



العدد :

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Course number and name	EE 4510: Microcontroller Applications
Credits and contact hours	3 credits and 3 hours
Course coordinator	
Textbook	HCS12/9S12 An Introduction to Software & Hardware Interfacing (2nd Edition), Huang, 2010, Delmar (Cengage Learning) MicroC/OS – II the Real Time Kernel, (2nd Edition), Jean L. Labrosse, 2002, CMP Books Introduction to Embedded Microcomputer Systems: Motorola 6811 and 6812 Simulation, Jonathan W. Valvano, 2003, Thomson
Course Information	a. Prerequisites: EE 2200 Electronics I and EE 2510 Introduction to Microprocessors b. Selective Elective
Topics to be covered	<ul style="list-style-type: none"> – Introduction to the Motorola HC12/HS12 Microcontroller Families – MC9S12DP512 architecture and memory map – CPU12 Programmer's Model and assembly language programming – Development of C programs for the MC9S12DP512 – Interfacing to the Parallel I/O Ports, MC9S12DP512 Interrupts – Programming the Main Timer, Input Capture and Output Compare – Programming the PWM Module – Analog Input and Output Interface – Serial Communications Interface Design – SPI Interface – CAN Interface – Interfacing Static Memory to the MC9S12DP512 External Bus – Design of 8 or 16-Bit Memory Modules, Critical Timing Analysis