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.

310 Concepts and Techniques for Directing in Styles Most Associated with the Art of Film
Fall, Spring, Summer. 3(3-0) R: Open to students in the Department of Media and Information or in the Fiction Filmmaking Minor. SA: TC 346
Analyze, critique, and design of non-digital and digital games. Overview of game industry.

320 Computer Animation
Fall, Spring, Summer. 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

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

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) R: MI 241 R: Open to students in the Department of Media and Information or in the Department of Theatre. SA: TC 437, TC 337

Not open to students with credit in THR 337.

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) R: 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) R: 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
Preparation, 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 216L 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. Develop 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 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.
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 the effectiveness of those solutions, and iterating to improve their application.

**Requirement SA: TC 450**
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

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.

**Requirement SA: TC 452**
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.

**Game and Design 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 interactive 3D design for gaming, simulation, and immersive virtual environments.

**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.

**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.

**Information and Communication Technology 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.

**Information and Communication Technology Development Project**
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.

**Game Design Studio**
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.

**Game Design Studio**
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.

**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.

**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.

**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 emphasis on applications to current and emerging media, and information and communication technologies viewed from a socio-technical perspective.

**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.

**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.

**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.

**Understanding Users**
Fall. 3(3-0) R: 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.

**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, wireframes, scenarios.

**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.
Media and Information—MI

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. Emphasizes 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 Information Technology. 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 formulation, sampling, ethics, survey, experimental, ethnographic, observational and mixed methods.

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 Communication Arts and Sciences and Journalism. Administered by Advertising and Information Technology. 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 formulation, sampling, ethics, survey, experimental, ethnographic, observational and mixed methods.

985 Advanced Quantitative Analysis for Media
Spring. 3(3-0) Interdepartmental with Advertising and Communication Arts and Sciences 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.
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.

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.

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.

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.