

GOPALAN COLLEGE OF ENGINEERING AND MANAGEMENT

Department of Electronics and Communication Engineering

Academic Year: **2016-17**

Semester: **EVEN**

COURSE PLAN

Semester: **VI**

Subject Code& Name: **10EC62 & MICROPROCESSOR**

Name of Subject Teacher: **Sunitha.K**

Name of Subject Expert (Reviewer): **Kavitha M V**

For the Period: From: 30-01-17 to 21-05-17

Details of Book to be referred:

Text Books	<ol style="list-style-type: none"> 1. Microcomputer systems-The 8086 / 8088 Family – Y.C. Liu and G. A. Gibson, 2E PHI -2003 2. The Intel Microprocessor, Architecture, Programming and Interfacing-Barry B. Brey, 6e, Pearson Education / PHI, 2003
Reference Books	<ol style="list-style-type: none"> 1. Microprocessor and Interfacing- Programming & Hardware, Douglas hall, 2nd , TMH, 2006. 2. Advanced Microprocessors and Peripherals - A.K. Ray and K.M. Bhurchandi, TMH, 2nd , 2006. 3. 8088 and 8086 Microprocessors - Programming, Interfacing, Software, Hardware & Applications - Triebel and Avtar Singh, 4e, Pearson Education, 2003

Lecture NO	Topic Planned	Practical Applications & Brief objectives	Book referred with Pg No.	Planned Date	Executed Date	Deviation Reasons thereof	How Made Good / Reciprocate arrangement	Remarks by HOD
1.	Introduction to syllabus			06-2-17				
2.	Unit 1: 8086 PROCESSORS: Historical background	Applications: Instrumentation: Frequency	T2 2-16	07-2-17				

3.	The microprocessor based PC system	counters function generators; frequency synthesizers, spectrum analyzer and many other instruments are available where microprocessors are used as controller. Objectives: to discuss the evolution of processors and brief about the microprocessor based PC system, 8086 processor Outcomes: The student will be able to tell the history of processor and will know the details of every blocks of microprocessor based PC model and 8086 processor	T2 17-28	08-2-17					
4.	The microprocessor based PC system		T2 17-28	09-2-17					
5.	The microprocessor based PC system		T2 17-28	10-2-17					
6.	8086 CPU Architecture		T1 26-34	13-2-17					
7.	8086 CPU Architecture		T1 26-34	14-2-17					
8.	8086 CPU Architecture		T1 26-34	15-2-17					
9.	Machine language instructions		T1 39-46	16-2-17					
10.	Machine language instructions		T1 39-46	20-2-17					
11.	Instruction execution timing		T1 47-49	21-2-17					
12.	Instruction execution timing		T1 47-49	22-2-17					
13.	Unit 2: INSTRUCTION SET OF 8086: Assembler instruction format, data transfer and arithmetic instructions		Applications: Control: Microprocessor based controllers are available in home appliances, such as microwave oven, washing machine etc. Objectives: To discuss the complete instruction set of 8086 with example programs. Outcomes: The student will be able to understand the instructions used in 8086 and be able to program for small applications	T1 55-60	23-2-17				
14.	data transfer and arithmetic instructions			T1 61-76	27-2-17				
15.	data transfer and arithmetic instructions	T1 61-76		28-2-17					
16.	branch type, loop, NOP & HALT	T1 78-91		1-3-17					
17.	flag manipulation	T1 92		2-3-17					
18.	Logical and shift and rotate instructions	T1 93-99		3-3-17					

19.	Directives and operators.		T1 100-119	6-3-17				
20.	Directives and operators.		T1 100-119	7-3-17				
21.	Illustration of these instructions with example programs		class	8-3-17				
22.	Illustration of these instructions with example programs		class	13-3-17				
23.	Unit 3: BYTE AND STRING MANIPULATION :String instructions	Applications: Communication: Telephone industry, digital telephone sets. Telephone exchanges and modem, television, satellite communication Railway reservation and air reservation. LAN and WAN for communication of vertical information through computer network. Objectives: To discuss the complete instruction set of 8086 with example programs. Outcomes: The student will be able to understand the instructions used in 8086 and be able to program for small applications.	T1 208-211	14-3-17				
24.	String instructions, REP Prefix		T1 211-214	15-3-17				
25.	Table translation		T1 220-222	16-3-17				
26.	Number format conversions		T1 223-228	17-3-17				
27.	Number format conversions		T1 223-228	20-3-17				
28.	Number format conversions		T1 223-228	21-3-17				
29.	Procedures, Macros		T1 155-179	22-3-17				
30.	Programming using keyboard and video display	T2 259-270	23-3-17					
31.	Programming using keyboard and video display	T2 259-270	24-3-17					
32.	Unit 5: 8086 INTERFACING:	Applications: office	T1 383-390	27-3-17				

