**LESSON PLAN**

**Subject Code & Name: Bio Medical Engineering**

**Branch: E.C.E-A Class / Semester: IV/IV-SEM 1 Academic Year:2013-14**

**Faculty:P.Kameswara Rao**

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| **Period** | **Date (Tentative)** | **Topic** | **Unit No.** | **Teaching Methodology** | **Remarks** | **Corrective action upon review** |
|  |  | **Introduction to bio medical engineering** | **I** |  |  |  |
| 1 | 10.6.13 | Age and development of BME, man-instrumentation system |  | CB |  |  |
| 2 | 12.6.13 | Physiological systems of body |  | CB |  |  |
| 3 | 17.6.13 | Problems encountered in measuring a living systems |  | CB |  |  |
| 4 | 19.6.13 | Sources of bio- electric potentials |  | CB |  |  |
| 5 | 20.6.13 | Resting and action potentionals |  | CB |  |  |
| 6 | 22.6.13 | Propagation of action potentionals |  | CB |  |  |
| 7 | 26.6.13 | Bio electric potentionals ECG,EEG and EMG |  | CB |  |  |
|  |  | **Electrodes and Transducers** | **II** |  |  |  |
| 8 | 27.6.13 | Introduction to electrode theory |  | CB |  |  |
| 9 | 28.6.13 | Bio-potentional electrodes |  | CB |  |  |
| 10 | 3.7.13 | Basic transducer principles |  | CB |  |  |
| 11 | 4.7.13 | Bio chemical transducers |  | CB |  |  |
| 12 | 5.7.13 | Active transducers, Passive transducers |  | PPT |  |  |
| 13 | 6.7.13 | Pulse sensors, respiration sensors, Transducers with digital output |  | PPT |  |  |
|  |  | **Cardio Vascular systems and measurements** | **III** |  |  |  |
| 14 | 6.7.13 | The heart and cardiovascular system |  | PPT |  |  |
| 15 | 9.7.13 | Electrocardiography |  | PPT |  |  |
| 16 | 11.7.13 | Blood pressure measurement |  | CB |  |  |
| 17 | 11.7.13 | Measurements of blood flow |  | PPT |  |  |
| 18 | 12.7.13 | Cardiac output |  | CB |  |  |
| 19 | 18.7.13 | Measurement of heart sound |  | PPT |  |  |
| 20 | 19.7.13 | Plethsmography |  | PPT |  |  |
| 21 | 20.7.13 | ECG measurements |  | PPT |  |  |
|  |  | **Measurements in Respiratory system** | **IV** |  |  |  |
| 22 | 1.8.13 | The physiology of respiratory system |  | PPT |  |  |
| 23 | 1.8.13 | Lung volumes and capacities |  | PPT |  |  |
| 24 | 27.8.13 | Mechanical measurements |  | PPT |  |  |
| 25 | 28.8.13 | Measurements of residual volume |  | PPT |  |  |
| 26 | 11.9.13 | Intra- alveolar and intra- thoracic pressure measurement |  | PPT |  |  |
| 27 | 12.9.13 | Gas exchange and distribution |  | PPT |  |  |
|  |  | **Patient care monitoring** | **V** |  |  |  |
| 28 | 18.9.13 | Elements of intensive care monitoring |  | CB |  |  |
| 29 | 21.9.13 | Patient monitoring displays, diagrams |  | PPT |  |  |
| 30 | 3.10.13 | Calibration of patient monitoring equipment |  | PPT |  |  |
| 31 | 17.10.13 | Other instruments for patient care monitoring |  | PPT |  |  |
| 32 | 17.10.13 | Organization of the hospital for patient care monitoring |  | PPT |  |  |
| 33 | 18.10.13 | Pace makers |  | PPT |  |  |
| 34 | 19.10.13 | Defibrillators |  | PPT |  |  |
|  |  | Therapeutic and prosthetic devices | **VI** |  |  |  |
| 35 | 22.10.13 | Audiometers, hearing aids |  | PPT |  |  |
| 36 | 28.10.13 | Myo electric arm, laparoscope |  | PPT |  |  |
| 37 | 30.10.13 | Opthmology instruments |  | CB |  |  |
| 38 | 31.10.13 | Anatomy of vision |  | PPT |  |  |
| 39 | 2.11.13 | Electrophysiological tests |  | PPT |  |  |
| 40 | 7.11.13 | Ophthalmoscope , tonometer |  | PPT |  |  |
| 41 | 8.11.13 | Diathermy laboratory instruments |  | PPT |  |  |
|  |  | **Diagnostic techniques and bio-telemetry** | **VII** |  |  |  |
| 42 | 8.11.13 | Ultrasonic imaging applications for therapicuse |  | PPT |  |  |
| 43 | 9.11.13 | Ultrasonic diagnosis |  | PPT |  |  |
| 44 | 9.11.13 | X-Y & radio-isotope instruments |  | PPT |  |  |
| 45 | 13.11.13 | CAT scan, ECT scan |  | PPT |  |  |
| 46 | 13.11.13 | MRI scan, introduction to bio telemetry |  | PPT |  |  |
| 47 | 15.11.13 | Physiological parameters adaptable to bio- telemetry |  | CB |  |  |
| 48 | 15.11.13 | Telemetry for ECG measurements |  | CB |  |  |
|  |  | **Monitors, recorders & shock hazards** | **VIII** |  |  |  |
| 49 | 20.11.15 | Bio potentional amplifiers |  | CB |  |  |
| 50 | 20.11.15 | Monitors, recorders |  | CB |  |  |
| 51 | 21.11.15 | Shock hazards and prevention |  | CB |  |  |
| 52 | 21.11.15 | Physiological effects of electric current |  | PPT |  |  |
| 53 | 22.11.15 | Shock hazards from electric equipment |  | CB |  |  |
| 54 | 22.11.15 | Methods of accident prevention |  | PPT |  |  |
| 55 | 23.11.15 | Methods of accident prevention |  | PPT |  |  |
| 56 | 23.11.15 | Isolated power distribution system |  | CB |  |  |

**CB: CHALK & BOARD PPT: POWER POINT PRESENTATION**