

GAME 2012 - Interactive Audio

Executive Summary:

This course peers into the game development cycle through the eyes of an audio professional. Learn the fundamentals of music, sound design and voice recording as it pertains to video games. Become design champions of the most underused tool in the game designer arsenal, the power of audio. As a final project, students will work toward achieving a complete audio package for a virtual game project.

Number of Hours: 42

Schedule: SEP 9 - DEC 16 9am – 12pm Saturdays

Location: HBC, Room 215

Class ID: 83875

Instructor: Marc Schaefergen

Course Description:

This course will run through the game audio development process from start to finish. Students will work with current development and audio production tools to realize audio designs. Music, sound effects, and dialog production will be covered as well as content authoring, audio implementation, and asset management. Emphasis will be put on the designer role in the audio process.

Learning Objectives:

- Utilize music, sound effects, and dialogue in video games.
- Work with common audio and game development tools to realize sonic visions.
- Discover how to listen to audio: Aesthetic analysis of music and sound, audio production techniques, and electronic sound generation.
- Implement audio directly into game development technologies: Create an immersive audio landscape by utilizing technologies such as 3D sound positioning, DSP effects, and scripted events.
- Enhance game designs by creating audio designs with regards to the holistic context of a game.
- Fully understand what is commonly perceived as sorcery, the art of storytelling through sound.

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Prerequisites:

Video Game Design I or equivalent

Course Materials (Available at the ACC Bookstore):

Required:

Cancellaro, Joseph: *Exploring Sound Design for Interactive Media* – Thomson Delmar Learning 1 edition (July 19, 2005) ISBN: 1401881025

Suggested:

Sanger, George: *The Fat Man on Game Audio: Tasty Morsels of Sonic Goodness* – New Riders Games (June 25, 2003) ISBN: 1592730094

Brandon, Alexander: *Audio for Games: Planning, Process, and Production* – New Riders Games (October 7, 2004) ISBN: 0735714134

Software (Provided on classroom workstation):

Sound Forge – Sony –

<http://www.sonymediasoftware.com/Products/ShowProduct.asp?PID=961>

Vegas – Sony – <http://www.sonymediasoftware.com/products/vegasfamily.asp>

Cinescore – Sony -

<http://www.sonymediasoftware.com/products/showproduct.asp?pid=1013>

MS Office: Word/Excel – Microsoft

Interweb:

I.A.S.I.G – <http://iasig.org>

Film Sound – <http://www.filmsound.org>

Music 4 Games – <http://www.music4games.net>

GameMusic.com – <http://www.gamemusic.com>

Harmony Central – <http://www.harmony-central.com>

KVR Audio – <http://www.kvraudio.com>

G.A.N.G. – <http://www.audiogang.org>

Mix Magazine – <http://mixonline.com>

Electronic Musician Magazine – <http://emusician.com>

Yahoo Groups

gameaudiopro@yahoogroups.com

sound_design@yahoogroups.com

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Course Syllabus:

Week 1: 09/09/06 9am – 12pm

Basics

- Reading: Cancellaro – Ch. 1: *Acoustics from the Beginning*; pp. 1 - 29
- Overview of development cycle
 - Where does audio fit in?
 - Course plan
- Concept Phase – Developing audio style
 - **Supplied Materials:** Game design docs
 - Vetting design docs for audio ramifications
 - High level audio planning
- Stereo editing – Sound Forge
 - Basic audio editing
 - Naming conventions and file organization
 - **Project:** Take long audio file with multiple takes of dialogue and edit into individual files
 - **Supplied Materials:** Dialogue recording(s)
 - Top/Tail/Fades
 - Level balance (Normalize, compression, EQ)
 - **Assignment:** Edit Dx for final delivery
- **Final Project:** Team kickoff
 - Initial project meeting
 - **Assignment:** Submit high level design document

