

**MEDIA AND INFORMATION**

**MI**

**Department of Media and Information  
College of Communication Arts and Sciences**

**101 Understanding Media and Information**  
Fall, Spring, Summer. 3(3-0) SA: TC 100, TC 110, TC 101

Critique and analysis of media including television, radio, film, handhelds, video games, social media and the Internet. Media history, effects and ethics. Technology, business and social developments affecting the media in the information society.

**220 Methods for Understanding Users**  
Fall, Spring. 3(3-0)

Basics of user research methods, such as interviews, surveys, content analysis, and focus groups. Methods to generate design ideas, solve design problems, and communicate the results.

**230 Game Design**  
Spring. 3(2-2) P: CAS 117 R: Open to students in the Department of Media and Information or in the Department of Computer Science and Engineering or in the Game Design and Development Minor or in the Information and Communication Technology for Development Minor. SA: TC 346, MI 346

Analyze, critique, and design of non-digital and digital games. Overview of game industry.

**239 Digital Footprints: Privacy and Online Behavior**  
Spring. 3(3-0) P: Completion of Tier I Writing Requirement R: Open to undergraduate students.

Exploration of digitization and capture of personal information. Issues of privacy, anonymity, and ownership. Technologies involved in capturing personal information.

**241 Filmmaking I**  
Fall, Spring, Summer. 3(2-2) P: CAS 112 R: Open to students in the Department of Media and Information. Not open to students with credit in CAS 201 or CAS 202.

Process of creating a film product. Basic camera operation, sound capture, the editing process and producing a final product.

**247 Three-Dimensional Graphics and Design**  
Fall, Spring, Summer. 3(2-2) P: (CAS 116) or (STA 110 and STA 113) or (CAS 205 or CAS 206 or CAS 207) R: Open to students in the Department of Media and Information or in the Game Design and Development Minor or in the Computer Science Major or in the Graphic Design Major or in the Bachelor of Fine Arts in Studio Art or in the Studio Art Major. SA: TC 247

Principles of 3D computer graphics applied in cinema, games, illustration, design and sculpture. Use of 3D software to create and manipulate synthetic objects, materials, lights, and cameras.

**250 Introduction to Applied Programming**  
Fall, Spring. 3(2-2)

Creation of software that responds to user input. Introduces variables, control structures, problem decomposition, finding and using existing libraries/APIs, producing user visible output, testing, creating documentation, and using version control.

**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 MI 291 and MI 491. SA: TC 291

Contemporary issues in media and communication technology.

**301 Bringing Media to Market**  
Spring, Summer. 3(3-0) P: (MI 201 or concurrently) or CAS 114 or BUS 190 SA: TC 356, TC 381, TC 301

Process of bringing media to market across multiple delivery platforms including broadcast, cable, satellite, Internet and mobile devices. Organization of creative industries, distribution methods, pricing and business models. Creation and repurposing of content. Practical and theoretical models of the behavior of media and information consumers.

**302 Networks, Markets and Society**  
Fall. 3(3-0) P: MI 201 or concurrently

Theories and methods for understanding dynamic systems in which information and communication technology (ICT) and society evolve interdependently over time. Explores how ICTs shape human experience, and how politics, commercial interests and culture shape how ICTs are designed.

**305 Media and Information Policy**  
Fall. 3(3-0) P: MI 201 or concurrently SA: TC 200, TC 210

National, international and local policies and private agreements governing traditional, new and emerging media, including radio, television, film, games, social media, mobile communications and the Internet.

**327 Advanced Concept Design for Games, Film, and TV**  
Spring. 3(2-2) P: MI 227 R: Open to students in the Department of Media and Information or in the Game Design and Development Minor or in the Fiction Filmmaking Minor.

Advanced topics in generating concept art and design for games, films, and animations.

**335 Film Directing**  
Fall. 3(3-1) Interdepartmental with Film Studies. Administered by Film Studies. P: (FLM 230 or concurrently) and (CAS 112 or concurrently) R: Open to undergraduate students in the Fiction Filmmaking Minor. SA: ENG 335

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, Spring. 3(2-2) P: ((CAS 112) and (CAS 111 or CAS 116)) or THR 219 or (CAS 201 and CAS 202) or (CAS 205 or CAS 206 or CAS 207) RB: MI 241 R: Open to students in the Department of Media and Information or in the Department of Theatre. SA: TC 437, TC 337

Conceptual and technical use of animation and compositing software for television, cinema, interactive media, and live performance.

