Arts Technology Communication and Media

**ATCM 1100** First Year Seminar (1 semester credit hour) This course will introduce incoming freshmen to the intellectual and cultural environment of the School of Arts, Technology, and Emerging Communication. Students will learn about plans of study, career paths, research, and the connections to other fields and disciplines. Required for all freshmen in the School of Arts, Technology, and Emerging Communication; open to all non-ATEC majors. Corequisite: **UNIV 10 10**. (1-1) Y

**ATCM 2300** Introduction to TechnoCulture (3 semester credit hours) In this foundational course students consider the complex relationship between technology and culture. They will study evocative objects to raise questions about the history, impact, and implications of the co-evolution of technology and society. (3-0) S

**ATCM 2301** Computer Imaging (3 semester credit hours) Introduction to digital image-making and manipulation using contemporary software applications. Graphic, photographic, and computational tools and methods are presented and applied to art and design problems. Computer images are prepared for multiple delivery environments, including the Internet, games, animation, and others. (0-3) S

**ATCM 2302** Design I (3 semester credit hours) Provides foundational knowledge of visual structure and problem solving in two- and three-dimensional design. Students will be introduced to design methodology and design processes with emphasis on the formal principles of composition and organization. (0-3) S

**ATCM 2303** Project Management for Arts, Technology, and Emerging Communication I (3 semester credit hours) Introduction to project management and professional practice. Course examines various aspects of project management in the digital age, including team building, group dynamics, communication, collaborative practice, pipeline development, and presentation. (0-3) S

**ATCM 2304** Exploration of Arts, Technology, and Emerging Communication (3 semester credit hours) This course is geared towards incoming Arts, Technology, and Emerging Communication students and will review and examine the major areas of concentration available within the major. Upon completion, students will better understand the various areas of study ATEC offers. (3-0) R

**ATCM 2305** Computer Animation Processes (3 semester credit hours) This course is geared towards incoming Arts, Technology, and Emerging Communication (ATEC) students and will examine the major areas of an animation production pipeline, including pre-production, production, and post-production. This course includes discussion of all areas of computer animation including digital modeling, texturing, rigging, animation, and lighting. Upon completion, students will better understand the animation options ATEC offers and how best to plan their remaining semesters. (3-0) Y

**ATCM 2310** Animation and Game Fundamentals (3 semester credit hours) This course will provide students a foundation in the practices and methods of computer animation and games. Students will gain exposure to the various areas of production pipelines through lectures supported by hands-on lab sessions. Topics may include the state of the industry, non-traditional applications, basic project management, and future directions. (3-0) S

**ATCM 2320** Critical Media Research Foundations (3 semester credit hours) This course focuses on scholarly research and writing. Students will practice critical media analysis supported by close reading; learn how to identify and incorporate appropriate secondary sources; and learn to build arguments through thesis-driven writing. While a number of media will be examined in

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the course, the chief emphasis will be on developing media literacy in support of research and writing rather than on the particular details of any one medium. Prerequisite or Corequisite: RHET 1302. (3-0) Y

ATCM 2321 Reading Media Critically (3 semester credit hours) This writing-intensive course teaches students how to apply the foundational concepts and approaches of multiple schools of critical theory to film, television, and other popular culture texts. Prerequisite: RHET 1302. (3-0) S

ATCM 2322 Media Histories (3 semester credit hours) This course examines the histories of emerging media by foregrounding the relationship between new media technologies and cultural, social, political, and economic transformations. Possible topics include the shift from orality to writing, the social impacts of the printing press, the rise of broadcast media, and the development of the Internet. Prerequisite: RHET 1302. (3-0) Y

ATCM 2335 Internet Studio I (3 semester credit hours) This course presents core web technologies and the process of website development. Topics explored include but are not limited to prototyping and design, development, information architecture and website launch. Prerequisite: ATCM 2301. (0-3) S

ATCM 2340 Visual Communication (3 semester credit hours) This course explores the idea that memorable visual messages have great power to inform, educate, and persuade an individual, a culture, and a society. Topics covered may include theories of visual communication, graphic design, and data visualization. Students enrolled in this course will both analyze and create visual communication messages. (3-0) Y

ATCM 2345 Principles of Digital Audio (3 semester credit hours) Introduction to sound design to show and explain the role of sound in single or multiple aspects of the field, including multimedia productions, animation, video games, movies, and live performances. (0-3) S

ATCM 2355 Survey of Digital Fabrication (3 semester credit hours) This course is designed to provide students with a broad overview of and introduction to digital fabrication processes. In this course, a combination of lectures and hands-on activities are used to expose students to the hardware and software tools associated with digital fabrication processes. (0-3) Y

