

TELECOMMUNICATION TC

Department of Telecommunication, Information Studies and Media College of Communication Arts and Sciences

- 101 Understanding Media in the Information Age**
Fall, Spring, Summer. 3(3-0) SA: TC 100, TC 110
Critique and analysis of media including television, radio, film, handhelds, video games, social media and the Internet. Media history, policy, industry structure, and ethics. Technology, industry and social trends affecting the media in the information society.
- 201 Introduction to Media and Information Technology**
Fall, Summer. 3(3-0) P: TC 101
Operational principles and applications of media and information technologies.
- 233 Documentary Technologies and Problems of Reality-Based Arts**
Fall. 3(2-2) Interdepartmental with English and Writing, Rhetoric and American Cultures. Administered by Telecommunication. R: Open to students in the Documentary Studies Specialization.
Introduction to theoretical, historical, and methodological issues concerning documentary expression and reality-based art forms in a range of media.
- 247 Three-Dimensional Modeling and Design**
Fall, Spring. 3(2-2) P: {CAS 111 and (CAS 206 or CAS 205 or CAS 207)} or (STA 110 and STA 113) R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or in the Game Design and Development Specialization.
Principles of 3D of computer graphics applied in cinema, games, illustration, design and sculpture. Use of 3D software to create and manipulate synthetic objects, materials, lights, and cameras.
- 291 Special Topics**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. A student may earn a maximum of 16 credits in TC 191, TC 291, TC 391, and TC 491.
Contemporary issues in media and communication technology.
- 300 Media Policy and Economics**
Fall. 3(3-0) P: TC 101 SA: TC 200, TC 210
Economics and public policy related to traditional, new and emerging media, including radio, television, cinema, telephony, mobile communications, interactive media, and the Internet.
- 301 Bringing Media to Market**
Spring, Summer. 3(3-0) P: TC 101 SA: TC 356, TC 381
Process of bringing media to market across multiple delivery platforms including broadcast, cable, satellite, internet and mobile devices. Industry structure of creative and distribution methods, pricing and repurposing of content. Practical and theoretical models of the behavior of media consumers.
- 331 Introduction to Interactive Media Design**
Fall, Spring. 3(2-2) P: TC 201 and CAS 204 and CAS 208 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or in the Game Design and Development Specialization or in the Information Technology Specialization. SA: TC 241
Brainstorming, planning, implementing, and troubleshooting applications and interfaces for interactive media. Basic principles of programming for interactivity.
- 335 Film Directing**
Fall. 4(2-4) Interdepartmental with English. Administered by English. P: (ENG 230 and TC 243) and completion of Tier I writing requirement R: Approval of department; application required.
Concepts and techniques for directing in styles most associated with the art of film. Studies of innovative film directors. Skills of film directing, including script and shot breakdown. Directing actors and crew. Directing on location.
- 337 Compositing and Special Effects**
Fall. 3(1-4) P: {(CAS 201 and CAS 202) and (CAS 205 or CAS 206 or CAS 207)} or THR 219 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Department of Theatre or in the Documentary Studies Specialization or in the Fiction Film Production Specialization. SA: TC 437
Conceptual and technical use of animation and compositing software for television, cinema, interactive media, and live performance.
- 341 Film Style Production for Cinema and Television**
Fall, Spring, Summer. 3(2-2) P: CAS 112 and CAS 201 and CAS 202 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Documentary Studies Specialization or in the Design Specialization or in the Fiction Film Production Specialization.
Advanced film style planning, techniques, and aesthetic principles for cinema and television production.
- 342 Multi Camera Production for Television**
Fall, Summer. 3(2-2) P: CAS 112 and CAS 201 and CAS 202 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Documentary Studies Specialization or in the Design Specialization or in the Fiction Film Production Specialization.
Conceptualizing, designing, planning, producing, directing and evaluating multi-camera video programs.
- 343 Basic Audio Production**
Fall, Spring, Summer. 3(2-2) P: CAS 112 and CAS 201 and CAS 202 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Documentary Studies Specialization or in the Design Specialization or in the Fiction Film Production Specialization.
Basic audio production techniques. In-depth audio and radio industry analysis. Media writing.
- 346 Web and Mobile Game Design**
Fall. 3(2-2) P: TC 331 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or in the Game Design and Development Specialization.
Design and development of digital games for the web and mobile platforms.
- 347 Three-Dimensional Computer Animation**
Spring. 3(2-2) P: TC 247 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or in the Game Design and Development Specialization.
How aesthetic skill, technical competency, and engaging performance are woven together to create compelling animation using 3D computer graphics. Use of industry standard software to create, manipulate and render synthetic characters and their environments.
- 348 Advanced Lighting and Camera Techniques**
Fall, Spring. 3(1-4) P: TC 341 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Documentary Studies Specialization or in the Fiction Film Production Specialization.
Advanced techniques for manipulation of light and image characteristics in film and television settings.
- 349 Client-Side Web Development**
Fall. 3(2-2) P: CAS 204 and CAS 205 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or in the Information Technology Specialization.
Development of web sites, services, and applications that employ primarily client-side technologies.
- 351 Producing For Cinema and Television**
Spring. 3(3-0) P: (CAS 201 and CAS 202) and CAS 112 R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Documentary Studies Specialization or in the Design Specialization or in the Fiction Film Production Specialization.
Conceptualizing, designing, planning, and developing projects for cinema and television.
- 355 Media Research**
Fall, Spring, Summer. 3(3-0) Interdepartmental with Advertising. Administered by Advertising. R: Open to undergraduate students in the College of Communication Arts and Sciences. SA: ADV 340, TC 376
Applied media research methods, practices, techniques and ethics in media settings.
- 359 Server-Side Web Development**
Spring. 3(2-2) P: TC 349 R: Open to students in the Department of Telecommunication, Information Studies and Media. SA: TC 449
Development of advanced Web sites, services, and applications that employ both client-side and server-side technologies.
- 361 Information and Communication Technology Management**
Fall. 3(3-0) P: TC 201 or CSE 231
Technologies and organizations that support data communications infrastructure. Case studies of businesses that develop the infrastructure.

