



FACULTY OF ENGINEERING & TECHNOLOGY

Second Year Master of Technology

Branch: Renewable Energy

Course Code: 102450302

Course Title: ENERGY ECONOMIC, POLICY & REGULATION ACT

Type of Course: Professional Elective Course

Course Objectives: To understand the role of energy in economic development and social transformation.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
Lecture	Tutorial	Practical		Internal		External		Total
				Theory	J/V/P*	Theory	J/V/P*	
3	0	2	4	40/16	20/08	60/24	30/12	150/60

* J: Jury; V: Viva; P: Practical

Detailed Syllabus:

Sr.	Contents	Hours
1	INTRODUCTION TO ENERGY CODES AND POLICIES: Energy Conservation act, Electricity Act and amendments. GLOBAL ENERGY SCENARIO: Role of energy in economic development and social transformation, Energy & GDP, GNP and its dynamics. Discovery of various energy sources, Energy Sources and Overall Energy demand and availability, Energy Consumption in various sectors and its changing pattern, Exponential increase in energy consumption and Projected future demands, Non-conventional and conventional energy Resources: Coal, Oil, Natural Gas, Nuclear Power and Hydroelectricity, Solar and Other Renewable etc.	08
2	INDIAN ENERGY SCENARIO: Energy resources & Consumption, Commercial and non-commercial forms of energy, Fossil fuels, Renewable sources including Bio-fuels in India and their utilization pattern in the past, present and future projections of consumption pattern, Sector wise energy consumption. Impact of Energy on Economy, Development and Environment, Energy for Sustainable Development, Energy and Environmental policies, Need for use of new and renewable energy sources, present status and future of nuclear and renewable energy, Energy Policy Issues related Fossil Fuels, Renewable Energy. Power sector reforms, restructuring of energy supply sector, energy strategy for future. Energy Conservation Act-2001 & its features, Electricity Act-2003 & its features. Framework of Central Electricity Authority (CEA), Central & States Electricity Regulatory Commissions (CERC & ERCs)	13



3	ENERGY POLICY: Global Energy Issues, National & State Level Energy Issues, National & State Energy Policy, Industrial Energy Policy, Energy Security, Energy Vision. Energy Pricing & Impact of Global Variations. Energy Productivity (National & Sector wise productivity). Role of MNRE, IREDA, Bio Energy Policy, Solar Policy, Hydro Policy, Wind policy, National Solar Mission, Renewable purchase obligations	09
4	FINANCIAL TOOLS: Incentives and subsidies, calculation of required subsidy for penetration, concept of shadow price Concept of micro-financing for RE, funding agencies for RE projects in India, application development for RE funding Tariff policies, use of Demand Side Management as a policy tool.	09

Suggested Specification table with Marks (Theory) (Revised Bloom’s Taxonomy):

Distribution of Theory Marks						R: Remembering; U: Understanding; A: Application, N: Analyze; E: Evaluate; C: Create
R	U	A	N	E	C	
15%	25%	25%	25%	10%	0%	

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1	Energy for a sustainable world: Jose Goldenberg, Thomas Johansson and A.K.N.Reddy.
2	Energy policy B.V.Desai, Weiley Eastern
3	Modeling approach to long term demand and energy implication J.K.Parikh
4	Energy Policy and Planning B.Bukhootsow
5	Principles of Energy Conversion A.W. Culp, McGraw Hill International edition
6	Energy Economics, Concepts, Issues, Markets and Governance by SC Bhattacharyya, Springer Science & Business Media

Course Outcomes (CO):

Sr.	Course Outcome Statements	%weightage
CO-1	Knowledge of Current Energy Scenario in India.	40
CO-2	To understand the need for government policies in energy and environment sector.	30
CO-3	Understanding of financial tools.	30



List of Practicals / Tutorials:

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1	To study about introduction to energy codes and policies.
2	To study role of energy in economic development and social transformation.
3	To study about Indian energy scenario.
4	To study impact of energy on economy, development and environment.
5	To study Energy conservation act-2001.
6	To study about National & State energy policy.
7	To study about energy productivity.
8	To study about the role of MNRE, IREDA in energy policy.
9	To study energy productivity.
10	To study about financial tools for energy policy management.

Supplementary learning Material:

1	https://beeindia.gov.in/
2	https://geda.gujarat.gov.in/

Curriculum Revision:

Version:	1
Drafted on (Month-Year):	Apr-21
Last Reviewed on (Month-Year):	Jul-21
Next Review on (Month-Year):	Apr-23