ATCM 2365 Game Design Fundamentals (3 semester credit hours) Introductory survey of game design, development, production, and studies, intended for incoming students in Arts, Technology, and Emerging Communication. This course covers aspects of all areas of game design and development, including game systems and level design, art and animation, programming, sound design, narrative, and game production management. The course also serves as an introduction to play and game studies, academic writing, critical analysis, and games research. Upon completion, students will better understand their options in the games pathway in ATEC, as well as how best to plan their remaining semesters. (3-0) S

ATCM 2380 Introduction to Emerging Communication (3 semester credit hours) This course introduces students to theoretical models and research methods used to study communication and media with specific focus on mass media processes and effects. (3-0) R

ATCM 3300 Code Plus Culture (3 semester credit hours) At the intersection of theory and practice, in this course students will consider how code affects culture and how culture informs code. Topics may include: the ideology of programming languages; how social, national, gendered, and racial formations are reflected in coding culture; political philosophies of free/open-source/proprietary software; the sociality of coding platforms; the semiotic, cultural, and legal implications of hacking and remixing; maker culture and code; or code as discourse. This course includes the study of code in theory and operation. Prerequisite: ATCM 2300. (3-0) R

ATCM 3301 Digital Content Design (3 semester credit hours) This writing-intensive course blends theory and practice to increase the effectiveness of text prepared for digital media. Students will design, compose, and evaluate information to improve audiences' utility and satisfaction. Topics include the organization, logical development, structuring, and ethical
presentation of information. Prerequisite: RHET 1302. (3-0) S

**ATCM 3303** Project Management for Arts, Technology, and Emerging Communication II (3 semester credit hours) Continuing study in project management, team management, and production. Topics include business and marketing planning, presentation strategies, and advanced methods for team building and communication. Prerequisite: ATCM 2303. (0-3) R

**ATCM 3304** Character Design (3 semester credit hours) Exploration of character design as a fundamental aspect of storytelling, and as the lens through which theories, principles, and practices of narrative across media can be understood. Students in the course will examine character design for games, animation, and other visual and interactive media. Prerequisite: ATCM 2305 or ATCM 2365. (0-3) R

**ATCM 3305** Computer Animation I (3 semester credit hours) This course presents the concepts, tools and techniques used in 3D key frame animation. Topics will include squash and stretch, anticipation, overlapping motion and timing. Students will learn to animate using per-existing rigs and set-ups. Prerequisite: ATCM 2305 or ATCM 2365. (0-3) S

**ATCM 3306** Modeling and Texturing I (3 semester credit hours) This course presents basic concepts and fundamentals of computer modeling and texture creation. The principles and techniques covered are universal and can be applied to animation and gaming, as well as other visualization areas. This course does not require any previous 3D animation experience and will assume all students are new to 3D modeling and texturing, and industry professional software. Prerequisite: ATCM 2305 or ATCM 2365. (0-3) S

**ATCM 3307** Lighting and Composition I (3 semester credit hours) This course presents basic concepts and fundamentals of digital lighting and basic composition. The principles and techniques covered are universal and can be applied to both animation and gaming, as well as other visualization areas. This course does not require previous 3D animation experience and will assume all students are new to 3D lighting and industry professional software.

**ATCM 3308** Rigging I (3 semester credit hours) This course presents the concepts, tools, and techniques used in 3D animation for setting up clean and efficient 3D rigs that are easily able to be animated. Topics will include hierarchical structures, joints and bones, constraints, creating useful and predictable deformations, and setting up simple and intuitive control structures for use in animation. Introductory animation techniques will also be covered. Prerequisite: ATCM 2305 or ATCM 2365. (0-3) S

**ATCM 3309** Pre-Production Design I (3 semester credit hours) This course focuses on techniques used to develop ideas into viable animation concepts. Students will learn methods to break down ideas, write log lines and treatments, create concept art, and produce storyboards and story reels. Prerequisite: ATCM 2305 or ATCM 2365 and department consent required. (0-3) Y

**ATCM 3310** Procedural Animation (3 semester credit hours) This course introduces fundamentals of 3D computer graphics and animation through procedural methods. Prerequisites or Corequisites: ATCM 2305 and CS 1335 or instructor consent required. (0-3) Y

**ATCM 3311** Tools Development for Arts, Technology, and Emerging Communication (3 semester credit hours) Exploration of processes and practices in tools, engine, and pipeline development for games, animation, and other digital media. Prerequisite: CS 2335. (0-3) S

**ATCM 3312** Surfacing and Shading I (3 semester credit hours) This course introduces advanced techniques for surfacing and materials creation used in both film and games. Specific techniques may include UVing, procedural shaders, and look development using image editing and animation software. Students will also gain experience developing shaders inside a game engine. Prerequisites: ATCM 3306 or ATCM 3370 and department consent required. (0-3) R

**ATCM 3320** Critical Media Theories (3 semester credit hours) This course examines the development of theories of digital media, with an emphasis on understanding the role of the
Internet in contemporary life. Prerequisite or Corequisite: ATCM 2321. (3-0) Y

