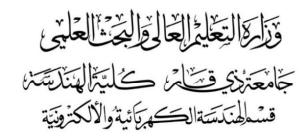
## Ministry of Higher Education and Scinetific Research Thi-Qar University Collage of Engineering Electrical and Electronic Engineering Dept





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Course number and name **EE 4510: Microcontroller Applications** 3 credits and 3 hours **Credits and contact hours Course coordinator** 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. **Textbook** Labrosse, 2002, CMP Books Introduction to Embedded Microcomputer Systems: Motorola 6811 and 6812 Simulation, Jonathan W. Valvano, 2003, Thomson a. Prerequisites: EE 2200 Electronics I and EE 2510 Introduction to **Course Information Microprocessors** b. Selective Elective 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 Topics to be covered 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

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