

# Arts and Entertainment Technologies (AET)

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**AET 304 Foundations of Arts and Entertainment Technologies 3 Hours**  
Explore the industries, practices, and concepts defining arts and entertainment technologies in the twenty-first century.

**AET 310 Foundations of Creative Coding 3 Hours**  
Explore applied computational thinking and logical processes for solving creative problems with technical solutions using the graphics language Processing.

**AET 110T, 310T Topics in Innovative Design 1,3 Hours**  
Exploration of innovative topics in design.

**AET 311 Media and Motion 3 Hours**  
Introduction to effective visual storytelling with 2D and 3D digital content.

**AET 312 Games and Interactivity 3 Hours**  
Introduction to user-centered design process, interactivity, and game design.

**AET 313 Code and Fabrication 3 Hours**  
Introduction to building interactive physical projects with hands-on code, microcontrollers, and cardboard.

**AET 314 Sound and Space 3 Hours**  
Introduction to dynamic sound, lighting, and video projection for screens and spaces.

**AET 119, 219, 319 Topics in Arts and Entertainment Technologies 1-3 Hours**

**AET 119S, 219S, 319S, 419S, 519S, 619S, 719S, 819S, 919S Topics in Arts and Entertainment Technologies 1-9 Hours**  
This course is used to record credit the student earns while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad adviser in the School of Design and Creative Technologies. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studies program.

**AET 320F Immersive Audio 3 Hours**  
Use spatial audio systems to create public sound installations and immersive experiences. Explore designing novel multichannel audio systems, binaural audio mixing, and combining spatial audio and visual tech to design immersive installations.

**AET 320L Generative Music 3 Hours**  
Explores algorithmic music systems including procedural techniques, genetic algorithms and cellular automata.

**AET 320M Live Music Coding 3 Hours**  
An exploration of techniques for live, real-time music programming and sound production in performance settings.

**AET 320P Sound Design 3 Hours**  
Explore the techniques and tools used in the creation of sound for film, television, and video games. Learn about the history of sound design, the role of the sound designer, and the process of creating a soundtrack from concept to final mix.

**AET 321C Audio Processing 3 Hours**  
Explores the use of sound-shaping tools, convolution reverb, noise reduction, pitch and time editing to make precise corrections to audio files.

**AET 321J Introduction To Game Audio 3 Hours**  
Explore the sound design, foley, and audio implementation in video games.

**AET 321K Advanced Game Audio 3 Hours**  
Examine audio practices used in the video game industry.

**AET 322K Introduction To Audio Coding 3 Hours**  
Explore programming methods for MIDI and audio signal processing in the visual interface language Max/MSP. Examine how to manage audio signal flow and communications with external devices such as keyboard controllers, pedals and other sensors. Discuss the creation of systems for musical interactivity in live performance and immersive sound installation applications and integration with Ableton Live.

**AET 322L Advanced Audio Coding 3 Hours**  
Explore complex connections in audio signal flow and communication with external devices using signal processing and Max/MSP.

**AET 323D Interactive Music 3 Hours**  
Create real-time interactive music using Ableton Live and Musical Instrument Digital Interface (MIDI) controllers.

**AET 323G Generative Audio Programming 3 Hours**  
Use real-time, generative audio coding tools.

**AET 324 Themed Entertainment Design 3 Hours**  
Explore best practices behind the design of themed entertainment experiences through a variety of lectures, group projects, and individual study.

**AET 324D Principles of Animation 3 Hours**  
An introduction to the principles of animation for 2D and 3D systems. Use various techniques to convey a sense of weight, emotion, and story for simple and complex objects in both 2D and 3D.

**AET 324J Visual Storytelling 3 Hours**  
Explore graphic communication, visual storytelling, and digital visualization of objects, spaces, environments, information, and data. Utilize pre-rendered realme, and procedural systems to explore 2D and 3D previsualization techniques, infographic design, data processing, and rendering systems.

**AET 124P, 224P, 324P Advanced Production Laboratory 1-3 Hours**

**AET 326E 3D Animation and Rigging 3 Hours**  
An introduction to 3D animation techniques and rigging systems.

**AET 326G Realtime VFX 3 Hours**  
An introduction to creating visual effects for games and realtime engines.

**AET 329J Digital Fabrication 3 Hours**  
Explores common and emerging digital fabrication technologies for artists and designers.

**AET 129S, 229S, 329S, 429S, 529S, 629S, 729S, 829S, 929S Topics in Arts and Entertainment Technologies 1-9 Hours**  
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**AET 330C Business of Entertainment 3 Hours**  
Explore the fundamentals of producing entertainment from inspiration to execution as well as all aspects involved in producing live stage and on screen commercial productions.

