PROGRAM NAME: POST GRADUATE DIPLOMA IN ENERGY MANAGEMENT (RENEWABLE ENERGY) PGDEM (RE)

PROGRAMME STRUCTURE

SEMESTER- I

Introduction to Renewable Energy

1. Introduction to Renewable Energy
2. Solar Energy
3. Wind Energy
4. Hydro Energy
5. Biomass Energy
6. Emerging and Hybrid Renewable Technologies

Fundamentals of Heat and Electricity

1. Graphing Functions, Domain and Range
2. Polynomial and Rational Functions
3. Limits
4. Derivatives
5. Integration
6. Current and Resistance
7. Introduction to Magnetic Fields
8. Faraday's Law of Induction
9. Thermodynamics
10. Heat Transfer Mechanisms

Renewable Energy Sources

1. Introduction to Renewable Energy Resources
2. Solar Energy
3. Bio-Energy
4. Wind Energy
5. Other Renewable Energy Sources
6. Green Hydrogen

Solar Energy: Fundamentals, Technology and Systems

1. History and Significance of Solar Energy
2. Fundamentals of Solar Energy
3. Emerging Solar Technology
4. Solar Energy Storage Mechanism
5. Future of Solar Technology

SEMESTER- II

Renewable Energy Technologies

1. Solar Energy
2. Bio Energy
3. Wind Energy
4. Other Renewable Energy Technologies

Shared Energy Infrastructure

1. National Grid operation and management
2. State Electricity companies
3. Load Dispatch Centres
4. Renewable energy integration with grid

Integration of Renewable Systems

1. Overview Grid Integration Issues of Renewable Energy Sources
2. Case Study – Renewable Integration
3. Harnessing and Integrating India's Renewable Energy Resources
4. Computer Aided Power Systems Operation and Analysis

Business Law

1. Indian Contract Act, 1872 – Part I
2. Indian Contract Act, 1872 – Part II
3. Special Types of Contracts
4. Partnership Act, 1932
5. Sale of Goods Act, 1930
6. The Negotiable Instruments Act, 1881
7. The Consumer Protection Act, 2019
8. Companies Act, 2013

SEMESTER- III

Health and Environmental Effects of Energy Consumption

1. Energy Consumption trend
2. Fossil Fuels: Environmental and Health Consequences
3. Nuclear Energy: Risks, Benefits and Safety
4. Renewable Energy: Opportunities and Challenges
5. Energy, Climate Change Impacts and Sustainability

Introduction to Energy Management and Auditing

1. Fundamentals of Energy Management
2. Energy Conservation Measures (ECMs)
3. Fundamentals of Energy Management Systems (EMS)
4. Effective Energy Audit Methodology
5. Energy audit instrumentation
6. Data and information analysis

Energy Conservation

1. Introduction to Energy Conservation
2. Science and Principles of Energy Conservation
3. Strategies and Technologies for Energy Conservation
4. Community Engagement and Energy Conservation
5. Evaluation, Financing, and Future Perspectives of Energy Conservation

Environment and Social impact assessment (ESIA)

1. Introduction To ESIA
2. Methodology For ESIA
3. Potential Environmental and Social Impacts Cum Mitigation Measures
4. Impacts During Operation Phase & Decommissioning Phase
5. Social Impact Assessments
6. Environmental And Social Management Plan (ESMP)
7. Case Study

SEMESTER- IV

Government Policies and Regulations

1. Government Policies and Regulations
2. Laws And Acts of Electricity in India
3. Regulations
4. State Governments Policies

Renewable Energy Economics

1. Policy issues and economic implications.
2. The Energy Transition -Economic Development Co-relation.
3. Economic Rationale for renewables
4. Market situation
5. Accelerating energy transition to
6. Renewables
7. Impact of renewable Energy Consumption on economics in India.

Project Work

Students are required to submit the project by the end of the semester IV.