Week 2: 09/16/06 9am – 12pm

Music

- Reading: Cancellaro – Ch. 2: *Analog Recording and Reproduction*; pp. 32 - 64
- Concept Phase – Developing audio style
 - **Final Project:** Music style
 - **Assignment:** Submit Music Style Definition document based on supplied template and game design
 - **Final Project:** SFX style
 - **Assignment:** Submit SFX Style Definition document based on supplied template and game design
 - **Final Project:** Dialogue / Cinematic style
 - **Assignment:** Submit Dialogue Style Definition document based on supplied template and game design
- Multi-track editing – Vegas
 - Music Editing I
 - Music sourcing
 - Spotting
 - Lay in tracks

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- **Guest Lecture:** Adam Kay – Music editing 101
- **Assignment:** Name 3 favorite game soundtracks and submit 350 – 500 word papers on each citing what about those soundtracks makes them so compelling. Also submit a sample recording (:30 – 1:00) from each soundtrack.

Week 3: 09/23/06 9am – 12pm

Music

- Reading: Cancellaro – Ch. 3: *Digital Audio Fundamentals*; pp. 66 - 89
- Prototype Phase – Establishing vision
 - Music
 - Music design – high level
 - **Final Project:** Music reference
 - **Assignment:** Gather reference media, movies and games
 - SFX
 - SFX design – high level
 - **Final Project:** SFX reference
 - **Assignment:** Gather reference media, movies and games
- Multi-track editing
 - Music Editing II
 - Mixing
 - Effects for creating smoother edits
 - The art of the fade
 - Music creation - Cinescore
 - Layering music chunks
 - Adding effects for color
 - Techniques for diversification
- **Project:** Create a tone video, choose from A or B
 - **Supplied Materials:** Short tone video footage sans audio
 - **Assignment A:** Edit source music to video using Vegas
 - Deliver source Vegas file and video
 - **Assignment B:** Create and edit music to video using Cinescore
 - Deliver source Cinescore file and video

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Week 4: 09/30/06 9am – 12pm

Music

- Reading: Cancellaro – Ch. 4: *The Computer and Audio*; pp. 92 - 118
- **Review:** Tone video submissions
- Prototype Phase – Establishing vision
 - Music
 - **Final Project:** Create music reference document
 - **Assignment:** Select 8 pieces of music and submit 300 – 500 words on each citing likes, dislikes, and how it fits into the music vision using reference template
 - Low energy
 - Apprehensive, foreboding
 - Creepy, terror, fright
 - Awe, wonder
 - Happiness, security, contentment
 - High energy
 - Anger, hate, disgust
 - Courageous, heroic
 - Chase – suspense, propelling
 - Alarm, shock, surprise
 - **Guest Lecture:** The Fat Man – Whatever he wants
 - **Game Analysis:** God of War – music emphasis
 - Play game section and capture
 - Play same section with music only and capture
 - **Assignment:** Submit a 750 word paper on your opinion of the effectiveness of the music. Use full audio capture for analysis reference.

Week 5: 10/07/06 9am – 12pm

Sound Design

- Reading: Cancellaro – Ch. 5: *Music Theory for Sound Designers*; pp. 122 - 151
- Prototype Phase – Establishing vision
 - SFX
 - **Final Project:** Create SFX reference document
 - **Supplied Materials:** Reference document template, list of 5 SFX categories
 - **Assignment:** Select 5 short movie clips to reference each SFX category and submit with 300 – 500 word description of likes, dislikes, and how it fits into the sonic vision using supplied template

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- Dialog / Cinematics
 - **Final Project:** Create voice style guides
 - **Supplied Materials:** Style guide template, 4 character bios
 - **Assignment:** Create and submit 4 style guides based on template, including voice samples
- **Game Analysis:** Call of Duty 2 – SFX emphasis
 - Capture gameplay segment for further analysis
 - Ambient beds
 - Player/NPC weapon SFX
 - **Assignment:** Submit a 750 word paper on your opinion of the effectiveness of one particular area of the sound design

