MYMENSINGH POLYTECHNIC INSTITUTE

**ELECTRO-MEDICAL TECHNOLOGY**

**Out Line Plan of Teaching 7th Semester Student**

**SEMESTER PLAN** **T P C**

**Subject: Hospital Laboratory Equipment (8671)** **3 3 4**

| Week | Theory | | | Practical | |
|---|---|---|---|---|---|
| | Content (Specific Objective) | Activity | | Content(practical job no) | Activity |
| | | Class Test | Learning Materials | | |
| 1 | Understand the concept of general medical laboratory device. (1.1---1.5) | | Ref. books, white board , marker, flow chart | Introducing to different equipment which is required to perform practical experiment. | Ref .books ,m ethodology , viva, job sheet |
| 2 | Understand the concept of general medical laboratory device. (1.6---1.11) | | | Job no:- 1. Study the operation of water bath. | Water bath. |
| 3 | Understand the analytical instruments & equipment. (2.1---2.5) | | | " | " |
| 4 | Understand the spectrophotometer. (3.1---3.7) | CT-1 | | Job no:-2. Study the operation of different types of Laboratory balance. | Laboratory Balance. |
| 5 | Understand the spectrophotometer. (3.8---3.13) | | | " | " |
| 6 | Understand the microscope. (4.1---4.8) | QT-1 | | Job no:-3. Study the operation of microprocessor based spectrophotometer. | Spectrophoto meter. |
| 7 | Understand $P^H$ meter. (5.1---5.10) | | | " | " |
| 8 | Understand the colorimeter and flame photometers. (6.1---6.6) | | | Job no:-4 Study the operation of high power compound microscope. | Compound microscope. |
| 9 | **Midterm Examination** | | | | |
| 10 | Understand the colorimeter and flame photometers. (6.7---6.11) | | | " | " |
| 11 | Understand analyzer and blood cell counter. (7.1---7.6) | | | Job no:-5 Study the operation of blood Cell counter. | Cell Counter. |
| 12 | Understand analyzer and blood cell counter. (7.7---7.10) | | | " | " |
| 13 | Understand the atomic absorption spectrophotometers and mass spectrometers. (8.1---8.5) | | | Job no:-6 Study the operation of $P^H$ meter. | $P^H$ meter. |
| 14 | Understand the atomic absorption spectrophotometers and mass spectrometers. (8.6---8.9) | CT-2 | | " | " |
| 15 | Understand the centrifuge machine and chromatograph. (9.1---9.9) | QT-2 | | Job no:-7 Detect the trouble and solve the problem of colorimeter. | Colorimeter. |
| 16 | Understand the quality control in clinical chemistry and safety in the Laboratory. (10.1---10.8) | | | Job no:-8 . Study the operation of different types of centrifuge machine. | Centrifuge Machine. |

Teacher's name: **Md. Mahamudul Hasan Sumon**

Designation: Junior Instructor

Department: Electromedical

MYMENSINGH POLYTECHNIC INSTITUTE
ELECTRO - MEDICAL TECHNOLOGY
Out Line Plan of Teaching 7th Semester Student