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- 362 Web Administration**
Spring. 3(2-2) P: TC 331 RB: (TC 361 or concurrently) or (TC 349 or concurrently) R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Information and Communication Technology for Development Specialization.
Administration of Web servers and the services necessary to support modern information applications.
- 401 Topics in Media Impacts on Society**
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. P: TC 101 and Completion of Tier I Writing Requirement SA: TC 239, TC 339, TC 375
Cultural, technological, and design evolution of media. Current and historical genres, content, audience, and industries for media. Conventional and emerging theories of media processes and effects. Critical examination of empirical research concerning social impacts of media.
- 411 Collaborative Documentary Design and Production (W)**
Spring. 3(2-2) Interdepartmental with English and Journalism and Writing, Rhetoric and American Cultures. Administered by Telecommunication. P: Completion of Tier I Writing Requirement R: Open to students in the Documentary Studies Specialization.
Design and development of documentaries in a team setting using video and audio, still photography, web design, and print media. Participation in a production cycle including idea generation, research, design, production, and distribution.
- 435A Creating the Fiction Film I**
Fall. 3(2-2) Interdepartmental with English. Administered by English. P: ENG 335 R: Approval of department.
Creation of a short film, including scripting, conceptualization and planning, shooting, and rough editing.
- 435B Creating the Fiction Film II**
Spring. 3(2-2) Interdepartmental with English. Administered by English. P: ENG 435A
Finishing a short film, including fine editing, color correction, music composition, sound mixing, and Foley work. Developing web promotion, marketing strategies, and distribution.
- 442 Design of Cinema and Television Projects (W)**
Fall, Spring, Summer. 3(2-2) P: TC 341 and Completion of Tier I Writing Requirement R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Design and development of television and cinema projects in a team setting. Participation in a production cycle including planning, budgeting, design, proposal writing, production, testing, and evaluation. Issues of professionalism, ethics, and communication.
- 443 Audio Industry Design and Management (W)**
Fall, Spring. 3(2-2) P: TC 343 and Completion of Tier I Writing Requirement R: Open to students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization.
Advanced audio production specializing in multi-channel techniques. Industry focus on all aspects of the audio field.
- 444 Information Technology Project Management**
Spring. 3(3-0) Interdepartmental with Computer Science and Engineering and Information Technology Management. Administered by Information Technology Management. P: ITM 311 R: Open to students in the Information Technology Specialization.
Practical training and experiences in design, testing, and launch of new information technologies and systems.
- 445 Game Design and Development I**
Fall. 3(2-2) P: (TC 331 or CSE 331 or CSE 335 or STA 360) and Completion of Tier I Writing Requirement RB: TC 247 or TC 347 R: Open to students in the Design Specialization or in the Game Design and Development Specialization and open to graduate students in the Department of Telecommunication, Information Studies and Media.
Design, architecture, and creation concepts related to the development of interactive digital games.
- 447 Advanced Three-Dimensional Animation Workshop (W)**
Fall. 3(1-4) P: TC 347 and Completion of Tier I Writing Requirement RB: TC 337 R: Open to juniors or seniors or graduate students in the Department of Telecommunication, Information Studies and Media or in the Design Specialization or in the Game Design and Development Specialization or approval of department.
Design of advanced 3D computer graphic animation.