**341 Filmmaking II**  
Fall, Spring, Summer. 3(2-2) P: MI 241 R: Open to students in the Department of Media and Information or in the Documentary Production Minor or in the Fiction Filmmaking Minor. SA: TC 341

Film style planning, techniques, and aesthetic principles for cinema and television production.

**342 Multi Camera Production for Television**  
Fall, Spring, Summer. 3(2-2) P: (MI 241) or (CAS 112 and CAS 201 and CAS 202) R: Open to students in the Department of Media and Information or in the Documentary Production Minor or in the Fiction Filmmaking Minor. SA: TC 342

Conceptualizing, designing, planning, producing, directing and evaluating multi-camera video programs.

**343 Audio Production**  
Fall, Spring, Summer. 3(2-2) P: (MI 241) or (CAS 112 and CAS 201 and CAS 202) R: Open to students in the Department of Media and Information or in the Documentary Production Minor or in the Fiction Filmmaking Minor. SA: TC 343

Basic audio production techniques. In-depth audio and radio industry analysis. Media writing.

**344 Sound Design for Cinema, Television, and Games**  
Spring, Summer. 3(2-2) P: (MI 241) or (CAS 112 and CAS 201 and CAS 202) RB: MI 343 R: Open to students in the Department of Media and Information or in the Documentary Production Minor or in the Fiction Filmmaking Minor.

Principles, technology, and techniques of sound design for media projects, including film, games, television, animation, and web.

**347 Advanced Three-Dimensional Computer Animation**  
Spring. 3(2-2) P: MI 247 R: Open to students in the Department of Media and Information or in the Game Design and Development Specialization. SA: TC 347

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.

