AET Course Inventory Abstracts

AET 101 AET COLLOQUIUM I
Abstract: Guest artists, scientists, developers, and corporate leaders present on subjects applicable to arts and entertainment technologies.

AET 102 AET COLLOQUIUM II
Abstract: Guest artists, scientists, developers, and corporate leaders present on subjects applicable to arts and entertainment technologies.

AET 103 AET COLLOQUIUM III
Abstract: Guest artists, scientists, developers, and corporate leaders present on topics applicable to arts and entertainment technologies.

AET 304 FNDTNS OF ART/ENTERTAIN TECH
Abstract: Broad overview of digital media technologies, software, and applications associated with the intersection of the arts and technology. Introduction to the core concepts of the three emphases of the Center for Arts and Entertainment Technologies: Music and Sound, New Performance Technologies, and Game and Mobile Media Applications. Also considers the cultural, philosophical, ethical, and practical aspects of entertainment technology.

AET 305 FOUNDATIONS OF MUSIC TECH
Abstract: Historical perspective of music technology supported by a hands-on focus on modern digital technologies that comprise the world of electronic music, including MIDI, the digital audio workstation, digital signal processing, virtual instruments, digital audio systems, recording, effects, and internet distribution.

AET 306 FNDTNS DIG IMAGING/VISUALIZTN
Abstract: Historical developments in raster and vector graphics and examination of techniques and technologies of 2-D, 3-D, moving image creation, manipulation, projection, and distribution.

AET 308 MUSIC/TECHNOLOGY/CULTURE
Abstract: Explores the history of technology and culture while focusing critically on the impact technology has on music and how we experience it. Particular emphasis on the impact music technology has had on global culture.

AET 309 BEING DIGITAL
Abstract: Reviews the essential ideas of digital devices and social networks. Provides a general background on computer devices today: computers, hardware, software, the Internet, and information security.
AET 310 FNDTNS OF CREATIVE
Abstract: A guide for expressing original ideas directly in computer code using the graphics language Processing. Examines the making of computer tools for implementing artistic visions. Explores the computer’s role as an artist’s medium in the context of major ideas in contemporary art.

AET 316 FNDTNS OF NEW PERF TECH
Abstract: Introduction to the basic concepts and methods, as well as common systems used in the field of New Performance Technology. Discussion of core technologies and how each area of work within NPT relates is connected to the others. Explores tools and techniques prevalent in four specific applications of NPT: 3-D projection mapping, intelligent led lights & pixel mapping, interactive & generative imagery, 3-D previsualization. Subjects include the historical landmarks of interactive performance, projection system design, media servers, common signal and data formats, imagery creation for live performance and current trends in live event technology.

AET 318 FNDTNS OF GAMES/PLAYABLE APPS
Abstract: Introduction to concepts of game play, game narrative, user-interaction, modeling, and animation. Historical examination of game genres, systems, and games from a cultural and gender perspective.

AET 320C CONTEMPORARY MUSIC STYLES
Abstract: Explores the form, composition, production, arrangement and performance of a variety of contemporary styles of music. Focuses on the digital audio workstation and the use of instruments, both real and virtual, to compose in different genres.

AET 321 MULTITRACK REC/MIX/MASTERING
Abstract: Exploration of sound recording of live performance, including microphone placement, equalizing (EQ), compression techniques, mixing, localization strategies, and final product mastering.

AET 322C SONIC BRANDING
Abstract: Explores the relationship between sound and music, brand identity, UI/UX, and advertising.

AET 323 FILM AND GAME SCORING
Abstract: Exploration of film and game play situations requiring music in the form of an instrumental score or created with virtual instruments. Comparative study of music tracks in popular film genres, documentary films, console game titles, and games as a reference for original works.
AET 325 DIGITAL PRODUCTION ART 2-D
Abstract: Two-dimensional digital drawing and painting techniques with computer software.

AET 326 DIGITAL PRODUCTION ART 3-D
Abstract: Basic principles of three-dimensional digital modeling and animation production, including modeling and texturing, basic character animation, project conception through digital production methodology, and technical language used in industry.