- 450 Human Computer Interaction and User Experience Design (W)**
Fall, Spring. 3(2-2) P: TC 331 and Completion of Tier I Writing Requirement R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media.
Development, formalization, and communication of information designs. Gathering and structuring information and requirements to meet technological, personal, and business communication goals. Systematic usability evaluation of information designs.
- 452 Media Strategy (W)**
Fall. 3(3-0) P: (TC 300 and TC 301) and Completion of Tier I Writing Requirement R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media.
Strategic options, with their attendant risks and opportunities, available to media firms in an industry that is being transformed by new information and communication technologies.
- 455 Game Design and Development II**
Spring. 3(2-2) P: TC 445 and Completion of Tier I Writing Requirement RB: TC 247 or TC 347 R: Open to students in the Design Specialization or in the Game Design and Development Specialization and open to graduate students in the Department of Telecommunication, Information Studies and Media.
Advanced design, architecture, and creation concepts related to the development of real-time interaction 3D design for gaming, simulation, and immersive virtual environments.
- 458 Project Management (W)**
Spring. 3(3-0) P: (TC 301) and completion of Tier I writing requirement R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media or in the Applied Engineering Sciences major.
Managing complicated and multidisciplinary projects. Organizing projects into manageable elements: scope, time, cost, quality, human resources, communication, risk, procurement, and integration. Communicate with stakeholders. Analyze organizations. Develop a budget. Identify roles and responsibilities during the critical planning, deployment, and evaluation stages.
- 462 Social Computing (W)**
Fall. 3(2-2) P: (TC 349 or TC 361) and Completion of Tier I Writing Requirement R: Open to juniors or seniors in the College of Engineering or in the Department of Telecommunication, Information Studies and Media or in the Information and Communication Technology for Development Specialization. SA: TC 462B
Social and technological perspectives on how people collaborate using information and communication technology. Experience with using multiple collaboration platforms and analysis of differences between enabling technologies.
- 472 Electronic Commerce (W)**
Spring. 3(2-2) P: (TC 349 or TC 361) and completion of Tier I writing requirement RB: TC 359 or concurrently R: Open to juniors or seniors in the Department of Telecommunication, Information Studies and Media. SA: TC 462C
Technologies, business models, and organizational and social implications of electronic commerce. Design of e-commerce sites.
- 480 Information and Communication Technologies for Development**
Fall. 3(3-0)
Role of information and communication technologies in facilitating social, political, economic, and environmental change in developing nations.
- 488 Information and Communication Technology Global Corps Field Study (W)**
Spring, Summer. 3 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: Completion of Tier I Writing Requirement RB: TC 361 R: Open to juniors or seniors in the College of Engineering or in the Department of Telecommunication, Information Studies and Media or in the Information and Communication Technology for Development Specialization.
Implementation of an information and communication technology project in a developing country, rural region of the U.S., or low-income urban area. Includes on-campus preparation followed by field work on location.
- 490 Independent Study**
Fall, Spring, Summer. 1 to 7 credits. A student may earn a maximum of 7 credits in all enrollments for this course. R: Open to undergraduate students in the Department of Telecommunication, Information Studies and Media. Approval of department; application required.
Directed study under faculty supervision.