ATCM 3321 Networked Identities (3 semester credit hours) This course considers digital media and identities, with a focus on gender, sexuality, race, ethnicity, disability, class, age, and/or nationality. Topics will include how such identities are represented in media and how people use media to reshape such representations. Prerequisite: ATCM 2321 or ATCM 2322 (3-0) Y

ATCM 3323 Reading in a Networked Era (3 semester credit hours) This course examines literature's transformation in the era of electronic networks. Topics may include the history of writing and technology; how new reading practices, distribution channels, and publication industry developments influence literature; emerging literary and popular genres; participatory publics, remix cultures, and virality; literature's position within a media ecology of digital games, film, and television. Prerequisite: RHET 1302. (3-0) T

ATCM 3325 Global Media Cultures (3 semester credit hours) This course examines the production, circulation, and consumption of media in a global context. Topics may include media produced outside the United States, the effect of globalization on media, and the media of diasporic communities. Prerequisite: RHET 1302. (3-0) Y

ATCM 3330 Digital Art and Social Practice (3 semester credit hours) The course introduces students to digital media arts production informed by social engagement. A project-intensive practice will explore art as experience, performance, and pedagogy. Prerequisites: ATCM 2335 or Instructor consent required. (0-3) S

ATCM 3331 Critical Making (3 semester credit hours) This course situates technological practices of Do It Yourself and communal making as a social phenomenon with a history that precedes the digital. Students will learn about connections to women's domestic work; suburban hobbyist practices; the craft labor of indigenous cultures; and so forth. The class also includes the study of theories of critical design and making, with opportunities to practice these approaches in coursework. Prerequisites: ATCM 2300 and ATCM 2365. (3-0) T

ATCM 3335 Internet Studio II (3 semester credit hours) Explores advanced methods and techniques related to web design and production. Students will explore and implement a range of new web technologies and how to best serve user needs with these new interactions. Prerequisite: ATCM 2335. (0-3) Y

ATCM 3336 Design Research Methods (3 semester credit hours) This course will explore a variety of behavioral and attitudinal design research methods, including the planning, analysis, and execution of quantitative and qualitative methods. Topics also include the ethical concerns related to understanding users and how to communicate research results. (3-0) T

ATCM 3337 Interaction Design I (3 semester credit hours) Study of human-machine interaction for a variety of applications. Students explore rapid prototyping, user interface (UI) and user experience (UX) design skills that can be applied to various domains such as web-based publishing, mobile app development, game development, and entertainment and artistic performances. New devices and interactions are explored. Prerequisite or Corequisite: ATCM 2335. (0-3) Y

ATCM 3338 Motion Graphics I (3 semester credit hours) This course is an introduction to the concepts, tools, and techniques used in graphic design to enhance a communicated message through animation. Students will work with image, text, audio, and movement to create dynamic visual communication pieces. Prerequisite: ATCM 2301. (0-3) S

ATCM 3340 Design II (3 semester credit hours) Continuing exploration of design principles and practices, with an emphasis on three-dimensional design, time and motion, human perception, and critique. Prerequisite: ATCM 2302. (0-3) Y

ATCM 3345 Audio Technologies (3 semester credit hours) This class presents and explains the principles of audio and digital audio technologies. The course lays out the fundamentals of audio and computer equipment and technologies: microphones, loudspeakers, mixing boards, digital converters, digital audio formats, digital processors, audio compression, amplification,
stereophonic, surround and multi-phonic diffusion. Prerequisite: ATCM 2345. (0-3) R

ATCM 3346 Audio Productions Lab I (3 semester credit hours) This course explores the psychological implications as well as the artistic, cultural and social dimensions of the use of audio in films, games, and various other applications. Topics include recording, editing, processing and diffusing recorded material. Students will learn how to select a voice, an instrument, and/or a sound effect for auditory presentations and direct recording sessions. May be repeated for credit as projects vary (6 semester credit hours maximum). Prerequisite: A

ATCM 3350 Digital Video Production I (3 semester credit hours) Introduction to digital video production examining shooting, editing, and nonlinear post-production techniques. Students will work individually and in teams to produce short video projects. A variety of delivery environments may be explored, including web, mobile, and DVD. Prerequisite: ATCM 2302. (0-3) S

ATCM 3355 Computer Modeling for Digital Fabrication (3 semester credit hours) This course is designed to provide students with a broad overview of computer modeling techniques associated with fabrication processes. In this course students will learn to apply 3D modeling software, rendering programs, image processing software, and vector based graphics to digital fabrication processes. Emphasis will be placed on proper file preparation for output devices. Prerequisite: ATCM 2345 or ATCM 2301 or ATCM 3306 or instructor consent required. (0-3) T

ATCM 3356 Projection Mapping Lab (3 semester credit hours) This course explores the activation of form and space with moving images. Students will learn to animate static objects through projection mapping techniques, including the workflows needed to create dynamic objects and immersive environments. Emphasis will be placed on applications and workflows that combine animation and sculptural expression. Prerequisite: ATCM 2302 or ATCM 2345 or ATCM 3306 or ATCM 3355 or instructor consent required. (0-3) R

