

Course Title: Energy and Entrepreneurship (Elective Course)

Course Code: RE-823

Course Objectives: This course is intended to introduce students with Basic concepts of Entrepreneurship, share latest research and evolving pattern of data (Opportunities, implementing strategies, Challenges) with a specific focus on Renewable energy that has emerged a sustainable source of Energy. To enable graduates' Entrepreneurial skills to shape the future of their businesses by visualizing and implementing new ventures and models. To develop the capability of Market assessment and sustainability of their innovation and business Planning.

Course Outcomes:

On completion of this course, student should be able to:

- Understand the business models, its various subfields, and market dynamics within the energy industry.
- Enable students to identify relevant regulatory/ policy frameworks which govern the energy sector so they can navigate entrepreneurial ventures successfully.
- Graduates will be able to develop an entrepreneurial mindset, i.e., to identify, assess, and capitalize on emerging prospects within the energy sector and make an environmentally and socially responsible commitment.
- The designed course will also provide unique opportunity for students to interact and engage with young and established energy entrepreneurs (national/international) through seminar, invited guest lecture talks.

Detailed Contents:

Concepts of Entrepreneurship

Introduction to Entrepreneurship and Business Planning Techniques, Management of Renewable Energy, Feasibility Analyses and Project Management in Entrepreneurial Ventures of Renewable Energy, Entrepreneurial Strategy– Strategic tools and techniques in Business Planning, Venture strategy in dynamic markets

Introduction to Financial Business Planning in Entrepreneurship

Introduction to Financial Management for New Ventures: Financing a Startup, Innovation of Renewable Energy Companies, Challenges, Business opportunities, Entrepreneurial Financing Process: Buying and Selling a Venture.

Case studies of Renewable Energy for Entrepreneurship opportunity

Advanced Technologies for New business, Space-Based Solar Energy, Advanced Car Batteries, Renewable Energy Storage, Carbon Capture and Storage and Next Generation Biofuels, Moving from RE Ideas to Business Implementation (Possible Examples below) Solar Car, Solar Bicycle

Fuel Cell Car, Biogas Cylinders, Green Building Design and Products, Wind Power Powered Light Bulbs, Motors, Energy efficient house Model, Energy Efficient Radio - Smart Product Development, Prototype of Smart Technologies

National and international Regulations for Renewable energy Business

Energy Policy, Renewable energy policy, Product standards, Supply chain regulation, Import and Export Regulations, Financial Support or Relaxation by the Government, International Market, Financial Flows

Text/Ref Books:

- Amina Omrane et al. Sustainable Entrepreneurship, Renewable Energy-Based Projects, and Digitalization – 1st Edition, CRC Press (2020)
- Rolf Wüstenhagen (Author, Editor) & Robert Wuebker (Author, Editor) Handbook of Research on Energy Entrepreneurship – 1st Edition
- Adrian Dumitru Tantau (Author, Editor) & Laureniu Ctlin Fril (Editor) Entrepreneurship and business development in Renewable Energy Sector – 1st Edition, IGI Global (2017)
- Manoj Kumar Ghosal Entrepreneurship in Renewable Energy Technologies – 1st Edition, CRC Press (2023)