

Syllabus Outline

1. GENERAL

Energy is required for progress of individuals, society, economy, and countries. Understanding of global energy scenario helps in many ways including better planning, sourcing, and efficiently meeting energy requirements of a country.

1.1 COURSE TITLE: **Global Energy Scenario**

1.2 COURSE NUMBER: MT5203

1.3 CONTACT HRS: (30 Hours- Teaching & 10 hours- Project) Credits: 08

1.4 SEMESTER -OFFERED: Even Semester

1.5 PREREQUISITE: Basics of energy

1.6 SYLLABUS COMMITTEE MEMBER: Dr. S K Kar & Dr. M S Balathanigaimani

2. OBJECTIVE

- To provide overview of the global energy industry including Petroleum and Natural Gas industry.
- The course intends to offer insights into the industry structure, business segments, major players, world energy market, sources of conventional and unconventional energy, energy trade, energy pricing, and challenges faced by the energy industry.
- To enable participants to develop a holistic perspective on emerging energy scenarios across the globe.

Unit I

(06 hours)

- Introduction to Energy & Energy Security
- Geopolitics and Global Energy Scenarios
- Energy Security: Role of Conventional Energy –Oil & Coal

Unit II

(06 hours)

- Natural Gas
- Global, region wise and country wise reserves
- Global, region wise and country wise actual production
- Global, region wise and country wise actual consumption
- Natural gas trade movement: Pipeline & LNG
- Natural gas Value Chain
- Natural gas transport
- Emergence of Unconventional Sources
- Shale gas
- Gas Hydrates
- Coal Bed Methane

Unit III

(06 hours)

- E&P Policy Global Perspective
 - Global E&P policies & practices
 - Case studies from US, Europe, and Africa
- E&P Policy Developments in India
 - Nomination Policy
 - New Exploration & Licensing Policy (NELP)
 - Hydrocarbon Exploration Policy (HELP)

Unit IV

(06 hours)

- Upstream, Midstream, and Downstream
 - Exploration & Production
 - Crude Pipelines
 - Petroleum Product Pipelines
 - Natural Gas Pipelines
- Refining, Storages, Transportation, and Marketing
 - Refinery Industry
 - Refinery Economics
 - Product Ranges
 - Storage & Distribution
 - Pricing
 - Marketing & Retailing

Unit V

(06 hours)

- Downstream Regulatory Developments
 - Evolution of downstream Regulator
 - Petroleum & Natural Gas Regulatory Board Act
 - Role, responsibilities, and authorities of PNGRB
- Renewable Energy
 - Potential, availability, actual production, and future targets
 - Policy initiatives and action plans
 - State level Renewable Energy Policies

1.1 TEXT BOOKS:

- No text book

1.2. Reference Books:

- The Global Oil & Gas Industry: Management, Strategy and Finance by [Andrew Inkpen](#) and [Michael H. Moffett](#)

5. Course Outcomes:

- On the completion of this course the participants are expected to:
- Develop understanding of energy industry in general and oil & gas in specific
- Understand dynamics of demand-supply and trade of oil & gas
- globally
- Understanding of changing dynamics of global energy industry