ATCM 3357 Digital Fabrication Lab I (3 semester credit hours) This course explores the relationship between digital fabrication and traditional artistic practice. Students use digital fabrication tools as a means of exploring their own creative ideas. In this course students will apply techniques and processes to create work that reflects their own creative vision. Emphasis will be placed on the conceptual underpinning of their ideas and the processes and techniques used to execute them. Registration for this course will be based on the faculty's review of the student's portfolio. Prerequisites: (ATCM 2355 or ATCM 3355) and instructor consent required. (0-3) T

ATCM 3365 Game Design I (3 semester credit hours) This course presents principles and techniques of interactive game design, including but not limited to game mechanics, player dynamics, social and multiplayer structures, statistics and game theory, and systems analysis. Students will work individually and in teams to create original interactive games as well as learn fundamentals of focus testing, usability testing, and critique. Course focuses on both analog and digital games. Prerequisite: ATCM 2365. (0-3) Y

ATCM 3366 Game Studies I (3 semester credit hours) Introduction to critical game studies, including analysis of digital and analog games as cultural artifacts, material technologies, and social practices. This course presents the fundamentals of academic writing and research practices in game studies. Prerequisite: ATCM 2365. (0-3) Y

ATCM 3367 Level Design I (3 semester credit hours) This course focuses on methods and techniques in level design for interactive games, including paper design, white boxing, flow, pacing and challenge balancing, user feedback, and event scripting. Prerequisite: ATCM 2305 or ATCM 2365. (0-3) Y

ATCM 3368 Scripting for Games I (3 semester credit hours) This course explores concepts and best practices of scripting and programming for digital game development. Students will utilize scripting to create basic mechanics, complex game systems, and scripted scenarios. Students
will learn proper syntax and code structure as well as how to manipulate objects during runtime. Prerequisite: ATCM 2305 or ATCM 2365 or Instructor consent required. (0-3) Y

ATCM 3369 Games and Narrative I (3 semester credit hours) This course explores the unique challenges of storytelling in games through practical techniques for narrative creation. Students in this course will analyze game design principles, storytelling structures across media, and traditional writing processes to improve their understanding of narrative structures for games. Course covers both experimental and traditional interactive forms. Prerequisite: ATCM 3365. (3-0) Y

ATCM 3370 Virtual Environments I (3 semester credit hours) This course explores methods and techniques used in the design, development, and implementation of virtual environments for use in real-time experiences and simulations. Topics include aesthetics, architecture, and deployment, which can utilize a wide variety of applications. Prerequisite: ATCM 3306. (0-3) Y

ATCM 3371 User Experience Design for Games (3 semester credit hours) Exploration of user experience design principles as they relate to digital game development. This research-based course focuses on how gameplay and interaction can be effectively communicated to players through user interface design. Prerequisite: ATCM 2365. (0-3) T

ATCM 3372 Sound Design for Games (3 semester credit hours) Exploration of sound design principles, soundscapes, voice acting, and music as they relate to digital game development. Students in the course will examine key concepts of sound design for games within the constraints of interactive media, gameplay requirements, and virtual environments. Prerequisite: ATCM 2345. (0-3) T

ATCM 3375 Game Systems Design (3 semester credit hours) Exploration of the systems, simulations, and processes that are the foundation of digital games. Students will examine the structural links between mechanics, systems, strategy, and game experience. Prerequisite: ATCM 3365. (3-0) T

ATCM 3376 History of Games (3 semester credit hours) Exploration of the history and culture of digital and analog games, from the early days of the computer industry to the beginning of the 21st century. Students in the course will investigate the origins of game design principles and mechanics that influence modern game design philosophy and the field of game studies. Prerequisite: ATCM 3365 or ATCM 3366. (3-0) T

ATCM 3380 Media Psychology (3 semester credit hours) This course will examine evidence for the role that psychology plays in the production and consumption of media with particular emphasis on how emerging media complicates how human beings process and are impacted by media. Topics of discussion may include emotional response, arousal, memory, and attention. (3-0) R

ATCM 3381 Media and Communication Research Methods (3 semester credit hours) This course examines a range of modes of social scientific inquiry into the impact of emerging communication, such as surveys, experiments, or content analysis. Prerequisite: PSY 2317. (3-0) R

ATCM 3382 Communicating Research (3 semester credit hours) Exploration of strategies to communicate research about emerging communication topics to specialist and non-specialist audiences, including strategies for both traditional and new media. (3-0) R

ATCM 3383 Media Structures, Regulations, and Policies (3 semester credit hours) Examines law, policy, and regulations of broadcast and networked media and their relationship to broader social, political, and economic systems. Considers what modes of representation and communication they afford and constrain. (3-0) R

