University of Technology

Computer Engineering Department

Academic Year 2016 - 2017

Forth Year – 2nd Semester – IE & CN

code	Embedded Systems	2 Hours/Week	2 Units

Contents of Syllabus	Hours
1- Introduction to Embedded Systems	2
2- 8051 Microcontroller - Features of 8051 - 8051 Hardware - Memory organization in 8051 - I/O pins, ports, and circuits - Timers and Counters - Serial port - Interrupt structure - Clock and Oscillator - Power saving options	8
3- Instruction Set. - Addressing modes - Data moving instructions - Logical Instructions - Arithmetic Instructions - Jump and Call Instructions	4
4- 8051 Programming - Assembly Language Programming - Counter/Timer Programming - Serial communication programming - Interrupt Programming	8
5- 8051 Microcontroller Interfacing. - Interfacing external RAM and ROM - Expansion I/O using 8255 PPI - Keyboard Interfacing - Display interfacing (LED, 7-segments, dot matrix, and LCD) - DAC Interfacing - ADC Interfacing - Stepper motor Interfacing	8

Text books:-

1- A. P. Godse and D. A. Godse "Microprocessor and Microcontroller" Third Edition, 2009
2- . Muhammed Ali Mazidi, Janice Gillispie Mazidi and Rolin D. McKinlay, "The 8051 Microcontroller and Embedded Systems"‖, Pearson Education, Second edition, 2007.

References:-

1- Kenneth J. Ayala "The 8051 Microcontroller; Architecture, Programing, and Applications" 1991.
2- I. Scott MacKenzie "The 8051 Microcontroller", Second Edition, 1995.