GITAM UNIVERSITY Rudraram Village, Patancheru Mandal,

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**DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING**

COURSE PLAN-one copy to be submitted to the HOD one week before commencement of the semester

Date:05-11-2018

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Subj. code | Name of the subject | Class/  sem | Academic Year | Name of the faculty/designation | No. of the students | Total periods per semester/ year | |
| Lectures | Tutorials |
| EEC 302 | **Microprocessors and Interfacing** | III ECE/VI A1 | 2018-2019 | K. PRAVEEN KUMAR, Asst Professor | 66 | 53 | 2 |

**Course Objectives**:

1. To study the Architecture of 8086 & 8085.
2. To study the addressing modes & instruction set of 8085 and 8086.
3. To introduce the need & use of Interrupt structure 8086.
4. Developing of assembly level programs and providing the basics of the processors.
5. To provide solid foundation on interfacing the external devices to the processor according to the user requirements to create novel products and solutions for the real time problems.

**Learning Outcomes**:

At the end of this course, students will be able to

1. Understand the architecture of 8086 and 8085.
2. Impart the knowledge about the instruction set of 8086 and 8085
3. Understand the interfacing of memory, I/O ports and ADC and DAC to the Microprocessors 8086.
4. Develop skill in simple program writing for 8086 and applications
5. Understanding the concepts of stacks, interrupts and interfacing of interrupt controller (8259), Programmable interval timer (8253)

**Methodology:**

The methodology that is used to teach this subject is mainly chalk &talk (Lecture method). Making use of LCD can help the teacher to cover the topics as some of the examples and programs. Student volunteers will be required to make presentations of current literature on some identified topics.

**Lesson Plan:**

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| S.No. | Unit no | Topic | No. Of Classes | Remarks |
| 1 | I | Introduction to micro processors | 1 |  |
| 2 | Historical Perspective | 1 |  |
| 3 | Architecture and Register organization of 8085 | 1 |  |
| 4 | Architecture and Register organization of 8085 | 1 |  |
| 5 | Pin diagram of 8085 | 1 |  |
| 6 | Pin diagram of 8085 | 1 |  |
| 7 | Addressing Modes | 1 |  |
| 8 | Microprocessor timing diagrams | 1 |  |
| 9 | Microprocessor timing diagrams | 1 |  |
| 10 | II | Architecture and Register organization of 8086 | 1 |  |
| 11 | Architecture and Register organization of 8086 | 1 |  |
| 12 | Memory organization | 1 |  |
| 13 | Memory organization | 1 |  |
| 14 | Bus organization, I/O addressing | 1 |  |
| 15 | Minimum Mode of 8086 | 1 |  |
| 16 | Maximum modes of 8086 | 1 |  |
| 17 | Timing diagrams | 1 |  |
| 18 | Revision | 1 |  |
| 19 | III | Instruction Format | 1 |  |
| 20 | Machine language instruction formats | 1 |  |
| 21 | Machine coding | 1 |  |
| 22 | Addressing modes | 1 |  |
| 23 | Instruction set of 8086 | 1 |  |
| 24 | Instruction set of 8086 | 1 |  |
| 25 | Assembler directives and operators | 1 |  |
| 26 | Assembler directives and operators | 1 |  |
| 27 | Example assembly programmes | 1 |  |
| 28 | Example assembly programmes | 1 |  |
| 29 | Example assembly programmes | 1 |  |
| 30 | Tutorial class |  |  |
| 31 | Tutorial class |  |  |
| 32 | Revision | 1 |  |
| 33 | Revision |  |  |
| 34 | IV | Interrupts – ISR, IVT, interrupt cycle of 8086 | 1 |  |
| 35 | interrupt programming | 1 |  |
| 36 | PIC 8259A | 1 |  |
| 37 | Modes of operation, ICWs | 1 |  |
| 38 | OCWs | 1 |  |
| 39 | Revision |  |  |
| 40 | Revision |  |  |
| 41 | V | Interfacing of I/O ports | 1 |  |
| 42 | Interfacing of I/O ports | 1 |  |
| 43 | 8255 PIO | 1 |  |
| 44 | Modes of operation | 1 |  |
| 45 | Modes of operation | 1 |  |
| 46 | Interfacing A/D converters | 1 |  |
| 47 | Interfacing D/A converters | 1 |  |
| 48 | 8253 PIT | 1 |  |
| 49 | 8253 PIT | 1 |  |
| 50 | 8251 USART | 1 |  |
| 51 | 8251 USART-Modes | 1 |  |
| 52 | Revision | 1 |  |
| 53 | Revision | 1 |  |
| 54 | Exam | 1 |  |
| 55 | Exam | 1 |  |

**Text Books:**

1. Ramesh S. Gaonkar, Microprocessors, Architecture, Programming and Applications with the 8085, 5/e, Penram, 2011.

2. Advanced Microprocessors And Peripherals by A .K .RAY , K.M BHURCHANDI,TMH Publishers, 2006.

**Reference Books:**

1. Micro computer systems, The 8086/8088 Family Architecture, Programming and Design – Y.Liu and G.A. Gibson, PHI, 2nd edition.

2. Barry B. Brey, “The Intel Microprocessors 8086/8088, 80186/80188, 80286, 80386, 80486, and Pentium processors. Architecture, programming and interfacing”.

3. Douglas V Hall, “Microprocessors and Interfacing: Programming and Hardware”, 2nd edition, TMH.

4. 8086 Micro Processor -Kenneth J. Ayala, Penram International/ Thomson, 1995.

Signature of the HOD Signature of the faculty

Date: 05-11-2018 Date: 05-11-2018