COURSE OUTLINE

Course Number  Course Title  Credits
GAM 240  Game Design II  3

Hours:  Co- or Pre-requisite  Implementation
1 Lecture/ 4 lab  GAM 140 or permission of instructor  Fall 2011

Catalog description (2006-2009 Catalog):
GAM 240  Game Design II  3 credits
Pre-requisite:  GAM 140
Emphasis on prototyping and level-building of game design concepts expands on topics explored and skills
developed in Game Design I.  Additional topics include content importing and configuration, mapping, lighting,
physics, and scripted interactions.
1 lecture/4 laboratory hours

Is course New, Revised, or Modified?
This course is the third in a series of four courses to support the Game Design program.

Required texts/other materials:

Game Development with Unity, by Michelle Menard, Course Technology (Cengage Learning), ISBN: 1435456580

Revision date:  Course coordinator:  (Name, telephone number, email address)
March 30, 2011  Game Design Coordinator Ric Giantisco, x3458, giantisr@mccc.edu

Information resources:
• International Game Developers Association:  http://www.igda.org/
• Gamasutra.com
• GameDev.net
•

Other learning resources:
• Unreal Development Kit
• Standard Graphics Software such as the Adobe Creative Suite and Autodesk products
• 3D World Magazine
• Microsoft Office suite
• Game lab ES 129/130

MCCC Course Outline; Approved by the Curriculum Committee 12/6/07
Course Competencies/Goals:

The student will be able to:
1. Build prototypes to test game design concepts
2. Design and build game levels in Unity 3D and apply textures, lighting, and simple physics
3. Design concepts for digital games
4. Design and develop appropriate 2d graphics for games
5. Design and develop appropriate 3d graphics for games
6. Critique Mechanics, Dynamics, Aesthetics of game concepts and prototypes effectively
7. Create Sales pitches for games
8. Produce a complete game design document

Course-specific General Education Knowledge Goals and Core Skills.

General Education Knowledge Goals
Goal 1. Communication. Students will communicate effectively in both speech and writing.
Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.
Goal 6. Humanities. Students will analyze works in the fields of art, music, or theater; literature; philosophy and/or religious studies; and/or will gain competence in the use of a foreign language.

MCCC Core Skills
Goal A. Written and Oral Communication in English. Students will communicate effectively in speech and writing, and demonstrate proficiency in reading.
Goal B. Critical Thinking and Problem-solving. Students will use critical thinking and problem solving skills in analyzing information.
Goal D. Information Literacy. Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.
Goal E. Computer Literacy. Students will use computers to access, analyze or present information, solve problems, and communicate with others.
Goal F. Collaboration and Cooperation. Students will develop the interpersonal skills required for effective performance in group situations.

Units of study

Unit I - Flowcharts & Design
This unit of study focuses on the design and layout of playable levels in a video game. The focus will be on learning how to develop fun, organic, and immersive environments. Students will gain experience with game industry software and develop skills in design, layout, and efficiency.

Learning objectives:
The student will be able to....

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i. Apply research to the development of visual concepts  
ii. Produce 2D maps and navigation flowcharts for game levels  
iii. Describe and represent NPC and obstacle dynamics  
iv. Critique work from self and others meaningfully  
v. Explain and address potential problems and limitations

**Unit II - Paper Prototyping**

Students will focus on constructing a select group of game level designs through creative iterations of several paper prototypes. Further development of skills in critical analysis, testing, reviewing, time management, and design efficiency will be learned.

**Learning objectives:**  
The student will be able to....

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i. Create 2D maps and paper prototypes of players, obstacles, and enemies.  
ii. Develop prototypical mechanics and dynamics to simulate game play  
iii. Describe and represent NPC and obstacle dynamics  
iv. Critique work from self and others meaningfully  
v. Explain and address potential problems and limitations

**Unit III - Unity 3D Level Design**

This unit will focus on creating a two level game within the Unity3D game engine. Students will continue to develop mastery of their skills in Autodesk Maya, Adobe Photoshop, and the Unity 3D engine. Students will develop skills in modeling, texturing, and UV mapping specific for gaming. In addition students will gain more experience with the Unity 3D game engine.

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i. Model low poly and high poly assets for Unity 3D game engine  
ii. Create simple 3D animation sequences for Unity 3D game engine  
iii. Import assets into Unity 3D game engine.  
iv. Critique work from self and others meaningfully  
v. Create textures and normal maps for Unity 3D game engine  
vi. Construct 3D terrain in Unity 3D engine
vii. Compose a professional sale pitch for a game concept

**Evaluation of student learning:**
**Learning Activities:**
- Lectures - each 50 minutes:
  - Level Design
  - Interface Design/ Flowcharting
  - Prototyping- paper/interactive
  - Game play Mechanics
  - Historical Game Research
  - Mechanics, Dynamics and Aesthetics
  - Game Mods
  - HCI/ Serious Games
  - Concept Development
  - Interactive Narrative
  - Storyboard Creation
  - Visual Design
  - Unity 3D
  - Game Development/ Audio Design

- Reading Assignments – see required books and daily class schedule for reading assignments
- Lab Activities
- Tutorials/ Software Demos: Autodesk Maya, Unity 3D, Photoshop, Google SketchUp
- 3 Studio Projects: see below

**Grading Calculations:**

- **20% Attendance and participation** in discussion, lab activities and critique. More than 5 days absent will result in no credit for attendance and participation unless special arrangements for makeup work have been established with the instructor.

- **70% Projects:** 3 projects are averaged together for total project grade
  - **Project 1: Multiple Level Flow Chart** - Design and layout 6 cohesive game levels using Google SketchUp/Adobe Photoshop and Microsoft Word/Excel.  
    **Criteria for assessment:** Clear evidence of creative thinking applied to develop concept for the game; design principles and elements are effectively used to create a solid game mechanics and core experience. Player navigation and encounters are clearly defined.
  
  - **Project 2: Paper Prototypes of 3 Adjacent Game Level Designs** -  
    **Criteria for assessment:** Clear evidence of creative thinking applied to develop concept for the game; Design principles and elements are effectively used to create a solid game mechanics and core experience. Game is playable. Player navigation and encounters are clearly defined.
  
  - **Project 3: Build a working game with 2 different playable levels** -  
    **Criteria for assessment:** Clear evidence of creative thinking applied to develop concept for the game; Effective use of paper prototyping to refine the game concept in an iterative process; Design principles and elements are effectively used to create a solid game aesthetic; Character development and the interactive narrative arc is clearly defined; Effective use of 3D elements and level design; Game prototype indicates game is "playable" and interesting.

- **10% Practical exams** – Skills based exams where students must replicate specific outcomes to measure level of learning from tutorials and demos.
**Academic Integrity Statement:**
Students are expected to comply with the college-wide requirements for academic integrity. Mercer County Community College is committed to Academic Integrity—the honest, fair, and continuing pursuit of knowledge, free from fraud or deception. This implies that students are expected to be responsible for their own work. Presenting another individual’s work as one’s own and receiving excessive help from another individual will qualify as a violation of Academic Integrity. The entire policy on Academic Integrity is located in the Student handbook and is found on the college website:

www.mccc.edu/admissions_policies_integrity.shtml

**Special Needs Accommodations**

Any student in this class who has special needs because of a disability is entitled to receive accommodations. Eligible students at Mercer County Community College are assured services under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. If you believe you are eligible for services, please contact Arlene Stinson, Director of Academic Support Services. She can be reached at 609-570-3525.