SEMESTER PLAN PRESENTATION T P C
Subject : ROBOTICS AND CONTROL (8675) 2 3 3

| Week | Theory | | | Practical | |
|---|---|---|---|---|---|
| | Content (Specific Objective) | Activity | | Content (Practical Job no) | Activity |
| | | Class Test | Learning Materials | | |
| 1 | **Understand the introduction to robotics (1.1-1.4)** | | Ref. books, white board marker, flow chart | Study the operation of closed loop speed control with DC servo system | |
| 2 | **Understand the robot terminology(2.1-2.4)** | | | **Study the operation of AC servo system** | |
| 3 | **Understand the robot technology levels(3.1-3.6)** | | | **Study the operation of an analog electronic control system** | |
| 4 | **Understand the major internal components of the controller of robotic system (4.1-4.6)** | CT-1 | | **Study the open and closed loop DC motor speed control system** | |
| 5 | **Understand the concepts of hydraulic and pneumatic drive systems (5.1-5.7)** | | | **Identify different parts of hydraulic actuator.** | |
| 6 | **Understand the DC and AC motor operation** (6.1-6.7) | QT-1 | | **Study the operation of DC motor** | |
| 7 | **Review** | | | **Review** | |
| 8 | **Review** | | | **Review** | |
| 9 | Midterm Examination | | | | |
| 10 | **Understand the concept of servo system control** (7.1-7.6) | | | **Study the operation of AC induction motor** | |
| 11 | **Understand the features of robotic sensors (8.1-8.3)** | | | **Study the operation of stepper motor** | |
| 12 | **Understand the features of robotic sensors (8.4-8.6)** | QT-2 | | **Review** | |
| 13 | **Understand the robot used in medical filed (9.1-9.3)** | | | **Identify different parts of hydraulic actuator.** | |
| 14 | **Understand the robot used in medical filed (9.4-9.6)** | | | **Review** | |
| 15 | **Understand the robot applications** (10.1-10.5) | CT-2 | | **Study the operation of AC induction motor** | |
| 16 | **Review** | | | **Review** | |

Teacher's name: **MD. Aminul Hoque**
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SEMESTER PLAN PRESENTATION T P C

Subject : MICROCONTROLLER AND EMBEDDED SYSTEMS 6871 2 3 3

| Week | Theory | | | Practical | |
|---|---|---|---|---|---|
| | Content (Specific Objective) | Activity | | Content (Practical Job no) | Activity |
| | | Class Test | Learning Materials | | |
| 1 | Understand the Fundamentals of Micro controller **(1.1-1.5)** | | Ref. books, white board marker, flow chart | Test a program to send a data to port P1 and p2. | |
| 2 | Understand the Fundamentals of Micro controller **(1.6-1.9)** | | | Test a program to copy 8 bytes of data from RAM location staring at 30H to RAM location starting 50H. | |
| 3 | Understand Features of the Intel 8051 Microcontroller and PIC (2.1-2.3) | | | Test a program to get the vale of x and send $x^2$ to p2 continuously. | |
| 4 | Understand Architecture of the Intel 8051 Microcontroller(3.1-3.4) | CT-1 | | Develop and test a program for flashing LEDs | |
| 5 | Understand Architecture of the Intel 8051 Microcontroller(3.5-3.7) | | | Develop and test a program for displaying 0 to 9 on 7-Segment display. | |
| 6 | Understand the Instruction Set of 8051 Microcontroller(4.1-4.5) | QT-1 | | Develop and test a program for Interfacing Keyboard | |
| 7 | Understand the Assembly Language Programming of the Intel 8051 Microcontroller.(5.1-5.4) | | | Develop and test a program for Interfacing LCD | |
| 8 | Understand the Assembly Language Programming of the Intel 8051 Microcontroller.(5.5-5.8) | | | Develop and test a program for Interfacing DC Motor. | |
| 9 | Understand the Subroutine(6.1-6.4) | QT-2 | | Develop and test a program for Interfacing Stepper Motor. | |
| 10 | Understand Programming 8051 in C.(7.1-7.4) | | | Develop and test a program for Interfacing DAC | |
| 11 | Understand I/O port Programming(8.1-8.5) | | | Develop and test a program for Interfacing ADC | |
| 12 | Understand the 8051 Timer/counter(9.1-9.10) | CT-2 | | Develop and test a program for Interfacing Temperature sensor | |
| 13 | Understand 8051 Serial communication(10.1-10.10) | | | **Review** | |
| 14 | Under Stand the Interrupt of the 8051 Microcontroller(11.1-11.9) | | | Develop and test a program for dot matrix display | |
| 15 | Under Stand LCD and Keyboard Interfacing(12.1-12.7) | | | **Review** | |
| 16 | Describe interfacing the 8051 with a DC motor.(13.1-13.7) | | | **Review** | |

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