<table>
<thead>
<tr>
<th><strong>Course name</strong></th>
<th>ECE 57101 System Modeling and Design for Smart Devices (ECE 595)</th>
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<tbody>
<tr>
<td><strong>Credit and contact hours</strong></td>
<td>(3 cr.) Class 3</td>
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<tr>
<td><strong>Course coordinator’s name</strong></td>
<td>Dongsoo S. Kim</td>
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2. Selected published papers related to mobile computing, wireless communication, context-aware computing, location-based services, sensor networks, and human-computer interaction. |
| **Course information** | **2014-16 IUPUI Campus Bulletin description:**  
ECE 57101 System Modeling and Design for Smart Devices. (3 cr.) Class 3. P or C: Graduate standing or consent of instructor. Introduction to the mobile computing and the principles to design and implement application system for a smart device, including mobile computing architecture, mobile and pervasive computing environments, applications and services, context-aware computing, and human-computer interaction.  

**Prerequisites/ Co-Requisite**  
Graduate standing or consent of instructor  

**Required, Elective, or Selected Elective:**  
EE Elective, CE Elective |
| **Goals for the course** | Upon successful completion of the course, students should be able to  
1. To understand a variety of mobile computing technologies, properties and challenges. [k]  
2. To develop an application for a smart device. [c]  
3. To analyze and adapt a problem to the environment of mobile computing and smart devices. [c, k] |
| **List of topics to be covered** | 1. Introduction to a smart device and mobile computing: architecture, hardware, operating systems, software development environment (2 classes)  
2. Components for mobile system developments: languages, the concept of operating systems for hand-held devices and virtual machines (4 classes)  
3. The concept of system modeling, analysis and design: classification, structure and behavior. (4 classes)  
5. Smart devices and services: service architecture and provision (4 classes) |
6. Communication networks for smart devices: IP, IPv6, VOIP, WAP (4 classes)
7. Context awareness: mobility awareness (motion and gesture), spatial (location based services) awareness and temporal awareness (4 classes)
8. Exams (1 classes for midterm and final exam period)

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<tr>
<th>Syllabi approved by</th>
<th>Dongsoo S. Kim</th>
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<td>Date of approval</td>
<td>04/21/2016</td>
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