

Course code	Course Name	L-T-P-Credits	Year of Introduction
BM333	MICROPROCESSORS & MICROCONTROLLERS LAB	0-0-3-1	2016
Prerequisite: BM305 Advanced microprocessors & microcontrollers			
Course Objectives			
<ul style="list-style-type: none"> To train the students with assembly language programming and hardware design using microprocessors and microcontrollers. 			
List of Exercises/ Experiments			
I. <u>8051 - based experiments</u>			
<ol style="list-style-type: none"> Familiarization with 8051 based kit, peripherals, cross assembler/ cross compiler Programming examples of arithmetic operations/ logical operations/ bit manipulation/ Data Transfer - Block move, Exchange, Sorting, Finding largest element in an array. (At least 8 examples altogether) Examples of interfacing 8051 with stepper motor/ DAC/ ADC/ Displays/ 8255/ 8253/ 8279/ 8251 (At least 2). 			
II. <u>8086 - based experiments</u>			
<ol style="list-style-type: none"> Familiarization of a typical 8086 microprocessor trainer kit and its operations Introduction to DEBUG program commands <ul style="list-style-type: none"> Examining and modifying the contents of the memory Assembling 8086 instructions with the ASSEMBLER commands Executing 8086 instructions and programs with the Trace and GO Command. Debugging a program Assembly language program development using IBM/PC Macro assembler <ul style="list-style-type: none"> Creating an Assembler source file Assembling source program The link program - creating a RUN module Programming examples of Arithmetic operations/ logical operations/ sorting and searching/ string manipulation operations/ code conversion/ digital clock and stop watch etc. (At least 8 examples altogether). Examples of interfacing 8086 with stepper motor/DAC/ADC/Display/ 8255/ 8253/ 8279/ 8251 (At least 2). 			
<i>Note: The experiments should cover both 8051 & 8086.</i>			
Expected Outcome			
<ul style="list-style-type: none"> At the end of the course students shall be able to design and implement microprocessor and microcontroller based systems. 			
Text Books:			
Embedded Systems using Assembly and C, Pearson Education, 2e. <ol style="list-style-type: none"> Lyla B. Das, The x86 Microprocessors: Architecture, programming and Interfacing (8086 to Pentium), Pearson Education, 2010, ISBN 978-81-317-3246-5. Muhammed Ali Mazidi and Janice Gillispie Mazidi, The 8051 Microcontroller and 			