- 491 Special Topics**
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. A student may earn a maximum of 16 credits TC191, TC291, TC391 and TC491.
Contemporary issues in media and communication technology.
- 493 Internship**
Fall, Spring, Summer. 1 to 7 credits. A student may earn a maximum of 7 credits in all enrollments for this course. RB: TC 101 and TC 201 and TC 301 R: Open to undergraduate students in the Department of Telecommunication, Information Studies and Media. Approval of department; application required.
Supervised professional experience in a media or information institution, business or facility.
- 497 Game Design Studio**
Fall. 3(1-4) P: TC 455 R: Open to students in the Game Design and Development Specialization and open to graduate students in the Department of Telecommunication, Information Studies and Media.
Conceptualization, design documentation, planning, prototyping, and distribution of games.
- 498 Collaborative Game Design (W)**
Spring. 3(2-2) P: (TC 445 and TC 455 and TC 497) and completion of Tier I writing requirement R: Open to students in the Game Design and Development Specialization.
Design and development of comprehensive digital games in a team setting working with a client. Participation in a design cycle including specification, design, prototyping, implementation, testing, and documentation. Issues of professionalism, ethics, and communication.
- 803 Introduction to Quantitative Research Methods**
Fall, Summer. 3(3-0) Interdepartmental with Advertising and Communication and Journalism. Administered by Communication. SA: ADV 875, COM 800, JRN 817, TC 802
Introduction to quantitative social science research methods and applied analyses for understanding research reports and developing graduate level research projects.
- 820 Theories of Media and Information**
Fall. 3(3-0) R: Open to master's students in the Department of Telecommunication, Information Studies and Media or approval of department. SA: TC 821
Classic and contemporary theories of communication with special emphasis on applications to telecommunication, extant and emerging media, and technology.
- 830 Foundations of Serious Games**
Spring. 3(3-0) R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Rationales, principles, processes, and pedagogies for serious game design. Applications of serious game genres and simulations. Funding and distribution.
- 831 Theories of Games and Interaction for Design**
Fall. 3(3-0) R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Theories of interaction in games and other mediated contexts including communication, learning, health, global and local development, and social justice to inform the design of social systems, games and other interactive media products.
- 839 Implementing Interactivity**
Fall. 3(2-2) R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Foundational visual design principles and theories for interactivity. Implementation of user interfaces. Current industry practices.
- 840 Interaction Design**
Spring. 3(2-2) P: TC 831 or concurrently RB: Basic familiarity with computers and Internet. R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Design of user interactions in information and media systems. Prototyping and presentation tools. Example topics include information architecture, task analysis, use cases, wireframes, scenarios
- 841 Understanding Users**
Fall. 3(3-0) RB: Direct experience with the creative process in interactive media R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Methods of user-centered media and interaction design. Iterative cycles of user and product conceptualization.
- 842 Design and Development of Media Projects**
Fall. 3(2-2) P: TC 840 and (TC 831 or TC 845 or TC 820) R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Team projects in Human Computer Interaction and Media and Information Management. Proposal development, team building, project management and workflow methods.
- 845 Human Computer Interaction**
Spring. 3(3-0) RB: TC 840 or concurrently R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Principles and theories of how humans and technical systems interact in traditional media, networked environments, social and mobile computing, virtual environments and information appliances.
- 850 Telecommunication and Information Policy**
Spring. 3(3-0) R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department. SA: TC 810
Analysis of major public and private telecommunication and information policies. Applying concepts and data from law, political science, economics, communication, technology and general social science.
- 851 Understanding Social Media**
Spring. 3(3-0) R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Overview of social media applications and services and their effects on individuals, organizations, and society.
- 852 Economic Structure of Telecommunication Industries**
Fall. 3(3-0) R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Economic aspects of telecommunication and information industries. Emphasis on market structure, conduct, performance. Content diversity, new technologies, recent regulatory policies, and antitrust.
- 853 Information Technology and Organizations**
Spring. 3(3-0) RB: Knowledge of communication industries and technologies that might be acquired either academically or through professional experience.
Develops basic perspectives for analyzing the impact of information technologies on organizational structures, the allocation and performance of tasks within organizations, organization members, and organizational strategies and effectiveness, and relationships among firms in a market economy.
- 854 Economics of Media Markets and Strategies**
Spring of odd years. 3(3-0) P: TC 852 RB: Intermediate microeconomics class.
Conceptual tools and analytical perspectives on economic forces and incentives underlying structure, conduct, and responses to new technologies in media markets.
- 861 Information Networks and Technologies**
Fall. 3(3-0) RB: Academic or professional background in telecommunication field.
Fundamental characteristics, components, standards and applications of information networks and services. Local and wide area network technologies, fundamentals of the Internet, and private network technologies and services from a management perspective.
- 862 Information Networks in Organizations and Commerce**
Spring. 3(2-2) P: TC 840 or TC 861 RB: Academic or professional background in telecommunication field. R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Design and management of electronic commerce strategies and the telecommunications infrastructure. Impact of information and communication technology on organizations and markets.
- 875 Information and Communication Technology for Development**
Spring. 3(3-0) R: Open to graduate students in the Department of Telecommunication, Information Studies and Media or approval of department.
Information and communication technology in developing areas, cases studies, implementation. International and domestic contexts.

