

Course-Plan

School: **Engineering**
 Department: **Energy**
 Course Code: **EN 573 (0 0 2)**
 Course Name: **Energy Study with Community Engagement**
 Instructor: **D C Baruah**
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1. Abstract:

This course will enable learners to understand real life problems related to energy through community engagement. The learners will be able to integrate the knowledge, skills, and attitudes towards the solution of field problems related to access of energy through community engagement. Learners will gain practical and real-life understandings of key issues of energy supply and demand pattern in the communities. The course will enable them to understand the best practices and processes towards successful application of energy related systems. The course will develop critical thinking of the learners towards protection of environment and livelihood improvement in the villages

2. Course Outcomes:

CO1: Recognize the linkage between socio-economic factors and energy consumption pattern through community engagement

CO2: Apply appropriate knowhow related to energy for improvement of livelihood of the community

CO3: Assess the impact of energy systems on rural livelihood and present reports

3. Prerequisites of the course: *(What are the basic skills expected from the students or the courses s/he must have completed while opting for the course.)*

Basic knowledge on various energy systems and exposure to communities

4. Course outline + suggested reading:

The learners will carry out the study through field visits engaging with various communities of their choices under the guidance of course instructor. A suggestive plan of activities is provided below:

Time plan/Evaluation	Activities and Evaluation Components
Up to 4 th Week	Identification of the thematic area of study (some examples are (but not limited to): assessment of energy resources, energy consumption pattern, study on energy conversion technologies/ devices used by community, economics of energy services, comparisons of energy systems and technologies)
Test I:	Submission of brief plan of work recognizing the linkage between socio-economic factors and energy consumption pattern (CO1 for 20 marks)
5 th Week to 8 th Week	Preparation of the plan of community engagement for energy Study (Suggested plan should include (i) objective of study, (ii) study area, (iii) schedule of visit, (iv) data to be recorded, (v) methods of analysis and (vi) expected know-how to be generated)
Mid term	Presentation of detail work plan indicating the importance of energy access in relation to the status of the community (10 marks for CO1) Status of livelihood in relation to energy access (20 marks for CO2)
10 th Week to 14 th Week	Community engagement, data collection, analysis and intervention (Technological innovation towards application specific system design and community participation in the design process. System must integrate the community's requirements and present practices)
Test III	Presentation on issues identified (CO2 for 10 marks) and potential solutions (CO3 for 10 marks)
15 th Week to 16 th Week	Analysis of community feedback
End term	Report preparation and presentation Understanding on the linkage between socio-economic factors and energy consumption pattern (CO1 for 10 marks) Can improve energy access improve livelihood (CO2 for 15 marks) Feedback analysis and recommendation with justification elaborating possible impact of energy systems on rural livelihood (CO3 for 15 marks)

Suggested reading materials: Course instructor will suggest reading and reference materials depending upon the nature of the study.

5. CO-PO mapping:

	C01	C02	C03
P01: An ability to apply science and engineering principles related to design and process of energy conversion, energy management and energy economics and planning for sustainable development	***		
P02: An ability to independently carry out research/investigation and development work to solve practical problems	**		
P03: An ability to analyse complex problems in the field of energy engineering critically and to use modern simulation tools to model and analyze problems related to energy engineering and management.		***	
P04: Ability to write and present a substantial technical report/document			**

6. Pedagogy

Major components of teaching learning method are:

- Discussion
- Field visit and Case study
- Analyzing field problems