

**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

## SUR

### 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, 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, H D 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 TC 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, 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.

**280. 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 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 studios, 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, Summer. 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.

**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**  
(333.) Fall, Winter, Spring, Summer. 4(2-4) TC 302 and approval of department.

Television producing and directing methods with assigned experiences in the television studios.

**Descriptions – Telecommunication  
of  
Courses**

- 390. Cinema I**  
Fall. 4(3-2) TC 280 and approval of department.  
Survey of the film production process: concepts, techniques, procedures, problems, tools. Emphasis on production as the execution of film design.
- 396. The Documentary Film**  
Spring. 4(2-4) TC 280.  
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 operation.
- 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.
- 822. 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 with 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. Intedepartmental 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 831. 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., 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.
- 871. Global Broadcasting: International Systems**  
(995., 991.) Spring. 4(4-0) TC 498 or approval of department.  
Propaganda and information services. International coordinating organizations such as ITV, 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.

Formulation and application 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.

**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, 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, 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.

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 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 Practicum 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 Practicum 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.

**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 213.

Methodology and practice in dramatic textual analysis for performance. Authors vision, point of view, historical perspective, images.

**420. Creative Dramatics I**  
Fall, Winter, Spring, Summer. 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, Summer. 3(1-4) THR 420.

Dramatic play, playmaking and improvisation with emphasis on school or recreational use of such activities.

**425. Youth Theatre Techniques**  
(422.) Fall, Spring. 3(2-2) 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. Procedures for Design: Costume and Scenic**

Fall of even-numbered years. 3(3-0) THR 303 or approval of department.

Instruction in fabrics, patterning, and survey of Western stage design.

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

Theory and application of makeup for the stage.

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

Continuation of THR 432.

**434. Stage Costume Design**  
(440.) Spring. 4(4-0) THR 431 or approval of department.

Theory of costume design. Costume design problems.

**435. Stage Scenery Design**  
(440.) Winter. 4(4-0) THR 304 or THR 431 or approval of department.

Theory of and special problems in stage design.

**436. Stage Lighting Design**  
(440.) Fall. 4(4-0) THR 301 or approval of department.

Theory and practice in lighting design and equipment.

## THEATRE

## THR

### College of Arts and Letters

**101. Theatre Appreciation: Foundations**  
Fall, Winter, Spring, Summer. 3(3-0).

Theatre arts 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, patterning, materials, construction and history of dress.

**204. Intensive Sophomore Practicum**  
Fall, Winter, Spring, Summer. 12(0-40) Theatre apprenticeship conducted on MSU campus and at Calumet Theatre.

**211. Sophomore Acting Practicum I**  
Fall. 4(0-10) 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.