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877 **Comparative and International Telecommunication**

Fall of even years. 3(3-0)

Comparison of various national approaches to broadcasting, cable, satellite and telephone systems. Policy, economic, institutional and content issues. Interactions and media flows among countries. International regulatory bodies.

890 **Independent Study**

Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media. Approval of department; application required.

Individualized study under faculty supervision.

891 **Special Topics in Telecommunication**

Fall, Spring. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Open only to graduate students in the College of Communication Arts and Sciences or approval of department.

Contemporary issues. Topics vary.

893 **Telecommunication Internship (N)**

Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.

Internships in information industries.

898 **Master's Project**

Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: TC 842 R: Open to master's students in the Department of Telecommunication, Information Studies and Media. Approval of department; application required. SA: TC 843

Plan B individual project demonstrating master's level professional competence.

899 **Master's Thesis Research**

Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in the Department of Telecommunication, Information Studies and Media.

Master's thesis research.

900 **Theory Building in Media and Information Studies**

Fall. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Advertising.

Concepts and issues relating explanation, scientific inquiry, theory building and applications to interdisciplinary studies in media and information.

912 **Information Technology Transactional Perspectives**

Spring of even years. 3(3-0) Interdepartmental with Information Technology Management. Administered by Information Technology Management. RB: Graduate level microeconomics course R: Open to doctoral students.

Multiple perspectives on relationships between organizations and information technology. Information processing, communications and management strategy approaches. Economic perspectives.

916 **Qualitative Research Methods**

Spring. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Journalism. R: Open only to doctoral students in the College of Communication Arts and Sciences or Department of Communication.

Qualitative research in mass and specialized communication systems. Topics include documentary, bibliographic, case study and participant observation methods.

921 **Media Theory**

Fall. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Advertising. R: Open only to doctoral students in College of Communication Arts and Sciences or the Department of Communication.

Process and effects of mediated communication. Audiences, socialization, and persuasion. Macrosocietal, and intercultural perspectives. Theory construction.

960 **Media and Technology**

Spring. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Telecommunication. R: Open only to doctoral students in the Communication Arts and Sciences-Media and Information Studies major or Communication major or approval of department.

Theoretical frameworks concerning media and communication processes, and their interactions with technology. Social, organizational, critical, and economic perspectives.

975 **Quantitative Research Design**

Fall. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Advertising. RB: One graduate-level research design or statistics course. R: Open only to doctoral students in the Media and Information Studies major.

Survey, experimental and content-analytic techniques applied to the study of media. Academic and applied research methods. Univariate and multivariate techniques.

985 **Advanced Quantitative Analysis for Media**

Spring. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Telecommunication. P: ADV 975 RB: Masters-level research course in addition to ADV 975.

Multivariate research methods for media and information studies research.