## Media and Information—MI

- 349 Web Design and Development**  
Fall, Summer. 3(2-2) P: (MI 220 or MI 231 or CSE 231) or (CAS 204 and CAS 205) RB: MI 231 R: Open to students in the Department of Media and Information or in the Department of Computer Science and Engineering or in the Design Specialization or in the Information and Communication Technology for Development Minor. SA: TC 349  
Preproduction, design and development of web sites, services, and applications that employ primarily web browser technologies.
- 351 Producing For Cinema and Television**  
Spring. 3(3-0) P: (MI 241) or (CAS 112 and CAS 201 and CAS 202) R: Open to students in the Department of Media and Information or in the Documentary Production Minor or in the Fiction Filmmaking Minor. SA: TC 351  
Conceptualizing, designing, planning, and developing projects for cinema and television.
- 355 Media and Information Research**  
Spring. 3(3-0) RB: Completion of University Math Requirement SA: ADV 340, ADV 355, TC 376, TC 355  
Applied media and information research methods, practices, techniques and ethics. Data analytics, visualization and online research methods.
- 360 Media and Information Management**  
Fall. 3(3-0) P: MI 201 or concurrently RB: Completion of Tier I Writing Requirement  
Basic principles of managing and financing media and information companies, media projects, and information applications.
- 361 IT Network Management and Security**  
Spring. 3(3-0) P: MI 201 or CSE 231 RB: MI 360 SA: TC 361  
Structure, design, and management of data networks with a focus on business settings. Examination of information technology security issues specifically in the context of data networks and new, digital media and ITs.
- 377 Advanced 3D Modeling**  
Fall. 3(2-2) P: MI 247 R: Open to students in the Department of Media and Information.  
Learn advanced techniques in 3D modeling and texturing for games, movies, television, and motion graphics.
- 411 Collaborative Documentary Design and Production (W)**  
Spring. 3(2-2) Interdepartmental with Film Studies and Journalism and Writing, Rhetoric and American Cultures. Administered by Media and Information. P: Completion of Tier I Writing Requirement R: Open to students in the Documentary Production Minor. SA: TC 411  
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.
- 419 Projection Design for Live Performance**  
Spring. 3(2-2) A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Theatre. Administered by Theatre. P: (THR 219) or (THR 337 or MI 337 or MI 341) RB: THR 211 or THR 211L or THR 212 or THR 212L or THR 214 or THR 214L or THR 216 or THR 216L  
Creating projection performance media through script, technology advancements, and production analysis. Practical application through digital rendering, video production and software exploration.
- 431 Advanced Game Development**  
Fall. 3(2-2) P: MI 231 or CSE 232 R: Open to students in the Department of Media and Information or in the Department of Computer Science and Engineering or in the Game Design and Development Minor. SA: MI 333  
Advanced concepts in planning, implementing, and troubleshooting applications and interfaces for games and interactive media.
- 435A Creating the Fiction Film I**  
Fall. 3(3-1) Interdepartmental with Film Studies. Administered by Film Studies. P: FLM 335 R: Open to undergraduate students in the Fiction Filmmaking Minor or approval of department. SA: ENG 435A  
Creation of a short film, including scripting, conceptualization and planning, shooting, and rough editing.
- 435B Creating the Fiction Film II (W)**  
Spring. 3(3-1) Interdepartmental with Film Studies. Administered by Film Studies. P: (FLM 435A or approval of department) and Completion of Tier I Writing Requirement R: Open to undergraduate students in the Fiction Filmmaking Minor or approval of department. SA: ENG 435B  
Finishing a short film, including fine editing, color correction, sound design, and foley work. Developing web promotion, marketing strategies, and distribution.
- 440 Advanced Video Editing**  
Spring. 3(2-2) P: MI 341 R: Open to students in the Department of Media and Information or in the Documentary Production Minor or in the Fiction Filmmaking Minor. SA: MI 352  
Advanced principles, technology and techniques of video editing.
- 441 Advanced Lighting and Camera Techniques**  
Fall, Spring. 3(1-4) P: MI 341 R: Open to students in the Department of Media and Information or in the Documentary Production Minor or in the Fiction Filmmaking Minor. SA: TC 348, MI 348  
Advanced techniques for manipulation of light and image characteristics in film and television settings.
- 442 Design of Cinema and Television Projects (W)**  
Fall, Spring, Summer. 3(2-2) P: (MI 341) and Completion of Tier I Writing Requirement R: Open to juniors or seniors or graduate students in the Department of Media and Information or in the Documentary Production Minor or in the Fiction Filmmaking Minor. SA: TC 442  
Develop TV, video and film projects in a group setting. Practice a full production cycle including idea development, budgeting, pitching, teaser, trailer, production, postproduction, distribution and evaluation. Production case studies, advertising, ethics and worldwide media and job trends.
- 443 Audio Industry Design and Management (W)**  
Fall, Spring, Summer. 3(2-2) P: (MI 343) and Completion of Tier I Writing Requirement R: Open to juniors or seniors or graduate students in the Department of Media and Information. SA: TC 443  
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 Minor.  
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: MI 231 or CSE 331 or CSE 335 or STA 360 RB: TC 247 or TC 347 R: Open to students in the Game Design and Development Minor and open to graduate students in the Department of Media and Information. SA: TC 445  
Design, architecture, and creation concepts related to the development of interactive digital games.
- 447 Graphics and Animation Portfolio (W)**  
Fall. 3(2-2) P: (MI 327 or MI 347 or MI 377) and Completion of Tier I Writing Requirement RB: MI 337 R: Open to seniors or graduate students in the Department of Media and Information. SA: TC 447  
Development of a portfolio of advanced three-dimensional models, animation, concept design, and technical art to focus skills on a specific profession or industry.
- 449 Advanced Web Development and Database Management**  
Spring. 3(2-2) P: MI 349 R: Open to students in the Department of Media and Information or in the Department of Computer Science and Engineering. SA: TC 449, TC 359, MI 359  
Learn and apply server-side web technologies and database integration with client-side web technologies, to design, development, and deploy modern web sites, services, and applications.