ATCM 3385 Social Networks (3 semester credit hours) This course introduces the theoretical perspectives and practical applications of the study of social networks with emphasis on the impact of communication technologies on the creation, maintenance, and transformation of social networks in contemporary media environments. Students will also learn to analyze and
visualize networks. (3-0) R

ATCM 3386 Human Communication Online (3 semester credit hours) This course explores how humans communicate and interact with and through technology. Topics may include intrapersonal, interpersonal, group, and organizational levels of computer-mediated communication. (3-0) R

ATCM 3388 Attitudes and Behaviors (3 semester credit hours) This course examines the relationship among beliefs, attitudes, and behavior. Topics include attitude formation, attitude measurement, persuasion and attitude change, the attitude-behavior relationship, interpersonal influence, and general theories of behavioral prediction. (3-0) S

ATCM 3395 Topics in Arts, Technology, and Emerging Communication (3 semester credit hours) Study of principles, techniques, and/or theories related to Arts, Technology, and Emerging Communication. May be repeated for credit as topics vary (6 semester credit hours maximum). Department consent required. (0-3) R

ATCM 4304 World Building (3 semester credit hours) Continuing exploration of narrative across media through the lens of world building. Students in the course will explore world building for games, animation, transmedia storytelling, and other visual and interactive media forms. Prerequisite: ATCM 3304. (0-3) T

ATCM 4305 Computer Animation II (3 semester credit hours) This course is a further exploration of ideas and principles and concepts utilized in the Computer Animation I course. This class will focus on mechanics, movement of the human body and translation into believable performances through animation. Registration for this course will be based on the faculty's review of the student's portfolio. Prerequisites: ATCM 3305 and department consent required. (0-3) Y

ATCM 4306 Modeling and Texturing II (3 semester credit hours) This advanced level course builds on the topics and workflows presented in Modeling and Texturing I. Advanced modeling and texturing concepts and fundamentals are discussed and examined. The principles and techniques covered are geared towards feature film and television work, but also apply to video game model creation. Areas covered include mesh, visualization, proper mesh flow on organic surfaces, digital sculpting and 3D painting applications. Registration for this course will be based on the faculty's review of the student's portfolio. Prerequisites: ATCM 3306 and department consent required. (0-3) Y

ATCM 4307 Lighting and Composition II (3 semester credit hours) This advanced level course builds on the topics and workflows presented in Lighting and Composition I. Advanced lighting and compositing fundamentals are discussed and examined. The principles and techniques covered are geared towards feature film and television work. Areas covered include Global Illumination, image-based lighting (IBL), and node-based compositing. Registration for this course will be based on the faculty's review of the student's portfolio. Prerequisites: ATCM 3307 and department consent required. (0-3) Y

ATCM 4308 Rigging II (3 semester credit hours) This course is a continuation of the Rigging I course and will continue with concepts, tools and techniques used in 3D animation for setting up clean and efficient 3D rigs that are easily and intuitively animated. Topics will include squash and stretch capabilities in rigs, basic MEL scripting, simple dynamics, facial rigs, and basic animation principles for complex rigs. Registration for this course will be based on the faculty's review of the student's portfolio. Prerequisites: ATCM 3308 and department consent required. (0-3) Y

ATCM 4309 Pre-Production Design II (3 semester credit hours) This course focuses on the creation of story reels and animatics for an animation production. Topics will include creation of character artwork, set and prop designs, color keys, and other pre-production elements. Emphasis will be placed on creating production ready assets able to be used by production artists. Prerequisites: ATCM 3309 and department consent required. (0-3) T
ATCM 4310 Motion Capture Animation (3 semester credit hours) In this group project-based course, students practice the motion capture pipeline from calibrating the system to editing data and applying data to 3D characters and follow the 3D computer animation production process to complete short animations. End products are expected to be high quality animations appropriate for professional demo reels. Prerequisite: ATCM 3306 or ATCM 3307 or ATCM 3308. (0-3) Y

ATCM 4312 Digital Sculpting (3 semester credit hours) This class takes an artistic based approach to the creation of 3D polygonal geometry. Students will focus on critical concepts including proportion, form, and translation of 2D designs to 3D figures. Various tools and techniques will be discussed allowing for the creation of custom workflows and methodologies. Prerequisites: ATCM 4306 and department consent required. (0-3) T

ATCM 4313 Special Effects (3 semester credit hours) This course presents procedural methods, such as particle systems and dynamics, for the creation of visual effects used in films and animation. Students learn a variety of procedural methods and problem-solving skills needed to effectively produce and direct visual effects sequences. Prerequisite: ATCM 3305 or ATCM 3306 or ATCM 3307 or ATCM 3308. (0-3) R

