or approval of department.
Theory of costume design. Costume design problems.

435. Stage Scenery Design
Spring. 4(4-0) THR 431 or approval of department.
Theory of and special problems in stage design.

436. Stage Lighting Design
Spring. 4(4-0) THR 301 or approval of department.
Theory and practice in lighting design and equipment.