- 450 Creating Human-Centered Technology (W)**  
 Fall, Spring. 3(2-2) P: (MI 320 and MI 350 and MI 420 or approval of department) and Completion of Tier I Writing Requirement SA: TC 450  
 Entire human-centered design process, including assessing needs, forming ideas, designing a solution, building prototypes, evaluating the effectiveness of those solutions, and iterating to improve the solutions. Creation of a portfolio piece to illustrate capabilities.
- 452 Media Entrepreneurship and Business Strategies**  
 Fall. 3(3-0) P: (MI 301) and completion of Tier I writing requirement SA: TC 452  
 Entrepreneurship and business strategy options, with their attendant risks and opportunities, available to media firms in an industry that is being dynamically transformed by new information and communication technologies.
- 455 Game Design and Development II**  
 Spring. 3(2-2) P: MI 445 R: Open to students in the Game Design and Development Minor and open to graduate students in the Department of Media and Information. SA: TC 455  
 Advanced design, architecture, and creation concepts related to the development of real-time interaction 3D design for gaming, simulation, and immersive virtual environments.
- 462 Social Media and Social Computing**  
 Fall. 3(2-2) P: (MI 349 or MI 361 or approval of department) and Completion of Tier I Writing Requirement R: Open to juniors or seniors or graduate students. SA: TC 462B, TC 462  
 Social and technological perspectives on how people collaborate using social media and other information and communication technologies. Experience with using multiple collaboration platforms and analysis of differences between enabling technologies.
- 472 Digital Business and Commerce**  
 Spring. 3(2-2) P: ((MI 349 or MI 361) or approval of department) and completion of Tier I writing requirement R: Open to juniors or seniors or graduate students. SA: TC 462C, TC 472  
 Technologies, business models, and organizational and social implications of electronic commerce. Strategies for designing, managing and marketing in digital commerce contexts.
- 480 Information and Communication Technologies and Development**  
 Fall. 3(3-0) Interdepartmental with Engineering. Administered by Media and Information. P: Completion of Tier I Writing Requirement SA: TC 480  
 Role of information and communications technologies (ICT) in low income countries and in disadvantaged areas in middle and high income countries. Theories and case studies that link ICT and social, political, economic and environmental change.
- 488 Information and Communication Technology Development Project (W)**  
 Spring, Summer. 3 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Engineering. Administered by Media and Information. P: Completion of Tier I Writing Requirement RB: MI 480 SA: TC 488  
 Challenges and opportunities of implementing an information and communication technology in a developing country or underprivileged region of the United States. Hands-on experience conducting 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 Media and Information. Approval of department; application required. SA: TC 490  
 Directed study under faculty supervision.
- 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: MI 101 and MI 201 and MI 301 R: Open to undergraduate students in the Department of Media and Information. Approval of department; application required. SA: TC 493  
 Supervised professional experience in a media or information institution, business or facility.
- 497 Game Design Studio**  
 Fall. 3(1-4) P: MI 455 R: Open to students in the Game Design and Development Specialization and open to graduate students in the Department of Media and Information. SA: TC 497  
 Conceptualization, design documentation, planning, prototyping, and distribution of games.
- 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 graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 820  
 Classic and contemporary theories of communication and information with special emphases on applications to current and emerging media, and information and communication technologies viewed from a socio-technical perspective.
- 830 Foundations of Serious Games**  
 Spring. 3(3-0) R: Open to students in the Media and Information Major or in the Serious Game Design and Research Certificate or in the Educational Technology Major or in the Educational Technology Graduate Certificate or approval of department. SA: TC 830  
 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 Design**  
 Fall. 3(3-0) R: Open to students in the Media and Information Major or in the Serious Game Design and Research Certificate or in the Educational Technology Major or in the Educational Technology Graduate Certificate or approval of department. SA: TC 831  
 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 Game and Film Design Studio I**  
 Fall. 3(3-0) R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 839  
 Design principles for the creation of transmedia (games, film, websites, etc.). Design and development studio course focused on the creation of fictional storytelling projects across media projects.
- 841 Understanding Users**  
 Fall. 3(3-0) RB: Direct experience with the creative process in interactive media. R: Open to students in the College of Communication Arts and Sciences or in the Media and Information Major or in the Serious Game Design and Research Certificate or in the Educational Technology Major or in the Educational Technology Graduate Certificate or approval of department. SA: TC 841  
 Methods of user-centered research to support game, media and interaction design. Iterative cycles of user and product conceptualization.
- 844 Interaction Design**  
 Spring. 3(3-0) RB: MI 841 R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 844  
 Design of user interactions in information and media systems. Prototyping and presentation tools. Example topics include information architecture, task analysis, use cases, wire frames, scenarios.
- 845 Interactive Usability and Accessibility: Design and Evaluation**  
 Spring. 3(3-0) RB: MI 844 R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 845  
 Principles and theories of usability and accessibility in interactive media, social and mobile computing, virtual environments and information appliances. Approaches to design and evaluation.