ATCM 4314 Character Effects (3 semester credit hours) Students learn the principles of designing and executing character grooms using the latest tools and techniques common in major film studios today. They will also develop technical skills in cloth simulation and a deeper understanding of fluid cloth simulation of fabric-based materials. Prerequisites: (ATCM 3305 or ATCM 3306 or ATCM 3307 or ATCM 3308) and department consent required. (0-3) R

ATCM 4315 Computer Animation III (3 semester credit hours) In this course students will establish an understanding of acting and body language as it pertains to animation. Students will continue to build a vocabulary of terms and concepts and develop their constructive, technical, and aesthetic ability to critique as it relates to animation as an art form. Students will continue to develop a practical understanding of the specific computers and software used in the course as it pertains to the animation workflow. Prerequisites: ATCM 4305 and department consent required. (0-3) Y

ATCM 4316 Animation Lab I (3 semester credit hours) This advanced course mimics an animation studio environment. All major areas of production are represented and work together to create a fully realized 3D animated short. This course utilizes various aspects of all areas of computer animation including story development, layout, modeling, texturing, rigging, animation and lighting, rendering/compositing, sound design, and project planning and management. This is a two-semester sequence course. May be repeated for credit as projects vary (6 semester credit hours maximum). Prerequisites: (ATCM 3305 or ATCM 3306 or ATCM 3307 or ATCM 3308) and department consent required. (0-3) Y

ATCM 4317 Animation Lab II (3 semester credit hours) This course is a continuation of the Animation Lab I course. The course mimics an animation studio environment where all major areas of production are represented and work together to create a fully realized 3D animated short. This course utilizes various aspects of all areas of computer animation including story development, layout, modeling, texturing, rigging, animation and lighting, rendering/compositing, sound design, and project planning and management. May be repeated for credit as projects vary (6 semester credit hours maximum). Prerequisites: ATCM 4316 and department consent required. (0-3) Y

ATCM 4318 Motion Capture Lab (3 semester credit hours) This course mimics an animation studio environment were motion capture technology is used to create a fully realized 3D animated short. This production will require students to work in all areas of computer animation, including story development, layout, modeling, texturing, rigging, key-frame animation, procedural animation, lighting, rendering/compositing, sound design, and project planning and management. Department consent required. (0-3) R
ATCM 4319 Topics in Animation (3 semester credit hours) Course offers a further exploration of ideas and principles utilized in the animation process. Sections may be devoted to a single aspect of animation or to a variety of subjections in the field. May be repeated for credit as topics vary (6 semester credit hours maximum). Department consent required. (0-3) R

ATCM 4320 Political Economy of Digital Media (3 semester credit hours) This course examines the relationships among digital media, economic logics, and social and political institutions. Topics may include intellectual property; the politics of algorithms; labor in digital culture; peer production; and emerging economies such as virtual currencies, barter economies, and markets in biolabor. Prerequisite: ATCM 2321 or ATCM 2322. (3-0) Y

ATCM 4322 Disability, Technology, and Media (3 semester credit hours) This course provides a critical understanding of disability in relation to technology and media. Students will investigate how social constructions of ability and disability influence technology development and media representations; the relationship between the attention economy and representations of bodies, illness, health, and minds; the role of media and technology in constructing norms; and visual rhetorics of the abnormal. Prerequisite: ATCM 3321 or instructor consent required. (3-0) T

ATCM 4323 Feminism, Technology, and Media (3 semester credit hours) This course examines intersectional feminist approaches to technology and media studies. Students learn the history of women in technology fields; feminist approaches to theorizing the relationship between social constructions of gender and technology and media development and use; the dissemination and development of feminist thought and practices; and the articulation of gender in such media as film, television, and digital media. Prerequisite: ATCM 3321 or instructor consent required. (3-0) T

ATCM 4325 Race, Technology, and Media (3 semester credit hours) In this course, students learn about the relationship between media and technology within the histories of Western racism and colonialism; how structural racism affects technology development, the media industries, and media representations; and how race is articulated in media and technology, including in film, television, and digital media. Prerequisite: ATCM 3321 or instructor consent required. (3-0) T

ATCM 4326 Mediated Textuality (3 semester credit hours) This course introduces students to multimodal composition. The class focuses on understanding the signifying strategies of, and relationships among, different media formats in their analog and digital forms. Students will learn to convey narratives and ideas in multiple media formats. Prerequisite: ATCM 3320 or Instructor consent required. (3-0) Y

ATCM 4327 Privacy and Surveillance (3 semester credit hours) This course examines issues in privacy and surveillance, including state, corporate, and peer surveillance; shifting definitions of public and private; sousveillance; and the relationship between inequalities and surveillance practices. (3-0) T

ATCM 4330 Culture Jamming (3 semester credit hours) This practice-intensive course explores digital production in relation to theories of tactical media and culture jamming. Areas of investigation may include social media, mobile media, software, hardware, platforms, and networked performances. Prerequisites: (ATCM 2335 and ATCM 3320) or Instructor consent required. (0-3) Y