Week 6: 10/14/06 9am – 12pm

Sound Design

- Reading: Cancellaro – Ch. 6: *Principals of Sound Design*; pp. 154 - 182
- Pre-Production Phase – Setting goals
 - Analyze scope
 - **Final Project:** Vet design docs for asset lists
 - **Supplied Materials:** Game level walkthrough, asset list templates
 - **Assignment:** Create music asset list using supplied template
 - **Assignment:** Create SFX asset list using supplied template
- Multi-track editing
 - Sound Effects Design I
 - Conceptualizing
 - Reference media
 - Sound sourcing
 - Plug-ins, sound shaping
- **Guest Lecture:** Jason Cobb – The art of content authoring
- Game Tools – Fmod Designer tool
 - Basic intro
 - Sound Definitions
 - Sound Events

Week 7: 10/21/06 9am – 12pm

Sound Design

- Reading: Cancellaro – Ch. 7: *Sound Design for the Web*; pp. 184 - 196
- **Review:** Asset list submissions
- Pre-Production Phase
 - Music / SFX
 - Refine asset lists based on feedback

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- Dialog / Cinematics
 - **Final Project:** Game dialogue script analysis
 - **Materials:** Game screenplay document
 - **Assignment:** Submit 350 – 500 word document on scope including special processing needs
- Multi-track editing
 - Sound Effects Design II
 - Layering sounds
 - Carving proper space
 - Mixing
 - Effects / Plug-ins
 - Insert / Bus
- Game Tools – Fmod Designer tool
 - Project hierarchy
 - File formats
 - Bank creation and organization
 - **Project:** FMod placeholder weapon SFX
 - **Supplied Materials:** Weapon library source material
 - Edit w/ SF to create game ready samples
 - **Assignment:** Create FMod project and sound bank
 - Weapon ready / unready
 - Fire / dry fire
 - Weapon Foley
 - Projectile fly by's and impacts

Week 8: 10/28/06 9am – 12pm – Location TBD

Sound Design

- Reading: Cancellaro – Ch. 8: Streaming and MIDI; pp. 198 - 212
- **Field Trip:** Field recording
 - Basics of gear and setup
 - Microphones
 - Selecting for purpose and tonality
 - Recorders
 - Styles, usage
 - Monitoring
 - Recording techniques
 - Limiting?
 - Pre-amps and headroom
 - Mic position
 - **Assignment:** Capture one interesting sound in your immediate environment using whatever methods you have at your disposal. Submit to class in raw or realized form
- **Final Project:** Prepare scripts for placeholder session
 - **Assignment:** Submit current script

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Week 9: 11/04/06 9am – 12pm

Sound Design

- Reading: Cancellaro – Ch. 9: *Sound in Various Environments*; pp. 214 - 227
- **Review:** Field recording submissions; FMod project
- Production Phase
 - SFX
 - Scheduling for creation and implementation
- **Project:** Weapon sound design pt. 1
 - Sample created in class
 - **Supplied Materials:** Weapon animations
 - **Assignment:** Create SFX for weapon
 - Foley
 - Ready / unready
- **Final Project:** Record placeholder dialogue
 - **Assignment:** Submit FMod project
 - Edit and prep Dx for game
 - Author Dx in FMod

Week 10: 11/11/06 9am – 12pm – **Location – ACC Recording**

Studios

Sound Design

- **Guest Lecture:** Clark Crawford – Sound design techniques
- **Project:** Weapon sound design pt. 2
 - Sample(s) created in class
 - **Supplied Materials:** Weapon animations
 - **Assignment:** Create SFX for weapon
 - Fire / dry fire
 - Fly by's and impacts
 - Replace old sound definitions in FMod project
 - Rebalance as needed
 - Add distance FX and parameters
 - Recompile banks

Week 11: 11/18/06 9am – 12pm

Music

- **Review:** Weapon SFX project
- Production Phase
 - Music
 - Schedule music creation and implementation
 - Dialogue / Cinematics
 - Prepare final game script(s)
 - Schedule recording sessions and talent
- **Guest Lecture:** Tracey Bush – Music design and stylistic choices