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- 846 Game and Film Design Studio II**  
Spring. 3(3-0) RB: MI 839 R: Open to graduate students in the College of Communication Arts and Sciences or approval of department.  
Design principles for the creation of transmedia (games, film, websites, etc.). Design and development studio course focused on the creation of fictional storytelling projects across media projects.
- 850 Media and Information Policy**  
Spring. 3(3-0) R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 810, TC 850  
Discusses major public and private media and information policies, including Internet governance, and their relevance and implications for businesses, professionals in the field, and users of advanced communications. Applies concepts and data from media and information studies, management, technology, law, and political science.
- 851 Understanding and Managing Social Media**  
Spring. 3(3-0) R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 851  
Overview of social media applications and services, social media history, social media affordances, effects on individuals, organizations, and society, and best practices for the management and study of social media.
- 852 Media and Information Economics**  
Fall. 3(3-0) R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 852  
Economic dynamics of the digital economy and its implications for businesses and managers. Emphasis on traditional and new media industries, including Internet-based media, mobile communications, social media, and information industries.
- 861 Media and Information Technologies in Organizations**  
Fall. 3(3-0) R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 861  
Applications of media and information technologies in business settings. Implications for management of information technologies derived from an examination of effects of media and information technologies from a socio-technical perspective.
- 862 Managing Digital Enterprises**  
Spring. 3(3-0) RB: MI 861 R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 862  
History and current status of e-commerce, e-commerce strategies and approaches, and new directions in e-commerce. Challenges of developing and marketing an online commerce site.
- 875 Information and Communication Technology and Development**  
Spring. 3(3-0) R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 875  
Information and communication technology in developing areas, cases studies, design and implementation, and critical evaluation of the role of ICTs in development.
- 877 Global Media and Communications**  
Fall of even years. 3(3-0) R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 877  
Comparative and international perspectives on approaches to traditional and new media and their transformations by increased global connectivity. Addresses broadcasting, cable TV, satellite, fixed networks, mobile communications, and the Internet. Political economy of media, economic, institutional and content issues. Interactions and media flows among countries. International governance 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 to graduate students in the Department of Media and Information. Approval of department; application required. SA: TC 890  
Individualized study under faculty supervision.
- 891 Special Topics in Media and Information**  
Fall, Spring. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 891  
Contemporary topics; varied.
- 893 Media and Information Internship**  
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. SA: TC 893  
Internships in media and 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. R: Open to master's students in the Department of Media and Information. Approval of department; application required. SA: TC 843, TC 898  
Plan B individual project or poster 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 to graduate students in the Department of Media and Information. Approval of department; application required. SA: TC 899  
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 to doctoral students in the College of Communication Arts and Sciences.  
Qualitative research in mass and specialized communication systems. Topics include documentary, bibliographic, case study and participant observation methods.
- 921 Theories of Media and Information**  
Fall. 3(3-0) Interdepartmental with Advertising and Communication Arts and Sciences and Journalism. Administered by Communication Arts and Sciences. R: Open to doctoral students in the College of Communication Arts and Sciences or approval of college. SA: ADV 921  
Overview of the relations between information theory, communication theory, and media theory, and an understanding of how these theories have evolved over time and which competing approaches coexist.
- 960 Media and Technology**  
Spring. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Media and Information. R: Open to doctoral students in the Communication Major or in the Media and Information Studies Major or approval of department. SA: TC 960  
Theoretical frameworks concerning media and communication processes, and their interactions with technology. Social, organizational, critical, and economic perspectives.
- 975 Introductory Methods**  
Fall. 3(3-0) Interdepartmental with Advertising and Communication Arts and Sciences and Journalism. Administered by Communication Arts and Sciences. RB: One graduate-level research design or statistics course. R: Open to doctoral students.  
A survey of qualitative and quantitative research design including validity and reliability, hypothesis formation, sampling, ethics, survey, experimental, ethnographic, observational and mixed methods.
- 985 Advanced Quantitative Analysis for Media**  
Spring. 3(3-0) Interdepartmental with Advertising and Journalism. Administered by Media and Information. P: ADV 975 RB: Masters-level research course in addition to ADV 975.  
Multivariate research methods for media and information studies research.

**990 Independent Study**  
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. Interdepartmental with Advertising and Communication Arts and Sciences and Journalism. Administered by Communication Arts and Sciences. R: Open to doctoral students in the College of Communication Arts and Sciences or approval of college.  
Independent research under faculty direction.

**991 Ways of Knowing**  
Fall, Spring. 3(3-0) Interdepartmental with Advertising and Communication Arts and Sciences and Journalism. Administered by Communication Arts and Sciences. R: Open to doctoral students in the College of Communication Arts and Sciences or approval of college.  
Ways humans acquire, convey, organize and shape knowledge and information, and are shaped and influenced by it. Neurological, psychological linguistic, philosophical, cultural, and logical dimensions of human knowledge.

**992 Doctoral Seminar**  
Fall, Spring. 3(3-0) A student may earn a maximum of 15 credits in all enrollments for this course. Interdepartmental with Advertising and Communication Arts and Sciences and Journalism. Administered by Communication Arts and Sciences. R: Open to doctoral students in the College of Communication Arts and Sciences or approval of college.  
Topics on theoretical and research issues in communication and mass media.

**993 Research Practicum in Information and Media**  
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. Interdepartmental with Advertising and Communication Arts and Sciences and Journalism. Administered by Communication Arts and Sciences. R: Open to doctoral students in the College of Communication Arts and Sciences or approval of college.  
Directed research collaboration with a faculty member or a team of students/faculty.