ATCM 4334 Topics in Critical Media Studies (3 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Department consent required. (3-0) R

ATCM 4337 Interaction Design II (3 semester credit hours) Explores advanced methods and techniques of interaction design, successful user-centered design, and engaging time-based media in digital and physical mediums with and without visible user interfaces. Prerequisite: ATCM 3337. (0-3) T

ATCM 4338 Motion Graphics II (3 semester credit hours) This course builds on the principles
introduced in Motion Graphics I. Students will continue to explore techniques used in graphic design to enhance a communicated message through a variety of animation techniques. Students will work with image, text, audio, and movement to create dynamic visual communication pieces. Prerequisite: ATCM 3338. (3-0) Y

ATCM 4340 Strategic Design (3 semester credit hours) Applies principles of traditional design to big picture systemic challenges such as health care, education, and climate change. Students will redefine how problems are approached, identify opportunities, and deliver more complete and resilient solutions by crafting decision-making. Prerequisite: ATCM 3337. (0-3) Y

ATCM 4345 Digital Audio Processing (3 semester credit hours) This course presents and develops the theoretical and technical principles of digital audio processing and sound synthesis as well as hands-on applications and experiments. The course will present and use: spectral processors such as single and multi-band filters, dynamic processors (expanders, compressors, noise gate), complex dynamic spectral processors (noise reduction, cross synthesis). Prerequisite: ATCM 3345. (0-3) R

ATCM 4346 Audio Productions Lab II (3 semester credit hours) This course is a continuation of Audio Productions Lab and explores the psychological implications as well as the artistic, cultural, and social dimensions of the use of audio in films, games, and for various other applications. Students will record, edit, process, and diffuse recorded material as well as learn how to select a voice, an instrument, and a sound effect; they will write for auditory presentations and direct recording sessions. May be repeated for credit as projects vary (6 semester credit hours maximum). Prerequisite: ATCM 3346. (0-3) R

ATCM 4350 Digital Video Production II (3 semester credit hours) Students will explore cinematography, editing, and storytelling in video intended for networked distribution. Prerequisite: ATCM 3350. (0-3) Y

ATCM 4357 Digital Fabrication Lab II (3 semester credit hours) This course explores the relationship between digital fabrication and traditional artistic practice. Students will focus on a specific aspect of digital fabrication and its relationship to their creative ideas. In this course students will use project-based approaches to apply techniques and processes they have learned to create work that reflects a strong clear artistic vision. Emphasis is on a critical dialogue about the conceptual basis of their ideas and the processes and techniques used to realize them. Registration for this course will be based on the faculty's review of the student's portfolio. Prerequisites: ATCM 3357 and instructor consent required. (0-3) R

ATCM 4364 Topics in Design and Production (3 semester credit hours) Study of principles of interaction design, sound, video, digital fabrication, projection mapping, or other forms of creative production involving technology. May be repeated for credit as topics vary (6 semester credit hours maximum). Department consent required. (0-3) R

ATCM 4365 Game Design II (3 semester credit hours) Advanced study of interactive game design, focusing on methods and techniques for rapid digital prototyping, mechanical iteration, tuning, and balancing. Students in the course will examine both successes and failures to improve on successive iterations of a game mechanic, concept, or experience. Prerequisites: ATCM 3365. (0-3) Y

ATCM 4366 Game Studies II (3 semester credit hours) Advanced research in game studies with a focus on critical analysis, research methodologies, and the application of principles from related academic fields. Students in this course will explore an original research topic in game studies. Prerequisite: ATCM 3366. (3-0) T

ATCM 4367 Level Design II (3 semester credit hours) Exploration of advanced methods and techniques in level design for interactive games, including contextual player guidance, challenge scaffolding, indexical storytelling, complex event scripting, and asset management. Prerequisite: ATCM 3367. (0-3) T

ATCM 4368 Scripting for Games II (3 semester credit hours) Exploration of advanced methods
and techniques in scripting and programming for interactive games, including procedural generation as a tool for game development. Prerequisite: ATCM 3368. (3-0) T

ATCM 4370 Virtual Environments II (3 semester credit hours) Exploration of advanced methods and techniques used in virtual environments for real-time experiences and simulations. Topics may include composition, style adherence, shader development, vertex painting, indexical storytelling, and pipeline optimization. Prerequisites: ATCM 3370 and department consent required. (0-3) R

ATCM 4373 Animation for Games (3 semester credit hours) This course builds upon the foundational principles explored in Animation I. Students will learn and practice animation processes, from preparation and planning to animating a fully rigged character using key frame animation, to implementation into a game engine to create a real-time, immersive user experience. Prerequisite: ATCM 3305. (3-0) Y

ATCM 4375 Game Design III (3 semester credit hours) Advanced research in interactive game design and development, focusing on experimental, educational, and simulation-based games. Students in the course will develop original games individually and in teams, with an emphasis on mechanical innovation, technical achievement, and unique player experiences. Prerequisite: ATCM 4365. (3-0) T

