

## ECEn 427. Embedded Systems

<b>Catalog Description:</b>	<b>ECEn 427. Embedded Systems. (4:3:3) F</b> Interfacing digital hardware components to an embedded system processor. Developing the hardware-software interface. Developing application software. Using C and assembly language in device-driver design, monitor-debugger, and real-time kernel.	
<b>Course Type:</b>	Engineering Topics	
<b>Prerequisites:</b>	ECEn 320, ECEn-CS 324	
<b>Textbooks and/or other required materials</b>	All materials are online and accessible from the web.	
<b>Topics Covered:</b>	Processor interfaces, busses (coreconnect), DMA, addressing, video, GPIO, sound generation.	
<b>Course Competencies:</b>	Ability to design a bus-based digital I/O device.	Outcome 1
	System design project integrating custom bus-based digital I/O device.	Outcome 1
	Ability to interface to a processor or I/O bus.	Outcome 3
	Ability to read and interpret device specifications (data sheets) in order to integrate a device within a microprocessor based system.	Outcome 3
	Ability to use DMA for a high-bandwidth I/O device.	Outcome 11
<b>Schedule:</b>	Lectures: One hour MWF Laboratory: Open TA Recitations: One hour per week.	
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<b>Date:</b>	June 24, 2008	