AET 327 ADVANCED 3-D MODELING
Abstract: Continued exploration of methods and procedures used in the professional production of 3-D modeling, animation, and visual effects, including advanced modeling techniques, advanced surfacing techniques, specularity, sequenced mapping, and 3-D digital printing.

AET 328 ANIMATION AND RIGGING
Abstract: 3-D character rigging, animation armatures of joints, forward and inverse kinematics, types of 3-D character deformations, facial animations, bipedal character rigging and animation, and exploration into 3-D production animation environments.

AET 329 MEDIA FOR LIVE PERFORMANCE
Abstract: Introduction to the production and integration of media into live performance environments. The focus is three-fold: Firstly on creating original media, then on integrating original content into different performance genres including complementing scenery, lighting, and performers, and lastly how collaboration influences the previous steps. A basic knowledge of Adobe Photoshop and Adobe After Effects is required.

AET 330 DIGITAL RENDERING FOR THEATRE
Abstract: Introduction and development of digital rendering techniques primarily used for theater design including the development of scenic and costume renderings, as well as paint elevations, model pieces, renderings indicative of lighting choices, and projections. Emphasis on creating images designed to be shared and used digitally, addressing the challenges of printing color images, and the development of skills in digital painting using Adobe Photoshop.

AET 331 COMPUTER MUSIC PROGRAMMING I
Abstract: Concepts and principals of programming MIDI and audio signals using Max/MSP, MIDI, and audio IO systems, design and organization of Max/MSP programs, algorithms, and techniques to manipulate data and sound.
AET 332 COMPUTER MUSIC PROGRAMMING II
Abstract: Exploration of algorithmic sound processing, signal processing techniques including filters, FFT, convolution, sound analysis/re-synthesis using Max/MSP.

AET 335C GAME DESIGN AESTHETICS
Abstract: Examines different game genres and other playable applications from the viewpoint of design.

AET 336 GAME HISTORY AND THEORY
Abstract: Introduction to critical and historiological approaches to video games and game design, including video game histories and archives, critical media theory in game development and contemporary social issues in gaming.

AET 337 WRITING FOR INTERACTIVE GAMES
Abstract: 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 338 PRINCIPLES OF INTER DESIGN
Abstract: Advanced design in arts and entertainment technologies; principles and theories on interaction and user experience in gaming and mobile media applications.

AET 340 INTER GAME AND MEDIA DEV
Abstract: Advanced digital production in arts and entertainment technologies in regards to the development process of gaming and mobile media applications.

AET 341 SOUND SYNTHESIS/AUD PROCESSING
Abstract: Physics and mathematics of audio signal processing, including filter design, reverberation algorithms, direct synthesis technologies, analysis/synthesis technologies, waveguide systems, compression, and limiting.

AET 342 AUDIO-VISUAL PROGRAMMING
Abstract: Audio and visual synthesis and processing, exploring techniques to synchronize audio and visual data to create unified real-time presentations.

AET 344C 3-D PREVISUALIZATION
Abstract: 2-D and 3-D drafting for previsualization solutions. Introduction to the fundamentals and skills of CAD Drafting in Vectorworks, the included Renderworks environment and subsequent integration of 3d files into previsualization software relevant to entertainment professionals. The focus is on skills required to generate and visualize accurate three-dimensional entertainment designs within software environments. Discusses CAD drafting
practices, common terms, the 2d/3d workflow and integration of 3d objects in common previsualization environments for entertainment design professionals.

**AET 345 DESIGNING VIRTUAL WORLDS**
Abstract: Exploration of architectural concepts and 3-D world building. Students create and model virtual and multi-level worlds from the viewpoint of game play, object, and character movement.

**AET 346 GAME SCRIPTING AND MODDING**
Abstract: Introduction to operations, modifications and coding of game engines. Exploration of “modding” of existing games and scripting of Unity using Java and/or C#.

**AET 347 PROJECTION DESIGN**
Abstract: Introduction to projection design in live performance. Exploration of important work by past and present practitioners through discussion, reading and research. Discusses workflow, methodology and considerations necessary to practically realize a projection design including possible projection system configurations, bespoke imagery, playback systems such as Qlab, Isadora and Watchout as well as projector and screen material options. Basic knowledge of Autocad or Vectorworks is required.