ATCM 4376 Game Production Lab I (3 semester credit hours) This course functions as a simulation of the game development industry and is intended for students who have completed substantial coursework in game development and design. Students in the course develop selected original game concepts through multiple iterations and milestones, culminating in a professional-level release. Registration for this course will be based on the faculty's review of the student's portfolio. May be repeated for credit as topics vary (6 semester credit hours maximum). Department consent required. (0-3) Y

ATCM 4377 Game Production Lab II (3 semester credit hours) This course is a continuation of the Game Production Lab I course. The course simulates the game development industry for students who have completed substantial coursework in game development and design. Students in the course develop selected original game concepts through multiple iterations and milestones, culminating in a professional-level release. Registration for this course will be based on the faculty's review of the student's portfolio. May be repeated for credit as topics vary (6 semester credit hours maximum). Department consent required. (0-3) R

ATCM 4379 Topics in Games (3 semester credit hours) Study of multidisciplinary topics in game design, development, production, and studies. Sections may be devoted exclusively to a single topic or to a variety of topics in the field. May be repeated for credit as topics vary (6 semester credit hours maximum). Department consent required. (0-3) R

ATCM 4380 Communication, Media, and Information Technology (3 semester credit hours) This course examines the interactions among mass media, new media technology, and individuals. Topics include how communication shapes our perceptions, how mass media affect our attitudes and behaviors, and how the rise of new media technology complicates our understanding of the relationship between mass media and everyday citizens. (3-0) T

ATCM 4384 Ethics in New Media, Technology, and Communication (3 semester credit hours) Engaging classical ethical theory from an applied perspective, this class will explore ethical issues in mass, social, and emerging media with particular attention to how media content producers behave in the larger social, cultural, and political framework. (3-0) T

ATCM 4385 Children and Media (3 semester credit hours) This course will examine the role of media in the lives of children and how developmental differences influence how they process and respond to the media. Major areas of consideration include children's responses to media violence, educational media, and play with media. (3-0) T

ATCM 4386 Journalism in the Networked Age (3 semester credit hours) This course will examine how new media technology and changing relationships between journalists and audiences
affect the nature, potential, and limitations of contemporary journalism to inform, engage, and entertain the public. (3-0) T

**ATCM 4388** Political Communication (3 semester credit hours) This course examines political communication from different perspectives, including topics such as how audiences make sense of political messages, how the mass media shape perceptions and attitudes toward politics and politicians, or how political issues are communicated in the mass media. (3-0) T

**ATCM 4395** Advanced Topics in Arts, Technology, and Emerging Media (3 semester credit hours) Study of advanced principles, techniques, and/or theories related to Arts, Technology, and Emerging Communication. May be repeated for credit as topics vary (6 semester credit hours maximum). Department consent required. (0-3) R

**ATCM 4397** Senior Seminar (3 semester credit hours) Culminating course in Arts, Technology, and Emerging Communication. Students in this course will engage in the creation of an advanced creative and/or research project related to their pathway's central questions. Restricted to students enrolled in their last long semester at UT Dallas. Department consent required. (0-3) S

**ATCM 4398** Capstone Project (3 semester credit hours) Culminating independent study in Arts, Technology, and Emerging Communication. Under a faculty member's direction, students will engage in the creation of an advanced creative and/or research project related to their pathway's central questions. Restricted to students enrolled in their last long semester at UT Dallas. Department consent required. (3-0) S

**ATCM 4399** Senior Honors in Arts, Technology, and Emerging Communication (3 semester credit hours) Intended for students conducting independent research for an honors thesis or project. Students will develop an advanced creative and/or research project and paper related to their pathway's central questions. Restricted to students majoring in Arts, Technology, and Emerging Communication who are within one semester of graduation and who meet honors requirements. Department consent required. (3-0) Y

**ATCM 4V96** Independent Study in Arts, Technology, and Emerging Communication (1-3 semester credit hours) Independent study under a faculty member's direction. Signature of instructor and Associate Dean on project proposal required. May be repeated for credit as topics vary (6 semester credit hours maximum). Prerequisites: Upper-division standing and completion of all lower-division requirements in ATEC and instructor consent required. ([1-3]-0) R

**Interdisciplinary Studies-Arts Technology and Emerging Communication**

**ISAE 2121** Careers for ATEC Majors (1 semester credit hour) This course provides students with assistance in exploring careers related to Arts, Technology, and Emerging Communication fields and in making effective career decisions. (1-0) R

**ISAE 4V50** Internship (1-3 semester credit hours) Students undertake a new learning experience at a supervised work situation related to their academic interests. An internship provides exposure to a professional working environment, application of theory to working realities, and an opportunity to test skills and clarify goals. May be repeated for credit (6 semester credit hours maximum). Department consent required. ([1-3]-0) S