

# ESE 350 Embedded Systems/Microcontroller Laboratory

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**Labs:** This course focuses heavily on learning by doing. Readings, lectures, and discussions serve to support the main concepts of the laboratory exercises while pre-lab quizzes, laboratory reports, and exams ensure that the concepts are well understood.

Labs are performed in groups with each group consisting of at least one EE/CTE major and one Systems major. Each member of a group must participate in the labs, be present during demonstrations, and submit a separate written lab report with only code listings and circuit diagrams allowed to be shared.

**Tentative Schedule:**

<b>Week</b>	<b>Reading</b>	<b>Lecture</b>	<b>Lab</b>
1/14	Ch. 1 Sec. 2.1-2.4, App. A	Introduction to HC11 Assembly	Form lab groups
1/21	Ch. 4	C & ICC11 Compiler HC11 Evaluation Board (No class-1/21)	Lab sessions begin
1/28	Sec. 7.1-7.5, 7.8-7.11	Interfacing HC11	
2/4	Sec. 3.1-3.3, 3.6-3.10 Sec. 6.1-6.4, 6.7	Stack & Subroutines Interrupts	Lab 1-Switching Lights due
2/11	Sec. 8.1-8.5	Timer & Input Capture	
2/18	Sec. 8.6-8.9	Output-Compare	Lab 2-Morse Code Detector due
2/25		Midterm Exam	
3/3	Sec. 9.1-9.5	Serial Communication Interface Motors & Pulse Width Modulation	Lab 3-Musical Keypad due
3/10		Spring Break	
3/17		Feedback	
3/24	Ch. 11	Analog-to-Digital Converter	Lab 4-Motor Controller due
3/31	Ch. 5	Operation Modes & Memory	
4/7	App. B	Microcontroller Projects	Lab 5-Sound Meter due
4/14		TBD	
4/21		Presentations	Final Project demonstrations