



SPAV  
Course

# 10



## Energy Studies in Environmental Planning



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### **Description of course**

#### **Aim:**

To introduce the fundamental concepts of quantification-based assessment of energy consumption.

#### **Course Objectives:**

This course shall pave the way to explore the concepts of energy studies pertaining to spatial planning.

#### **Learning Outcomes:**

To Understand the energy consumption, assessment, accounting and auditing for promoting efficient energy use.

### **Course Structure**

#### **Course Duration:**

One semester (15-16 weeks) – 48 hours in total



### **Course Frequency:**

Every Odd Semester of MEPM, II Year

### **Course Format:**

Course format includes Lectures, Workshops and Short-term Project

### **Course Content**

#### **Prerequisites for Participation:**

Pre-registration for the courses before the start of the semester.

#### **Course Syllabus:**

1. *Principles of Energy: Sources and Consumption:*

*Energy Demand and Supply; sources of energy and typology of energy available at source; Quantification of Resource Consumption and patterns of consumption; Relating energy consumption patterns with sectors – residential, commercial, transport, etc.*

2. *Cluster & Group Based Energy Use*

*Energy efficiency and ISO; Introduction to ISO; ISO-14000 and its Planning Implications; Case Study of an ISO certified industry, Environmental and Financial Benefits of ISO; Cluster Based Environment Management approach & Group Environmental Management System.*

3. *Monetary valuation techniques*

*Monetary valuation techniques – Cost Benefit Analysis, Natural Resource Accounting, Pricing, Non-use Value, Techniques of monetary evaluation/ valuation methodologies; Energy Audit; Conservation Issues.*

4. *CDM and Carbon Credit*

*Concepts of cleaner development mechanism; Life cycle analysis; Carbon trading / GHG emissions.*

5. *Energy efficiency and Re-use*

*Energy vis-a-vis concept of smart cities; Solar city mission in India; Renewable energy concept and its application in planning; Green cities and its energy implication, energy footprint.*

#### **Course Assignments:**

Reading materials on energy studies in planning

#### **Expected Time Spent on Course:**

Time spent in hours: minimum 48 hours

Time spent in ECTS (European Credit Transfer and Accumulation System): 3 Credits



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## **Course Evaluation**

### **Evaluation Procedure & Criteria:**

1. *Student assignments – Presentation by students – 30% weightage*
2. *Mid semester written examination – Theory – 20% weightage*
3. *End Semester written examination – Theory - 50% weightage*