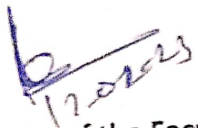


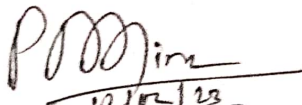
| DISCIPLINE ELECTRICAL | SEMESTER 6 TH | NAME OF THE TEACHING FACULTY Niranjan Nayak (Lect. inl&C) |
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| SUBJECT RENEWABLE ENERGY SYSTEMS | NO. OF DAYS/WEEK CLASSES ALLOTTED- 75 | SEMESTER FROM DATE 13.02.2023 to 23.05.2023 No. of week excluding holiday-15 |
| Class No. | Dates | THEORY TOPICS |
| 1 | 13.02.2023 | Environmental consequences of fossil fuel use. |
| 2 | 14.02.2023 | Importance of renewable sources of energy. |
| 3 | 15.02.2023 | Sustainable Design and development. |
| 4 | 16.02.2023 | Types of RE sources and limitations of RE sources |
| 5 | 17.02.2023 | Tutorial class (Recall of Types of RE sources and its limitation) |
| 6 | 20.02.2023 (9:00am-9:45am) | Present Indian and international energy scenario of conventional and RE sources |
| 7 | 20.02.2023 | Solar photovoltaic system-Operating principle |
| 8 | 21.02.2023 | Maximum power point tracking (MPPT). |
| 9 | 22.02.2023 | Photovoltaic cell concepts Cell, module, array, Series and parallel connections. |
| 10 | 23.02.2023 | Tutorial class (Recall of Types of RE sources and Solar photovoltaic system-Operating principle) |
| 11 | 24.02.2023 | Classification of energy sources and discuss Extra-terrestrial and terrestrial Radiation. |
| 12 | 27.02.2023 (9:00am-9:45am) | Azimuth angle, Zenith angle, Hour angle, Irradiance, Solar constant. |
| 13 | 27.02.2023 | Solar collectors, Types and performance characteristics |
| 14 | 28.02.2023 | Applications: Photovoltaic-battery charger, domestic lighting, street lighting. |
| 15 | 01.03.2023 | Tutorial class (Recall of Photovoltaic cell concepts Cell, module, array battery charger, domestic lighting, street lighting) |
| 16 | 02.03.2023 | Water pumping, solar cooker, Solar Pond. |
| 17 | 03.03.2023 | Tutorial class (Recall of Water pumping, solar cooker, Solar Pond) |
| 18 | 06.03.2023 (9:00am-9:45am) | Introduction to Wind energy |
| 19 | 06.03.2023 | Wind energy conversion. |
| 20 | 09.03.2023 | Types of wind turbines |
| 21 | 10.03.2023 | Tutorial class (Recall of working principle of wind energy) |
| 22 | 13.03.2023 | Aerodynamics of wind rotors |
| 23 | 14.03.2023 | Measurement of different parameters of wind turbines. |
| 24 | 15.03.2023 (9:00am-9:45am) | Conversion from mechanical power to electrical power of blades. |
| 25 | 15.03.2023 | Wind turbine control systems |
| 26 | 16.03.2023 | Tutorial class (Recall of Measurement of different parameters of wind turbines) |
| 27 | 17.03.2023 | synchronous generators |
| 28 | 20.03.2023 | Different types of synchronous generators and its working |
| 29 | 21.03.2023 (9:00am-9:45am) | Induction generators |
| 30 | 21.03.2023 | Different types of Induction generators and its working |
| 31 | 22.03.2023 | Tutorial class (Recall of synchronous generators and Induction generators) |
| 32 | 23.03.2023 | Self excited induction generator operation. |
| 33 | 24.03.2023 | Derivation of its voltage and frequency. |
| 34 | 27.03.2023 (9:00am-9:45am) | Grid connected generator operation. |
| 35 | 27.03.2023 | constant frequency generation with power electronic control. |
| 36 | 28.03.2023 | Constant voltage of Power grid (Derivation) |
| 37 | 29.03.2023 | Tutorial class (Recall and derive of frequency and voltage of IM) |

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| 38 | 31.03.2023 | Singleoutputsystems. |
| 39 | 03.04.2023 | Doubleoutputsystems |
| 40 | 04.04.2023 | Characteristicsofwindpower plant |
| 41 | 05.04.2023 | EnergyfromBiomass |
| 42 | 06.04.2023 | Tutorial class (Recall of Single and double output systems) |
| 43 | 10.04.2023 | BiomassasRenewableEnergySource |
| 44 | 11.04.2023 | Combustionandfermentation process. |
| 45 | 12.04.2023 | Anaerobicdigestion. |
| 46 | 13.04.2023 | Typesofbiogas digester |
| 47 | 15.04.2023 | Tutorial class (Recall of Combustionandfermentation) |
| 48 | 17.04.2023 | Woodgassifier |
| 49 | 18.04.2023 | Types and working principle of Woodgassifier |
| 50 | 19.04.2023 | Pyrolysis and its construction and working |
| 51 | 20.04.2023 | Applications:Biogas, Bio diesel and Also discuss its difference |
| 52 | 24.04.2023 | Tutorial class (Recall of Woodgassifier and Pyrolysis) |
| 53 | 26.04.2023 | TidalEnergy:Energyfrom the tides |
| 54 | 27.04.2023 | BarrageandNonBarrage systems |
| 55 | 28.04.2023 | Different tidalpowersystems. |
| 56 | 29.04.2023 | OceanThermalEnergyConversion(OTEC). |
| 57 | 01.05.2023 | Different types OceanThermalEnergyConversion(OTEC) |
| 58 | 02.05.2023 (3:00pm-3:45pm) | GeothermalEnergy |
| 59 | 02.05.2023 | Different types GeothermalEnergy |
| 60 | 03.05.2023 | Difference between OTEC and GeothermalEnergy |
| 61 | 04.05.2023 (3:00pm-3:45pm) | HybridEnergySystems |
| 62 | 04.05.2023 | NeedforHybridSystems |
| 63 | 05.05.2023 | Tutorial class (Recall of OceanThermalEnergyConversion(OTEC) and GeothermalEnergy) |
| 64 | 06.05.2023 | Diesel-PV and its working |
| 65 | 08.05.2023 | Wind-PV and its working |
| 66 | 09.05.2023 | Micro-hydel-PV and its working |
| 67 | 10.05.2023 | Difference between their characteristics of Diesel-PV Wind-PV |
| 68 | 11.05.2023 | Difference between their characteristics of Wind-PV Microhydel-PV |

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| 69 | 12.05.2023 | Tutorial class (Recall of Diesel-PV, Wind-PV, Micro-hydel-PV) |
| 70 | 15.05.2023 | Electric vehicles and its principle |
| 71 | 16.05.2023 | Different types of EV and principle |
| 72 | 17.05.2023 | hybrid Vehicles and its principle |
| 73 | 18.05.2023 | Principle of EHV. |
| 74 | 22.05.2023 | Tutorial class (Recall of Electric vehicle and hybrid vehicle. |
| 75 | 23.05.2023 | Previous Year questions and discussion. |


12/05/23

Signature of the Faculty


12/05/23
Signature of the HOD