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| **Lesson Plan** | | | | | |
| **Name of Faculty** | | | | | Satyender |
| **Discipline** | | | | | Electrical Engineering |
| **Semester** | | | | | 3rd |
| **Subject** | | | | | Non-Conventional Sources of Energy |
| **Work load (Theory + Practical ) Per Week** | | | | | (04+00) |
| **Week** | | **Theory** | | | |
|  | | **Day** | **Topics** | | |
| 1st | | 1 | **1 Basic of Energy** Classification of Energy- | | |
| 2 | Primary and secondary energy | | |
| 3 | Commercial and non- commercial energy | | |
| 4 | Importance of non-conventional energy sources | | |
| 2nd | | 1 | Present scenario, future prospectus | | |
| 2 | Energy scenario in India | | |
| 3 | Sector-wise energy consumption (domestic, industrial, agriculture etc.) | | |
| 4 | Revision | | |
| 3rd | | 1 | **2 Solar Energy** | | |
| 2 | Principle of conversion of solar radiation into heat, photo-voltaic cell | | |
| 3 | Electricity generation, application of solar energy | | |
| 4 | Solar water heaters | | |
| 4th | | 1 | Solar furnaces | | |
| 2 | Solar cookers | | |
| 3 | Solar lighting | | |
| 4 | Solar pumping | | |
| 5th | | 1 | Revision | | |
| 2 | **3 Bio-energy**: Bio-mass conversion technologies- | | |
| 3 | Wet and | | |
| 4 | Dry processes | | |
| 6th | | 1 | Methods for obtaining energy from biomass | | |
| 2 | Power generation by using gasifiers | | |
| 3 | Revision | | |
| 4 | **4 Wind Energy:** | | |
| 7th | | 1 | Wind energy conversion | | |
| 2 | Wind mills | | |
| 3 | Electricity generation from wind | | |
| 4 | Types of wind mills | | |
| 8th | | 1 | local control | | |
| 2 | Energy storage | | |
| 3 | Revision | | |
| 4 | **5 Geo-thermal and Tidal Energy:** | | |
| 9th | | 1 | Geo-thermal sources, | | |
| 2 | Ocean thermal electric conversion | | |
| 3 | Open and | | |
| 4 | Closed cycles | | |
| 10th | | 1 | Hybrid cycles | | |
| 2 | Prime movers for geo-thermal energy conversion | | |
| 3 | Steam Generation | | |
| 4 | Electricity generation. | | |
| 11th | | 1 | Revision | | |
| 2 | **6 Magneto Hydro Dynamic (MHD) Power Generation** | | |
| 3 | Working and construction | | |
| 4 | Advantages and disadvantages | | |
| 12th | | 1 | Revision | | |
| 2 | Problem solving/checking | | |
| 3 | **7 Fuel Cells** | | |
| 4 | Design and operating principles of a fuel cell | | |
| 13th | | 1 | Conversion efficiency | | |
| 2 | Work output and e.m.f of fuel cells, | | |
| 3 | Applications. | | |
| 4 | Revision | | |
| 14th | | 1 | Problem solving/checking | | |
| 2 | **8 Introduction to Hydro Energy** | | |
| 3 | Mini hydro plants | | |
| 4 | Micro hydro plants | | |
| 15th | | 1 | Revision | | |
| 2 | HSBTE old paper solution | | |
| 3 | HSBTE old paper solution | | |
| 4 | HSBTE old paper solution | | |