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|  | **Sub Unit** | **No. of Lecture(s)** | **Topics** | **Reference Chapter/Additional Reading** | **Methodology** | **Evaluation Parameters** |
| **Unit 1: Introduction [06 Hours]** | | | | | | |
|  | 1.1 | 1 | Introduction – Mainframe, Minicomputers, Microcomputers | Chapter 2 – page no 2.1 | Chalk & Talk |  |
| 1.2 | 1 | 8086 Processor architecture | Chapter 2 – page no 2.11 |
| 1.3 | 3 | 8086 registers and system bus, peripherals | Chapter 2 – page no 2.12 |
| 1.4 | 1 | Introduction to assembly language | Chapter 2 – page no 2.16 |  |  |
| **Unit 2: 8086 Assembly Language Programming Techniques [08 Hours]** | | | | | | |  |  | WLAN Applications |
|  | 2.1 | 1 | Objectives, Program Development Steps | Chapter 3 – page no 3.1 | Chalk & Talk |  |
| 2.2 | 2 | Constructing machine code templates for 8086 instructions | Chapter 3 – page no 3.12 |
| 2.3 | 1 | Writing Programs using assembler | Chapter 3 – page no 3.19 |
| 2.4 | 1 | Assembly language programming development tools | Chapter 3 – page no 3.26 |
| 2.5 | 3 | Flags, Jumps, WHILE DO , REPEAT UNTILL Implementation, Debugging assembly language program | Chapter 4 – page no 4.8,4.20,4.22 |
| **Unit 3: Procedures, Macros and Assembler Directives [10 Hours]** | | | | | | |
|  | 3.1 | 3 | IF-THEN, IF-THEN-ELSE, & Multiple IF-THEN-ELSE Programs | Chapter 4 – page no 4.15 | Chalk & Talk | Unit Test I |
| 3.2 | 2 | Writing and Using Procedures | Chapter 5 – page no 5.6 |
| 3.3 | 3 | Writing and Using Assembler Macros | Chapter 5 – page no 5.37 |
| 3.4 | 2 | Assembler Directives | Chapter 6 – page no 6.1 to 6.36 |
| **Unit 4: Interfacing [06 Hours]** | | | | | | |
|  | 4.1 | 2 | Interfacing RAM with the microprocessor | Chapter 11 | Chalk & Talk |  |
| 4.2 | 2 | Interfacing ROM with the microprocessor |
| 4.3 | 2 | Interfacing I/O with the microprocessor |
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| **Unit 5: 8086 Interrupt and Interrupt Application [10 Hours]** | | | | | | |
|  | 5.1 | 2 | 8086 Interrupts & Interrupt Responses | Chapter 8 – page no 8.1 | Chalk & Talk |  |
| 5.2 | 1 | 8086 Interrupt types | Chapter 8 – page no 8.7 |
| 5.3 | 2 | Screen Features, Setting the Cursor, Clearing the Screen | Web link: http://www.ablmcc.edu.hk/~scy/CIT/8086\_bios\_and\_dos\_interrupts.htm |
| 5.4 | 2 | INT 21H Function 09H, 02H and 40H for Screen Display, 0AH and 3FH for Keyboard Input |
| 5.5 | 1 | BIOS Keyboard Data Areas |  |  |
| 5.6 | 2 | INT 21H and 16H for Keyboard Input |  |  |
| **Unit 6: Programmable Peripheral Devices [08 Hours]** | | | | | | |
|  | 6.1 | 2 | 8259 - Programmable Interrupt Controller | Chapter 8 – page no 8.30 | Chalk & Talk | Unit Test II |
| 6.2 | 2 | 8251 - Programmable Interface device - Serial I/O |
| 6.3 | 2 | 8255 - Programmable Peripheral Interface | Chapter 9 – page no 9.3 |
| 6.4 | 2 | 8237 - DMA Controller | Chapter 11 – page 11.5 |  |  |
|  | | **Text Books :**   1. **Douglass V Hall - 8086 Microprocessor Architecture, Interfacing & programming - TMH** | | | | |