

<b>Course Name:</b>	<b>ECE 57101 System Modeling and Design for Smart Devices</b>
<b>Credit and contact hours:</b>	(3 cr.) Class 3
<b>Course coordinator's name</b>	Dongsoo S. Kim
<b>Textbook</b>	<ol style="list-style-type: none"> <li>1. Stefan Poslad, "Ubiquitous Computing: Smart Devices, Environments and Interaction," Wiley, 2009, ISBN-10: 0470035609, ISBN-13: 978-0470035603</li> <li>2. Selected published papers related to mobile computing, wireless communication, context-aware computing, location-based services, sensor networks, and human-computer interaction.</li> </ol>
<b>Course information</b>	<p>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.</p> <p><b>Prerequisites/ Co-Requisite</b> Graduate standing</p> <p><b>Required, Elective, or Selected Elective:</b> EE Elective, CE Elective</p>
<b>Goals for the course</b>	<p>Upon successful completion of the course, students should be able to</p> <ol style="list-style-type: none"> <li>1. To understand a variety of mobile computing technologies, properties and challenges. [1,2,6]</li> <li>2. To develop an application for a smart device. [2]</li> <li>3. To analyze and adapt a problem to the environment of mobile computing and smart devices. [1,2,6]</li> </ol>
<b>List of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Introduction to a smart device and mobile computing: architecture, hardware, operating systems, software development environment (2 classes)</li> <li>2. Components for mobile system developments: languages, the concept of operating systems for hand-held devices and virtual machines (4 classes)</li> <li>3. The concept of system modeling, analysis and design: classification, structure and behavior. (4 classes)</li> <li>4. User interfaces. Interaction: human-computer interaction, human-to-human interaction, human-physical world interaction, machine-to-machine interactions (4 classes)</li> <li>5. Smart devices and services: service architecture and provision (4 classes)</li> <li>6. Communication networks for smart devices: IP, IPv6, VOIP, WAP (4 classes)</li> </ol>

	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)
<b>Syllabi approved by</b>	Dongsoo S. Kim
<b>Date of approval</b>	03/01/2022