**LESSON PLAN**

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

**Branch: E.C.E-A Class / Semester: IV/IV-SEM 1 Academic Year:2014-15**

**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 | 16.6.14 | Age and development of BME, man-instrumentation system |  | CB |  |  |
| 2 | 17.6.14 | Physiological systems of body |  | CB |  |  |
| 3 | 18.6.14 | Problems encountered in measuring a living systems |  | CB |  |  |
| 4 | 19.6.14 | Sources of bio- electric potentials |  | CB |  |  |
| 5 | 19.6.14 | Resting and action potentionals |  | CB |  |  |
| 6 | 23.6.14 | Propagation of action potentionals |  | CB |  |  |
| 7 | 24.6.14 | Bio electric potentionals ECG,EEG |  | CB |  |  |
| 8 | 26.6.14 | EMG,ERG |  |  |  |  |
| 9 | 27.6.14 | Development of bio-medical. |  |  |  |  |
|  |  | **Electrodes and Transducers** | **II** |  |  |  |
| 10 | 30.6.14 | Introduction to electrode theory |  | CB |  |  |
| 11 | 01.07.14 | Bio-potentional electrodes |  | CB |  |  |
| 12 | 02.7.14 | Basic transducer principles |  | CB |  |  |
| 13 | 3.7.14 | Bio chemical transducers |  | CB |  |  |
| 14 | 4.7.14 | Active transducers |  | PPT |  |  |
| 15 | 7.7.14 | Passive transducers |  | PPT |  |  |
| 16 | 8.7.14 | Pulse sensors, respiration sensors |  | PPT |  |  |
| 17 | 9.7.14 | Transducers with digital output |  | CB |  |  |
|  |  | **Cardio Vascular systems and measurements** | **III** |  |  |  |
| 18 | 10.7.14 | cardiovascular system |  | PPT |  |  |
| 19 | 10.7.14 | Electrocardiography |  | PPT |  |  |
| 20 | 14.7.14 | Blood pressure measurement |  | CB |  |  |
| 21 | 15.7.14 | Measurements of blood flow |  | PPT |  |  |
| 22 | 16.7.14 | Cardiac output |  | CB |  |  |
| 23 | 17.7.14 | Measurement of heart sound |  | PPT |  |  |
| 24 | 17.7.14 | Plethsmography |  | PPT |  |  |
| 25 | 21.7.14 | ECG measurements |  | PPT |  |  |
| 26 | 22.7.14 | The heart |  |  |  |  |
|  |  | **Measurements in Respiratory system** | **IV** |  |  |  |
| 27 | 23.7.14 | The physiology of respiratory system |  | PPT |  |  |
| 28 | 24.7.14 | Lung volumes and capacities |  | PPT |  |  |
| 29 | 24.7.14 | Mechanical measurements |  | PPT |  |  |
| 30 | 28.7.14 | Measurements of residual volume |  | PPT |  |  |
| 31 | 30.7.14 | Intra- alveolar and intra- thoracic pressure measurement |  | PPT |  |  |
| 32 | 31.7.14 | Gas exchange and distribution |  | PPT |  |  |
| 33 | 31.7.14 | Gas chromatography |  | PPT |  |  |
| 34 | 4.8.14 | Respiratory therapy equipment |  | PPT |  |  |
| 35 | 5.8.14 | Respiratory therapy equipment |  |  |  |  |
|  |  | **Patient care monitoring** | **V** |  |  |  |
| 36 | 6.8.14 | Elements of intensive care monitoring |  | CB |  |  |
| 37 | 7.8.14 | Patient monitoring displays, diagrams |  | PPT |  |  |
| 38 | 7.8.14 | Calibration of patient monitoring equipment |  | PPT |  |  |
| 39 | 18.8.14 | Other instruments for patient care monitoring |  | PPT |  |  |
| 40 | 19.8.14 | Organization of the hospital for patient care monitoring |  | PPT |  |  |
| 41 | 20.8.14 | Pace makers |  | PPT |  |  |
| 42 | 21.8.14 | Defibrillators |  | PPT |  |  |
| 43 | 21.8.14 | RF applications of therapeutic use |  | CB |  |  |
| 44 | 25.8.14 | Radio therapey |  |  |  |  |
| 45 |  | Therapeutic and prosthetic devices | **VI** |  |  |  |
| 46 | 26.8.14 | Audiometers, hearing aids |  | PPT |  |  |
| 47 | 27.8.14 | Myo electric arm, laparoscope |  | PPT |  |  |
| 48 | 28.8.14 | Opthmology instruments |  | CB |  |  |
| 49 | 1.9.14 | Anatomy of vision |  | PPT |  |  |
| 50 | 2.9.14 | Electrophysiological tests |  | PPT |  |  |
| 51 | 3.9.14 | Ophthalmoscope , tonometer |  | PPT |  |  |
| 52 | 4.9.14 | Diathermy laboratory instruments |  | PPT |  |  |
| 53 | 4.9.14 | Bio materials , stimulators |  | PPT |  |  |
| 54 | 8.9.14 | Clinical lab instruments |  |  |  |  |
|  |  | **Diagnostic techniques and bio-telemetry** | **VII** |  |  |  |
| 55 | 9.9.14 | Ultrasonic imaging applications for therapicuse |  | PPT |  |  |
| 56 | 10.9.14 | Ultrasonic diagnosis |  | PPT |  |  |
| 57 | 11.9.14 | X-Y & radio-isotope instruments |  | PPT |  |  |
| 58 | 11.9.14 | CAT scan, ECT scan |  | PPT |  |  |
| 59 | 15.9.14 | MRI scan, introduction to bio telemetry |  | PPT |  |  |
| 60 | 16.9.14 | Physiological parameters adaptable to bio- telemetry |  | CB |  |  |
| 61 | 17.9.14 | Telemetry for ECG measurements |  | CB |  |  |
| 62 | 18.9.14 | Telemetry for emergency patient monitoring |  | PPT |  |  |
| 63 | 18.9.14 | Telemetry for emergency patient monitoring |  |  |  |  |
|  |  | **Monitors, recorders & shock hazards** | **VIII** |  |  |  |
| 64 | 22.9.14 | Bio potentional amplifiers |  | CB |  |  |
| 65 | 23.9.14 | Monitors, recorders |  | CB |  |  |
| 66 | 24.9.14 | Shock hazards and prevention |  | CB |  |  |
| 67 | 25.9.14 | Physiological effects of electric current |  | PPT |  |  |
| 68 | 29.9.14 | Shock hazards from electric equipment |  | CB |  |  |
| 69 | 30.9.14 | Methods of accident prevention |  | PPT |  |  |
| 70 | 1.10.14 | Methods of accident prevention |  | PPT |  |  |
| 71 | 6.10.14 | Isolated power distribution system |  | CB |  |  |

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