

Energy Engineering (ENER)

OUTCOMES-BASED APPROACH (OBA) TEACHING

Mission Statement

- To educate and equip students with fundamental knowledge and practical experience in energy engineering covering the related areas of generation, storage, consumption, distribution, and management.
- To prepare our graduates to embark on a broad base of successful careers as practitioners, academics, entrepreneurs, and leaders in the field of energy engineering and beyond.

Programme Objectives

1. **Fundamental understanding and knowledge of the scientific principles and mathematics in energy technologies and systems**
2. **Application of acquired knowledge in analyzing and solving energy engineering problems**
3. **Practical experience in energy system design, operation and development**
4. **Experience in using engineering tools**
5. **Ability to pursue specialized areas within the related fields of energy engineering**
6. **Effective communication, management, and teamwork skills**
7. **Ethical values and responsibilities as professional engineer and member of local and world communities**
8. **Motivation in professional development and life-long learning**

Desired Outcomes

General Criteria	Description of Desired Outcomes for ENER Programme
(1)	Acquired basic science and engineering knowledge , including physics, mathematics, mechanics, thermodynamics, heat transfer, power electronics, material science, chemistry, biology, and environmental science
(2)	Acquired the ability to design and conduct experiments , as well as to analyze and interpret the data obtained
(3)	Developed the ability to design and build energy components, structures, processes or systems to meet targeted needs in specific applications
(4)	Acquired the ability to function as a member of an interdisciplinary team
(5)	Acquired the ability to identify, formulate and solve real-life engineering problems related to energy generation, storage, transmission, distribution, efficiency optimization, consumption management, and various tradeoffs involved
(6)	Acquired the understanding of professional and ethical responsibilities in energy engineering
(7)	Developed proficiency in technical communication (both oral and written)
(8)	Acquired a broad understanding of the importance of economic, environmental, political, social and other global implications of energy engineering issues
(9)	Acquired knowledge in historical and contemporary issues
(10)	Acquired the ability of independent and lifelong learning
(11)	Acquired the ability to use the techniques, skills and tools to practice in the energy engineering discipline and be aware of entrepreneur opportunities
(12)	Acquired the ability to use the computer/IT tools relevant to the discipline along with an understanding of their processes and limitations
(13)	Established a good understanding and vision of the energy industry comprising different forms of conventional and renewable energy technologies, nuclear energy and their environmental implications