**AET 130T, 330T Topics in Innovative Design 1,3 Hours**  
Exploration of innovative topics in design.

AET 133, 333 Topics in Video Game Development 1,3 Hours

Topics in video game development.

AET 333D Video Game Production 3 Hours

Explores the creation and execution of plans and roadmaps to strategize how game development is executed, organized, scheduled, budgeted, and managed.

AET 334 Video Game Character Animation 3 Hours

Examine the process of creating 3D gameplay animations, techniques to improve animation workflow, and how to implement animations into the Unreal Engine.

AET 334C Level Design 3 Hours

Design and build interactive 2D or 3D game levels (game maps) using an industry standard tool such as Unity or Unreal. Explore the design pipeline for creating levels from concept and layout, to whiteboxing, creating and integrating environment art and sound, worldbuilding, and adding simple scripted interactions, animations, sound effects, and VFX. Examine the different design process for small indie games compared to big AAA games.

AET 334E Video Game Art Pipeline 3 Hours

An introduction to creating and working with game ready assets in 2D and 3D.

AET 334F Video Game Scripting I 3 Hours

Introduction to scripting interactive content for games using an industry-standard scripting language and game engine.

AET 334J Multiplayer Video Game Design 3 Hours

Examination of the design and technical requirements for developing multiplayer games in different genres.

AET 334K Video Game Prototyping 3 Hours

Explore rapid prototyping techniques for video game art and design using ideation, storyboarding, pitching, prototyping, testing, and documentation.

AET 134L, 334L User Interface/User Experience for Video Games 1,3 Hours

An introduction to user interface (UI) and user experience (UX) design for video games.

AET 334M Video Game Systems Design 3 Hours

Create and apply play systems which establish the framework for user experience (UX) and level design.

AET 334N Interactive Storytelling 3 Hours

Apply cross-disciplinary methods to create immersive narratives for interactive experiences.

AET 334P User Interfaces 3 Hours

Explore a synthesis of data visualization and user interface design for games, simulation, and digital environments. Discuss infographics, accessibility, and user centered design.

AET 334R Technical Art I 3 Hours

Examine technical aspects of game content creation including shaders, automation, tool creation, and special effects.

AET 334S Technical Art II 3 Hours

Explore advanced technical art projects for games.

AET 335D Realtime Visualization 3 Hours

An introduction to using game engines and realtime graphics systems for architectural, automotive, and other types of product visualization.

AET 335F Video Game Scripting II 3 Hours

Advanced scripting of interactive content for video games using an industry-standard scripting language and game engine.

AET 135J, 335J Live Video Game Design 1,3 Hours

An introduction to design methods for video games as a service and persistent multiplayer video game worlds.

AET 335K Virtual Reality for Video Games 3 Hours

Explores design and creation of virtual reality (VR) content for games, and deploying and testing on VR hardware.

AET 335M 2D Animation For Games 3 Hours

Learn the tools and comprehensive knowledge to create beautiful, functional, and dynamic art for video games.

AET 335V Introduction to Mixed Reality 3 Hours

Introduction to mixed reality platforms and hands-on development of XR experiences. Explore creative AR interactions with 3D models, animated characters, sound assets, and visual effects, to promote learning opportunities and branded marketing.

AET 336C Video Game History and Culture 3 Hours

Analyze the history of video games from their origins in computer labs, to their surge in popularity that has significantly impacted modern society. Examine the evolution of video games, their influences on culture and laws, controversies in gender politics and minority representation, and how the medium developed both commercially and as a form of artistic expression.

AET 337 Writing for Interactive Games 3 Hours

Exploration of game creation as a multi-threaded narrative story. Students create, write, edit, and refine game stories and game dialogue and build small game scenarios using a variety of game design software platforms.

AET 337D Narrative Design 3 Hours

Explore establishing, communicating, and assimilating a cohesive narrative into all aspects of interactive and immersive media experiences through a cross-disciplinary lens.

AET 337N Introduction To Narrative 3 Hours

Explore the origins, formal elements, and best practices of good storytelling across multiple mediums through study, analysis, and writing practice.

AET 139, 239, 339, 439 Advanced Topics in Arts and Entertainment Technologies 1-4 Hours

Advanced topics in arts and entertainment technologies.

AET 340D Interactive Installation Design 3 Hours

Explore the skillsets and collaborative processes involved in creating interactive installations. Learn interactive technology, physical computing, and user engagement to create immersive and participatory experiences.

AET 341D Digital Musicianship 3 Hours

Explore harmony, chord progressions, and song structure in the MIDI grid.

