**Lesson Plan**

**Name of faculty: Amit Gupta**

**Discipline: Mechanical**

**Semester: 4th**

**Subject: Energy Studies (Only Theory Subject)**

Lesson Plan Duration: 15 weeks (from January, 2018 to April, 2018)

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| **Week** | **Theory** |
|  | **Lecture day** | **Topic(Including assignment/ test)** |
| 1st |  | **Chapter 1 : Introduction:** Types of energy, Conversion of various forms of energy  |
|  | Conventional Sources  |
|  | Non-conventional Sources |
| 2nd |  | Need for Non-Conventional Energy based power generation. |
|  | **Chapter 2: Energy Management:** General Principles of Energy Management |
|  | Energy Management Strategy |
| 3rd |  | Energy Management Strategy |
|  | **Chapter 3 : Energy Audit:** Need |
|  | Types |
| 4th |  | Methodology and Approach |
|  | **Chapter 4 :Conventional Energy sources:** Selection of site advantages- disadvantages |
|  | Working & Schematic Diagram of Thermal Power Plant |
| 5th |  | Working & Schematic Diagram of Hydro power Plant |
|  | Working & Schematic Diagram of Nuclear power Plant |
|  | Working & Schematic Diagram of Diesel power Plant |
| 6th |  | Comparison of various Power plants |
|  | Advantages & Disadvantages of Thermal power Plant |
|  | Advantages & Disadvantages of Hydro power Plant |
| 7th |  | Advantages & Disadvantages of Nuclear power Plant |
|  | Advantages & Disadvantages of Diesel power Plant |
|  | **Chapter 5 : Non-Conventional Energy sources**: Basic principle |
| 8th |  | Site selection of Solar energy power plant |
|  | Photovoltaic technologies |
|  | PV Systems and their components |
| 9th |  | Bio Energy Plants |
|  | Geothermal Energy plants |
|  | Wind Energy power plant |
| 10th |  | Tidal energy plants |
|  | MHD |
|  | Advantages & Disadvantages of Bio Energy Plant |
| 11th |  | Advantages & Disadvantages of Geothermal Energy Plant |
|  | Advantages & Disadvantages of Wind Energy Plant |
|  | Advantages & Disadvantages of Tidal Energy Plant |
| 12th |  | **Chapter 6 : Energy Scenario:** Lay out of power system  |
|  | Role of Energy in Economic development |
|  | Energy demand |
| 13th |  | Availability and consumption |
|  | Commercial and Non-commercial energy |
|  | Commercial and Non-commercial energy |
| 14th |  | Commercial and Non-commercial energy |
|  | Indian energy scenario  |
|  | Long term energy scenario |
| 15th |  | Energy pricing |
|  | Energy sector reforms in India, |
|  | Energy strategy for the future |