**AET 348 CONCERT AND EVENT LIGHTING**
Abstract: Exploration of the styles, tools, and techniques specific to concert and event lighting production in a variety of environments: large-scale music venue, corporate ballroom, outdoor stage and intimate club.

**AET 349 AUGMENTED REALITY**
Abstract: Explores the current Augmented Reality (AR) tools and techniques. Investigates AR applications, analyzes and deconstructs various techniques, and examines the skills and tools needed. Also explores other approaches to immersive and experiential designs such as virtual reality, 3-D projection mapping, and stereoscopy.

**AET 350 COMPUTER MUSIC PROJECT**
Abstract: Project in advanced sound processing and synthesis and audio-visual systems.

**AET 351 LIVE AUDIO MIXING**
Abstract: Project in live audio for concerts, performances, theatre, or other productions. Includes setup, engineering, live-capture, and mixing of live productions in the field.
AET 352 SOUND DESIGN PROJECT
Abstract: Project developing and creating a complete sound design project for film, video, or games.

AET 355C ADVANCED GAME SCRIPTING
Abstract: Explores computer and video game script/code through the use of a computer game engine to control gameplay, character behaviors, physics, and world modifications. Reviews the major aspects of coding and creating games within a game engine.

AET 356 TECHNICAL ART PRODUCTION
Abstract: Production processes to merge game assets and game code and management of these functions within the game production process.

AET 360C ENTERTAINMENT SYSTEM DESIGN
Abstract: Explores how lighting, projectors, and media are controlled over live entertainment networks. Introduces essential hardware and software components and how they communicate with one another to execute a variety of designs.

AET 361C PHYSICAL COMPUTING
Abstract: 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 362C GENERATIVE MEDIA/VISUALS
Abstract: Introduces the foundations of creating and generating real-time visuals for live events. Explores the algorithms essential to generating visuals for electronic dance music, interactive art, music concerts, and dance performances. Utilizing digital and traditional skill-sets to generate and manipulate imagery in real-time using a variety of sensor inputs and control options.

AET 363C VISUAL PROGRAMMING
Abstract: Continued exploration of dynamic, real-time visual computing toward the production of a large final project. Focuses on the inclusion of external device input/output and interaction with MIDI and OSC protocols for applications in interactive performance settings.

AET 364 ADVANCED PRODUCTION DESIGN
Abstract: Facilitates collaborative design to realize a large project. Explores the process of working with a team to generate and produce fully realized design packages on a large stage in front of an audience.
AET 365 COLLABORATIVE INSTALLTN DESIGN
Abstract: Facilitates collaborative design to realize an installation that combines visual processing, projection, sound, light, human interaction, and live performance.

AET 367 THE ENTREPRENEURIAL ARTIST
Abstract: Exploration of new modes of online and social arts marketing and self promotion. Use of established models to create materials and prototype marketing resources.

AET 368 INTERNSHIP I
Abstract: Internship with an external company or institution, supervised by arts and entertainment technologies faculty.

AET 369 INTERNSHIP II
Abstract: Internship with an external company or institution, supervised by arts and entertainment technologies faculty.

AET 372 SENIOR DESIGN PROJECTS I
Abstract: Creation of a project within a team, with the guidance and advice of faculty members. Industry and faculty members can sponsor these projects.

AET 373 SENIOR DESIGN PROJECTS II
Abstract: Continuation of a project within a team, with the guidance and advice of faculty members. Industry and faculty members can sponsor these projects.

AET 374 INDEPENDENT STUDY
Abstract: Independent study or research in arts and entertainment technologies.

AET 376 GAME CAPSTONE: 2-D
Abstract: Group project developing a working 2-D game.

AET 377 GAME CAPSTONE: 3-D
Abstract: Group project developing a working 3-D game.

AET 378 SENIOR THESIS I
Abstract: Large scale senior project.

AET 379 SENIOR THESIS II
Abstract: Continuation of large scale senior project in Arts and Entertainment Technologies 378.