Course Syllabus
Game Programming for Non-Programmers
GAME 1372

Semester with Course Reference Number (CRN)
FALL 2011
CRN 57934

Instructor contact information (phone number and email address)
Ian Mayer
713-718-6743
ian.mayer1@hccs.edu

Office Location and Hours
TBA
Friday: 4-8pm
By Appointment Only

Course Location/Times
Westloop Campus
Room C125
T/TH
9am – 12pm

Course Semester Credit Hours (SCH) (lecture, lab) if applicable
Credit Hours 3.00
Lecture Hours 2.00
Laboratory Hours 4.00
External Hours

Total Course Contact Hours
96.00

Continuing Education Units (CEU): if applicable

Course Length (number of weeks) 16

Type of Instruction
Lecture/Lab

Course Description:
Examines the role of a programmer in the development of a game and translation of game design to code. Includes hands-on programming using a high level language.

Course FREQUENT REQUISITES
### Prerequisite(s)
- ENGL 0310 or 0349
- Departmental approval
- GUST 0341 (7th -9th Grade Reading)
- MATH 0312 (Intermediate Algebra)

### Academic Discipline/CTE Program Learning Outcomes

<table>
<thead>
<tr>
<th>Course Student Learning Outcomes (SLO): 4 to 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prepare a design document for a solo game</td>
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<tr>
<td>2. Develop a game or simulation based on the solo design documentation</td>
</tr>
<tr>
<td>3. Jointly develop the design documentation for a team project</td>
</tr>
<tr>
<td>4. Develop a game or simulation based on the team design documentation</td>
</tr>
</tbody>
</table>

### Course Student Learning Outcomes (SLO): 4 to 7

1. Use a programming language to develop a game
2. Perform industrial game programming techniques
3. Summarize capabilities and limitations of programming video games.

### Learning Objectives

- Use a programming language to develop a game
- Perform industrial game programming techniques
- Summarize capabilities and limitations of programming video games.

### SCANS and/or Core Curriculum Competencies: If applicable

- **SCANS**
  - Use a programming language to develop a game
  - Perform industrial game programming techniques
  - Summarize capabilities and limitations of programming video games.

- **Workplace Competencies - Technology -Selects Technology**
  - Workplace Competencies - Technology -Selects Technology
  - Workplace Competencies - Technology -Selects Technology

- **Workplace Competencies - Technology -Applies Technology to Task**
  - Workplace Competencies - Technology -Applies Technology to Task
  - Workplace Competencies - Technology -Applies Technology to Task

- **Workplace Competencies - Information -Acquires & Evaluates**
  - Workplace Competencies - Information -Acquires & Evaluates
  - Workplace Competencies - Information -Interprets & Communicates

### Instructional Methods

- Web-enhanced (49% or less)
- Face to Face

### Student Assignments

- **Use a programming language to develop a game**
  - Create basic games using C++ and a 2D rendering library.

- **Perform industrial game programming techniques**
  - Learn about introductory topics such as collision detection and
Motion in 2 dimensions.

Summarize capabilities and limitations of programming video games.

- In-Depth Discussions on current industry limitations such as hardware and software developments.

Student Assessment(s)

Use a programming language to develop a game

Group and/or individual projects
In-class discussions
Various assigned readings from textbooks

Perform industrial game programming techniques

Group and/or individual projects
In-class discussions
Various assigned readings from textbooks

Summarize capabilities and limitations of programming video games.

Group and/or individual projects
In-class discussions
Various assigned readings from textbooks

Instructor's Requirements

Program/Discipline Requirements: If applicable

- Students are expected to be on time for class.
- If a student is absent for any reason, it is the student’s responsibility to find out what was covered in class.
- Students will be expected to develop programs where some will be games and simulations using C++. A lot of self-motivation and enthusiasm is needed to complete the work.
- Students are not expected to buy their own software. The open lab has all the software needed for the students to complete the work. It is the responsibility of the students to use class time wisely and if work is not completed they are expected to go to open lab and complete the work.
- TURN OFF cell phones. Students caught using cell phones WILL lose class participation points.
- NO surfing the web unless for class work. Students caught surfing the web WILL lose class participation points.
- Students will be expected to turn in all work with profession quality.
- Students will be expected to be self-motivated and enthusiastic about the work to be completed.
- Students will be expected to be encouraging and professional at all times.
- Students will be expected to be in professional attire for all presentations.
- Students are expected to respect constructive comments from peers.

HCC Grading

A = 100-90
4 points per semester hour
**Scale**  

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points per Semester Hour</th>
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<tbody>
<tr>
<td>B = 89 - 80:</td>
<td>3 points</td>
</tr>
<tr>
<td>C = 79 - 70:</td>
<td>2 points</td>
</tr>
<tr>
<td>D = 69 - 60:</td>
<td>1 point</td>
</tr>
<tr>
<td>59 and below = F</td>
<td>0 points</td>
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<tr>
<td>IP (In Progress)</td>
<td>0 points</td>
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<tr>
<td>W(Withdrawn)</td>
<td>0 points</td>
</tr>
<tr>
<td>I (Incomplete)</td>
<td>0 points</td>
</tr>
<tr>
<td>AUD (Audit)</td>
<td>0 points</td>
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</tbody>
</table>

IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses. To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades "IP," "COM" and "I" do not affect GPA.

For Health Science programs, see the Program/Discipline Requirements section for specific grading requirements.

**Instructor Grading Criteria**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>In Class Assignments</td>
<td>50</td>
</tr>
<tr>
<td>Homework</td>
<td>20</td>
</tr>
<tr>
<td>Midterm</td>
<td>15</td>
</tr>
<tr>
<td>Final</td>
<td>15</td>
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**Instructional Materials**

Graph Paper  
External Hard drive

**HCC Policy Statement:**

Access Student Services Policies on their Web site: [http://hccs.edu/student-rights](http://hccs.edu/student-rights)

**EGLS3 -- Evaluation for Greater Learning Student Survey System**

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time near the end of the term, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and department chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.

**Distance Education and/or Continuing Education Policies**


Access CE Policies on their Web site: [http://hccs.edu/CE-student-guidelines](http://hccs.edu/CE-student-guidelines)
### COURSE CALENDAR

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Introduction to Computer Science</td>
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<tr>
<td>Week 2</td>
<td>Variables and Program Flow</td>
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<td>Week 3</td>
<td>Variables and Control Structures</td>
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<tr>
<td>Week 4</td>
<td>Control Structures</td>
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<tr>
<td>Week 5</td>
<td>Functions</td>
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<tr>
<td>Week 6</td>
<td>Functions</td>
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<tr>
<td>Week 7</td>
<td>Arrays</td>
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<tr>
<td>Week 8</td>
<td>Arrays</td>
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<tr>
<td>Week 9</td>
<td>Pointers and Structures</td>
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<tr>
<td>Week 10</td>
<td>2D Game Programming</td>
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<td>Week 11</td>
<td>2D Game Programming</td>
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<td>Week 12</td>
<td>2D Game Programming</td>
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<td>Week 13</td>
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<td>Week 14</td>
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<td>Week 15</td>
<td>2D Game Programming</td>
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<td>Week 16</td>
<td>2D Game Programming</td>
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