# COURSE OUTLINE OF RECORD

**Number:** CS G150  
**TITLE:** Mobile Game Programming

<table>
<thead>
<tr>
<th>ORIGINATOR: Omid Pourzanjani</th>
<th>EFF TERM: Spring 2008</th>
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<tbody>
<tr>
<td>FORMERLY KNOWN AS:</td>
<td>DATE OF OUTLINE/REVIEW: 04-27-2006</td>
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<tr>
<td>CROSS LISTED COURSE:</td>
<td>TOP NO: 0614.20</td>
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<tr>
<th>SEMESTER UNITS: 4.0</th>
<th>CID:</th>
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<tr>
<td>HRS LEC: 54.0</td>
<td>HRS LAB: 54.0</td>
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<tr>
<td>CONTACT HRS TOTAL: 108.0</td>
<td>HRS OTHER: 0.0</td>
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<tr>
<td>STUDY NON-CONTACT HRS RECOMMENDED: 108.0</td>
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**CATALOG DESCRIPTION:**
This course will cover the principles of video game development for mobile devices. Students will be introduced to the basic building blocks of mobile platforms and the tools and components available for developing video games for these platforms. Concepts of graphics libraries, simulation tools, debugging facilities, memory and performance limitations, and development methodologies will be discussed and practiced.

**JUSTIFICATION FOR COURSE:**

**PREREQUISITES:**

**COREQUISITES:**

**ADVISORIES:**
- CS G148: Game Programming, Intermediate

**ASSIGNED DISCIPLINES:**
- Computer science

**MATERIAL FEE:** Yes [ ] No [X] Amount: $0.00

**CREDIT STATUS:** Noncredit [ ] Credit - Degree Applicable [X] Credit - Not Degree Applicable [ ]

**GRADING POLICY:** Pass/No Pass [X] Standard Letter [X] Not Graded [ ] Satisfactory Progress [ ]

**OPEN ENTRY/OPEN EXIT:** Yes [ ] No [X]

**TRANSFER STATUS:** CSU Transferable[X] UC/CSU Transferable[ ] Not Transferable[ ]

**BASIC SKILLS STATUS:** Yes [ ] No [X] LEVELS BELOW Transfer: Not Applicable

**CALIFORNIA CLASSIFICATION CODES:** Y - Not Applicable

**NON CREDIT COURSE CATEGORY:** Y - Not applicable, Credit Course

**OCCUPATIONAL (SAM) CODE:** C

**REPEATABLE ACCORDING TO STATE GUIDELINES:** No [X] Yes [ ] NUMBER REPEATS:

**REQUIRED FOR DEGREE OR CERTIFICATE:** No [ ] Yes [X]
- Video Game Development(Associate in Arts)
- Video Game Development(Certificate of Achievement)

**GE AND TRANSFER REQUIREMENTS MET:**

**COURSE LEVEL STUDENT LEARNING OUTCOME(S) Supported by this course:**
1. Explain the component internals of mobile games and the interactions of these components.
2. Describe the current state of the mobile game environment.
3. Compare and contrast the current design tools, development environments, debugging facilities and deployment packages.

COURSE OBJECTIVES:
1. Demonstrate an understanding of the current state of mobile games.
2. Compare and contrast the functionality in the existing mobile gaming engines.
3. Demonstrate knowledge of current and popular mobile gaming engines.
4. Apply the theory and principle of the mathematical algorithms as optimized for mobile platforms.
5. Apply theoretical knowledge with hands-on lab assignments for drawing primitive objects and animating them.
6. Integrate sound and animation into the fabric of a computer game.
7. Design interactivity specific to small mobile devices.

COURSE CONTENT:

LECTURE CONTENT:
The following outline describes the course contents:

Essentials Of Mobile Gaming
  oThe Market And Culture For Mobile Games
  oGetting To Know Mobile Platforms
  oJava 2 Micro Edition (J2ME)
  oBinary Runtime Environment For Wireless (BREW)
  oWindows Mobile Smartphone

Mobile Game Programming Essentials
  oMobile Graphics Basics
  oLearning The Basics Of Color
  oWorking With Graphics In J2ME
  oDrawing Graphics Primitives
  oDrawing Text
  oDrawing Images
  oUsing Sprite Animation.
  oBasics Of Artificial Intelligence (AI)

Handling Mobile User Input
  oHandling Key Input With The Gamecanvas Class
  oDetecting Sprite Collisions
  oWorking With Frame-Animated Sprites

Making Noise with Tones
  oQuerying A Phone For Its Audio Capabilities
  oPlaying Tones In Mobile Games
  oPlaying Digitized Sound And Music.
  oPlaying Wave Sounds In Mobile Games

Taking Advantage of the Wireless Network
  oMultiplayer Game Basics
  oNetwork Game Problems And Solutions
  oCommunicating Over A Network With Sockets

Debugging and Deploying Mobile Games
In the lab section, students will be required to complete the following assignments:
   1. Mobile Game-Engine Research Paper
   4. Programming Assignments
   1. Individual or Group Term-Project

METHODS OF INSTRUCTION:

A. Lecture:
B. Lab:
C. Online:
D. Independent Study:

INSTRUCTIONAL TECHNIQUES:

COURSE ASSIGNMENTS:

Reading Assignments
Students will be assigned multiple chapters from the required textbook. The availability of additional materials will be made known to students to encourage further study into specific topics. Students will be assigned to read a large amount of online material. Various current (up-to-date) handouts will be made available to students on the subjects of mobile games, game engines, and multimedia.

Out-of-class Assignments
An optional library research paper will promote further study and research in interactive mobile game development or other related topics selected by the student and approved by the instructor.

Writing Assignments
Students will be required to write the game-play and high-level design for a specific game. They will then use this design document in implementing the game. The implementation process is an extensive series of problem solving tasks involving the integration of student-written algorithms, rules, and logic with off-the-shelf code-libraries.

METHODS OF STUDENT EVALUATION:

Midterm Exam
Final Exam
Short Quizzes
Written Assignments
Essay Examinations
Objective Examinations
Report
Projects (ind/group)
Problem Solving Exercises
Oral Presentations
Skills Demonstration

Demonstration of Critical Thinking:

Class assignments will be presented to the students in the form of problems requiring students to devise solutions in the form of software development projects. Also, students will be given various games engine technology architectures to study and analyze.
Required Writing, Problem Solving, Skills Demonstration:

Students will be required to write the game-play and high-level design for a specific game. They will use this design document in implementing the game. The implementation process is an extensive series of problem solving tasks involving the integration of student-written algorithms, rules, and logic with off-the-shelf code-libraries.

TEXTS, READINGS, AND RESOURCES:

TextBooks:

Other:
1. A syllabus and multiple reference materials will be distributed by the instructor.

LIBRARY:

Adequate library resources include:

Comments:

Attachments:

[Attached Files]