

## **CAET Fall 2017 & Spring 2018 Courses**

### **AET 101 AET COLLOQUIUM I (Fall 2017)**

Instructor: Bruce Pennycook

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

### **AET 102 AET COLLOQUIUM II (Spring 2018)**

Instructor: Yuliya Lanina

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

### **AET 103 AET COLLOQUIUM III (Fall 2017)**

Instructor: Bruce Pennycook & Jamie Rhodes

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

### **AET 304 FNDTNS OF ART/ENTERTAIN TECH (Fall 2017 & Spring 2018)**

Instructor: Jack Stamps

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 (Fall 2017 & Spring 2018)**

Instructor: EMS AI (MUS 319D)

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 (Fall 2017 & Spring 2018)**

Instructor: Neal Daugherty

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 (Spring 2018)**

Instructor: Jack Stamps

Abstract: Exploration of music technology and its social-cultural relationship through the examination of its historical origins and critical evaluation of the various kinds of music technologies that have emerged.

**AET 310 FNDTNS OF CREATIVE CODING (Fall 2017 & Spring 2018)**

Instructor: Shirley Steele

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 (Spring 2018)**

Instructor: Matt Smith

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 (Spring 2018)**

Instructor: Paul Toprac

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 319 INTRO TO DIGITAL IMAGING (Spring 2018)**

Instructor: Jeff Kurihara

Abstract: TBA

**AET 319 PRODUCTION LAB I (Fall 2017 & Spring 2018)**

Instructor: T D Staff

Abstract: T D 314P

**AET 320C CONTEMPORARY MUSIC STYLES (Fall 2017)**

Instructor: Jack Stamps

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 (Fall 2017)**

Instructor: TBD

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 (Fall 2017)**

Instructor: Jack Stamps

Abstract: Explores the relationship between sound and music, brand identity, UI/UX, and advertising.

**AET 323 FILM AND GAME SCORING (Spring 2018)**

Instructor: Graham Reynolds

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 (Fall 2017 & Spring 2018)**

Instructor: Neal Daugherty

Abstract: Two-dimensional digital drawing and painting techniques with computer software.

**AET 326 DIGITAL PRODUCTION ART 3-D (Fall 2017 & Spring 2018)**

Instructor: Dax Norman

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 (Fall 2017)**

Instructor: Dax Norman

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 (Spring 2018)**

Instructor: Dax Norman

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 (Spring 2018)**

Instructor: Sven Ortel

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 (Spring 2018)**

Instructor: Bill Bloodgood

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 (Fall 2017)**

Instructor: Russell Pinkston

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 (Spring 2018)**

Instructor: Russell Pinkston

Abstract: Exploration of algorithmic sound processing, signal processing techniques including filters, FFT, convolution, sound analysis/re-synthesis using Max/MSP.

### **AET 335 GAME AESTHETICS (Fall 2017)**

Instructor: Paul Toprac

Abstract: Examines different game genres and other playable applications from the viewpoint of design.

### **AET 336 GAME HISTORY AND THEORY (Spring 2018)**

Instructor: TBD

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 (Fall 2017 & Spring 2018)**

Instructor: Susan O'Connor

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 339 ADVANCED 2D ANIMATION (Spring 2018)**

Instructor: Neal Daugherty

Abstract: Advanced two-dimensional digital drawing and painting techniques with computer software.

**AET 339 CONCEPTS OF VISUAL STYLE (Spring 2018)**

Instructor: Dax Norman

Abstract: An exploration of digital art production, where students will learn tools and techniques to create a cohesive visual universe from scratch. Projects will focus on creating concept art for games, film, the Internet and new media. Students will find and develop their own visual style and create a myriad of still image pieces for their digital and print portfolio.

**AET 339 LIGHTING DESIGN (Spring 2018)**

Instructor: Michelle Habeck

Abstract: TBD

**AET 339 MUSICAL ACOUSTICS (Spring 2018)**

Instructor: James Gelb

Abstract: Explores the science of sound and how musical instruments work as well as principles of musical scales, hearing, architectural acoustics, and electronic music.

**AET 339 NPT PRODUCTION LAB (Fall 2017 & Spring 2018)**

Instructor: Dwight "Monti" Monteith

Abstract: Special projects in New Performance Technology (NPT).

**AET 339 PRODUCTION LAB II (Fall 2017 & Spring 2018)**

Instructor: T D Staff

Abstract: T D 324P

**AET 341 SOUND SYNTHESIS/AUD PROCESSING (Spring 2018)**

Instructor: Jack Stamps

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 344C 3-D PREVISUALIZATION (Fall 2017)**

Instructor: Matt Smith

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 3-D 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 2-D/3-D workflow and integration of 3-D objects in common previsualization environments for entertainment design professionals.

### **AET 346 GAME SCRIPTING AND MODDING (Spring 2018)**

Instructor: TBD

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 (Fall 2017)**

Instructor: Sven Ortel

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 (Spring 2018)**

Instructor: TBD

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 (Spring 2018)**

Instructor: TBD

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 (Spring 2018)**

Instructor: Bruce Pennycook

Abstract: Project in advanced sound processing and synthesis and audio-visual systems.

**AET 360C ENTERTAINMENT SYSTEM DESIGN (Fall 2017)**

Instructor: Matt Smith

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 362C GENERATIVE MEDIA/VISUALS (Fall 2017)**

Instructor: Dax Norman

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 376 GAME CAPSTONE: 2-D (Fall 2017)**

Instructor: Paul Toprac

Abstract: Group project developing a working 2-D game.

**AET 377 GAME CAPSTONE: 3-D (Spring 2018)**

Instructor: Paul Toprac

Abstract: Group project developing a working 3-D game.

**AET 378 SENIOR THESIS I (Fall 2017)**

Instructor: N/A

Abstract: Large scale senior project.

**AET 379 SENIOR THESIS II (Spring 2018)**

Instructor: N/A

Abstract: Continuation of large scale senior project in Arts and Entertainment Technologies 378.