AET 342C 3D Modeling and Texturing 3 Hours

Utilize hard surface and organic modeling workflows, modern texturing techniques, and physically-based shaders to create efficient assets based on clear content goals.

AET 342D 3D Materials And Lighting 3 Hours

Explore 3D game models using state of the art workflows and tools.

AET 344D 3D Previsualization for Live Entertainment 3 Hours

Instructs students on how to bring an idea from concept to fully rendered pitch-ready environment by utilizing 2D and 3D technical drafting tools in Vectorworks, and a lighting visualizer.

AET 344F Design Skills: Projection 3 Hours

Introduction to the creative and technical design process in the field of projection design for live performances.

AET 346C Video Game Modding 3 Hours

Focus on modifying existing video games to experiment with gameplay ideas and create unique play experiences.

AET 346F Video Game Design Challenges 3 Hours  
Focuses on the creation of unique play experiences under extreme constraints.

AET 348 Concert and Event Lighting 3 Hours  
Explore methodologies utilized in live event lighting.

AET 348G Media Design and Technology 3 Hours  
Investigate design challenges in-depth, in the field of Media and Projection Design.

AET 348K 3D Projection Mapping 3 Hours  
Explore common 3D mapping techniques and applications that include architectural mapping, dome projection and Cave automatic virtual environments (CAVE) projection.

AET 348L Advanced System Engineering 3 Hours  
Study common signals (digital and analogue), data communication protocols, synchronization, show control as well as layout and contingency considerations for professional entertainment systems.

AET 350C Advanced Creative Coding 3 Hours  
Explore advanced computational concepts and their application to more diverse creative media domains including; audio, video, music, and the web.

AET 351C Audio Production Lab 3 Hours  
Individual or team projects in audio production for live performance.

AET 351E Do It Yourself Synthesizer Lab 3 Hours  
Projects to design and build microprocessor-based synthesizers and special effects (SFX) components and systems.

AET 153, 353 Advanced Topics in Video Game Development 1,3 Hours  
Advanced topics in game development.

AET 354C Cross Platform Storytelling 3 Hours  
Focus on the future of storytelling and experience design across multiple platforms and services.

AET 355D Mobile Game Design 3 Hours  
Design and develop games specifically for mobile devices. Learn about the best practices for production and deployment.

AET 357 Solo Studio 3 Hours  
Build creative confidence through a range of methodologies including iterative design and prototyping, exploring research strategies, and exercising critical reflection.

AET 358 Topics in Collaborative Studio 3 Hours  
Focus on team based projects that culminate in large events, presentations, or performances.

AET 358.1 Next Level Arcade 3 Hours  
Produce a custom arcade game; create game designs, art, sound, and the physical enclosure and controls.

AET 358.2 Collaborative Music Project 3 Hours  
Produce collaborative projects in advanced sound processing and synthesis and audio-visual systems.

AET 358.3 Engineering for Live Events 3 Hours  
Examine advanced concepts, methods, and systems utilized in the fields of live entertainment and immersive artistic practices. Explore core technologies and illuminate how each area of work within projection, lighting, sound and interactivity relates and is connected to others.

AET 358.4 Indie Game Studio 3 Hours  
Learn how to navigate the indie game industry from a business perspective, including marketing strategies, community engagement, publishing on digital platforms, and exploring funding options.

AET 358.5 Event Management and Production 3 Hours  
Develop and deploy skillsets to plan and execute the operational and management details related to live events and conference type events.

AET 358.6 Immersive Environments 3 Hours  
Capture real time motion data and build immersive experiences with light, sound, and projection in the Lab for Immersive Media (LIM).

AET 358.7 Games for Good 3 Hours  
Utilize game design skills to create experiences that improve lives. Learn about transformational game development that will support therapy, advance scientific research, bolster mental health, and revolutionize education.

AET 361C Physical Computing 3 Hours  
Introduces concepts and methods of physical computing, including the creation, building, and programming of small devices and the integration of external devices and objects.

AET 170 Research Methods Proseminar 1 Hour  
Explore research methods and the preparation of a thesis topic and senior thesis proposal.

AET 374 Independent Study 3 Hours  
Independent study or research in arts and entertainment technologies.

AET 375 Portfolio 3 Hours  
Focus on portfolio development, showcasing professional skills, and preparation for the demands of industry.

AET 376 Game Capstone: 2-D 3 Hours  
Work in small teams from different disciplines to develop 2D games.

AET 377 Game Capstone: 3-D 3 Hours  
Work in small teams from different disciplines to develop 3D games.

AET 378H Honors Senior Thesis 3 Hours  
Participate in a large scale senior project.