	Interfacing microprocessor to keyboard (keyboard types)	automation and publication: word processing, spread sheet operations, storage etc						
33.	keyboard circuit connections and interfacing	Objectives: To discuss 8086 interfacing to keyboard, stepper motor and segment display. Outcomes: The student will be able to understand how the 8086 interfacing with various devices is done and how it is programmed.	T1 383-390	28-3-17				
34.	keyboard circuit connections and interfacing		T1 383-390	30-3-17				
35.	keyboard circuit connections and interfacing		T1 383-390	31-3-17				
36.	Interfacing to alphanumeric displays		T2 403-413	3-4-17				
37.	Interfacing to alphanumeric displays		T2 403-413	4-4-17				
38.	Interfacing a Microcomputer to a stepper motor.		T2 424-429	5-4-17				
39.	TUTORIALS3-PROBLEMS		T1&T2	6-4-17				
40.	Unit 6: 8086 BASED MULTIPROCESSING SYSTEMS: Coprocessor configurations		Applications: The use of microprocessor in toys, entertainment equipment and home applications is making them more entertaining and full of features. Objectives: to discuss about the 8087 co processor, its instruction set and few example programs. Outcomes: The student will be able to program using	T1 456-459	7-4-17			
41.	Coprocessor configurations	T1 456-459		10-4-17				
42.	The 8087 numeric data processor: data types	T1 478-481		11-4-17				
43.	The 8087 numeric data processor: data types	T1 478-481		12-4-17				
44.	Instruction set and examples.	T1 485-496		13-4-17				

45.	Instruction set and examples.	8087 instructions.	T1 485-496	20-4-17				
46.	problems		T1 485-496	21-4-17				
47.	Instruction set and examples.		T1 485-496	24-4-17				
48.	Instruction set and examples.		T1 485-496	25-4-17				
49.	Unit 4: 8086 INTERRUPTS: 8086 Interrupts	Applications: Microprocessors are used in: Calculators, Accounting system, Games machine, Complex Industrial Controllers Objectives: to discuss interrupt concepts, different types and examples. Outcomes: The student will be able to list out different types of interrupts and how they function.	T2 452-354	26-4-17				
50.	interrupt responses		T2	27-4-17				
51.	Hardware interrupt applications		T2 459-462	28-4-17				
52.	Hardware interrupt applications		T2 459-462	2-5-17				
53.	Examples		T2 459-462	3-5-17				
54.	Software interrupt applications		T2 481-484	4-5-17				
55.	Software interrupt applications		T2 481-484	5-5-17				
56.	Interrupt examples.		T2 481-484	9-5-17				
57.	Illustration of these instructions with example programs		T2 481-484	10-5-17				
58.	Unit 7:SYSTEM BUS STRUCTURE: Basic 8086 configurations: minimum mode	Applications: Microprocessors are used in: Traffic light Control, Data acquisition systems,	T1 310-318	11-5-17				

59.	maximum mode	Multi user, multi-function environments etc. Objectives: to discuss the 8086 configurations, types of modes, USB and LPT. Outcomes: The student will be able to explain configurations of 8086.	T1 319-323	12-5-17				
60.	Interface: peripheral component interconnect (PCI bus,		T2 602-610	18-5-17				
61.	the parallel printer interface (LPT)		T2 612-614	19-5-17				
62.	the universal serial bus (USB		T2 617-622	19-5-17				
63.	Unit 8: 80386, 80486 AND PENTIUM PROCESSORS: Introduction to the 80386 microprocessor	Applications: Military applications, Communication systems Objectives: to discuss different processors architectures and instruction sets. Outcomes: the student will be able to explain about the 80386, 80486 and Pentium processor.	T2 678-700	22-5-17				
64.	Introduction to the 80486 microprocessor		T2 718-725	23-5-17				
65.	Introduction to the 80486 microprocessor		T2 718-725	23-5-17				
66.	Introduction to the Pentium microprocessor		T2 730-750	25-5-17				
67.	Introduction to the Pentium microprocessor		T2 730-750	26-5-17				
68.	Unit 1: 8086 Processors Revision			29-5-17				
69.	Unit 2: Instruction Set of 8086 revision			30-5-17				
70.	Unit 3: Byte And String Manipulation Revision			31-5-17				
71.	Unit 4: 8086 Interfacing Revision			01-6-17				
72.	Unit 5: 8086 Based Multiprocessing Systems Revision			02-6-17				

Prepared By: __

(Faculty)
Date & Sign _____

Reviewed by: _____
(Sub. expert)
Date & Sign _____

Approved by: _____
(HOD)
Date & Sign _____

Approved by: _____
(Principal/ Acad. Co)
Date & Sign _____