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- **Final Project:** Create music for gameplay segment
 - Sample(s) created in class
 - **Materials:** Gameplay walkthrough document
 - **Assignment:** Create original music for gameplay segment using Cinescore
 - Minimum of 3 minutes consisting of no longer than :45 loop-able sections

Week 12: 12/02/06 9am – 12pm? – **Location – Midway**

Dialogue

- **Final Project:** Record dialogue for gameplay segment
 - **Materials:** Final script
 - **Assignment:** Submit final dialogue in FMod
 - Record Dx on site during class
 - Edit and prep Dx for game
 - Author Dx in FMod
- **Final Project:** Final audio implementation
 - **Assignment:** Complete all audio implementation

Week 13: 12/09/06 9am – 12pm

Mixing

- **Review:** Music for final project; Dx recordings and out-takes
- Alpha/Beta Phase
 - Plan and schedule final mix
- **Guest Lecture:** Randy Buck – Mixing and perspective or Sound opportunities for game design
- **Final Project:** Final mix and polish
 - Mix passes will start during class
 - **Assignment:** Complete polish and final mix

Week 14: 12/16/06 9am – 12pm

Final Submission

- Present Final Projects

Final Project Assignments: 18

Project Assignments: 9

All assignments are due by the beginning of the next class and can be handed in then or emailed to the instructor. Final grade is determined by the following...

25% – Final Project
30% – Final Project Assignments
35% – Project Assignments
10% – Class Participation

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Video Game Development Program Philosophy:

The Video Game Development Program has been designed, developed and implemented in partnership with leading video games studio managers and directors in Austin. The video games industry has undergone significant changes in how games are developed. They are rarely developed by few persons working in isolation. Today's games are often developed by teams of 50 to 200 on schedules from 2 to 3 years with budgets of \$10M to \$20M. The large publishers drive the game development funding and schedules. Consequently, it is critical that personnel in the industry communicate and collaborate effectively. This drove the certificate requirements definition. Students are required to successfully complete courses in four categories:

1. The base industry courses: Video Games Industry, Business of Video Games and Video Games Development.
 - a. Students will understand what drives the industry, why games are developed, what is needed for success and how to get from idea to delivery.
2. The course specialization courses: Video Game Programming, Video Game Art, Video Game Design and Video Game Production.
 - a. Students will understand the requirements, objectives, limitations and goals of the different disciplines in a studio. This is essential for communication and collaboration.
 - b. Students in these core courses will be cross-discipline in order to build an understanding and appreciation of how different discipline teams collaborate and contribute to the final product.
3. The five specialization electives.
 - a. Students will develop skills in the discipline in which the student will seek employment.
4. Non-specialization electives
 - a. These are optional courses that will give you a deeper understanding of what other disciplines do and how they function. They will help you understand how to work with others on the team and to get the 'big picture.' These courses do not count towards the Video Game development certificate.
5. Capstone Project
 - a. This multi-person team project will simulate the real video game development environment. Students will develop a concept, turn it into a design, implement the programming and art required and produce it on the committed schedule. Go/no go milestones and final "publisher" acceptance reviews will mimic the industry. The students will have a deliverable for their portfolio that can be used for employment purposes.

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Throughout the program each course will focus on knowledge transfer, skill building and teamwork. There will be a heavy emphasis on projects that will broaden and deepen each student's portfolio development. Portfolios are critical to demonstrating an individual's capabilities. Some projects will individual, many will be team based. How much a student gets out of each course will largely be determined by how much the students puts into the course. Video game development is highly complex, difficult work. The courses are designed to prepare students for that environment. So, come expecting to work hard.

The program is designed to reinforce key concepts such as teamwork, collaboration, and cooperation across all disciplines in the games development and management process. Many concepts are repeated throughout the program because they are extremely important to successful game development.