Spring 2012

CS 399: iPhone Programming II

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I. Unit
College/School: College of Engineering & Computer Science
Department: Computer Science

II. Course Information
Course Title: iPhone Programming II
Course Abbreviation and Number: CS 399
Course Credit Hours: 4
Course Cross Listing(s) Abbreviation/Number:

Check (“x”) all applicable:
General Education Course_____ Writing Intensive Course____
Service Learning Course____
Laboratory Course____ Ohio TAG (Transfer Assurance Guide) Course____
Ohio Transfer Module Course____
Others (specify)____

III. Course Registration
Prerequisites: CS 399 « iOS Programming I »
Corequisites: None
Restrictions: None
Other: or by permission of instructor
IV. Student Learning Outcomes
Students will develop:

- additional competency developing software for iOS devices including any of iPhone, iPod Touch, or iPad
- understanding of framework, language, and operating system support for multi-threaded programming
- understanding of robust network communication approaches
- understanding of sensors and location technologies with tradeoffs for accuracy, speed, and user privacy
- competency integrating sensors, image processing, and networking to implement augmented reality applications.

V. Suggested Course Materials (required and recommended)
Recommended: an iOS device (iPhone, iPod Touch, or iPad). (Software development and test using a simulator is available for students without access to an iOS device.)


Recommended: (For students who wish to publish applications via the Apple iTunes App–store) “iOS Developer Program” subscription http://developer.apple.com/programs/

VI. Suggested Method of Instruction
Lecture.

VII. Suggested Evaluation and Policy
50% Course Projects (4)
30% Midterm examinations (0) / Quizzes (0) / Homework(10)
20% Final examination

VIII. Suggested Grading Policy
Grades will be assigned on a standard A/90%, B/80%, C/70%, D/60%, F/60%– scale. Students must demonstrate competency (70% total average) on the programming projects in order to pass the class.
IX. Suggested Assignments and Course Outline

Projects: Projects demonstrate multi-threaded programming, networking, "cloud" based data storage, advanced sensors including gyroscope, Apple's Game Kit, image processing, and augmented reality.

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<thead>
<tr>
<th>Modules</th>
<th>Topic</th>
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<tbody>
<tr>
<td>01</td>
<td>Review of iOS application architecture</td>
</tr>
<tr>
<td>02</td>
<td>Introduction to multi-threaded programming (how does it work; what can go wrong); Concepts of thread safety</td>
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<tr>
<td>03</td>
<td>Tool, framework, language, and system support for multi-threading; Best practices and guidelines</td>
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<tr>
<td>04-05</td>
<td>Network programming and &quot;cloud&quot; based data storage</td>
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<tr>
<td>06-07</td>
<td>Available hardware sensors (capabilities, limitations, restrictions); Implications for user privacy; Location based services</td>
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<tr>
<td>08</td>
<td>Apple’s Game Kit for networked games; Template for other forms of networked collaboration between users</td>
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<tr>
<td>09-10</td>
<td>iOS support for image processing; Related signal processing</td>
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<tr>
<td>11</td>
<td>iOS support for 2D graphics, custom user interfaces, animation</td>
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<tr>
<td>12</td>
<td>iOS support for 3D graphics, 3D sound, and animation</td>
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<tr>
<td>13-14</td>
<td>Augmented reality</td>
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X. Other Information

N/A