

Certificate in Energy Technology and Management (CETM)

INFORMATION BROCHURE



**School of Engineering and Technology
Indira Gandhi National Open University
Maidan Garhi, New Delhi - 110 068**

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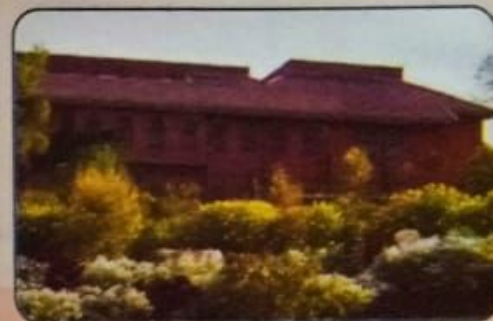
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ABOUT THE UNIVERSITY

Indira Gandhi National Open University (IGNOU) was established in 1985 by an Act of Parliament with a view to democratise education and improve the quality of life of our people. IGNOU has now emerged as the largest



University in the world. It is mandated to cover large segments of population across the length and breadth of the country particularly the disadvantaged groups of society engaged in various vocations and professions. The primary emphasis is on innovation, flexibility and cost-effectiveness. The University follows a learner-centric approach. It has successfully adopted a policy of openness and flexibility in terms of relaxed entry qualifications and provision for multiple entry and exit, pace and place of study, etc.

At present, IGNOU is offering more than 300 programmes and has over 2 million students on its roll. The University operates through a strong network of 63 Regional Centres. There are over 2000 Study Centres / Programme Study Centres across the country, which provide individualised support to the learners. Most of these centres are equipped with the state-of-the-art tele-conferencing facility. The University produces high quality and rich content courseware for its learners for which the IGNOU was conferred an Award of Excellence for Distance Education Materials by the Commonwealth of Learning (COL), Canada.

OEY - 003: Energy Management: Audit and Conservation

Objectives

- *To understand the Principles of Energy Conservation;*
- *To understand Energy Audit Techniques;*
- *To identify Energy Conservation Measures;*
- *To classify Energy Conservation Measures as Short, Medium and Long Term;*
- *To know Energy Efficient Devices;*
- *To understand how to make energy plan at village level.*

Block - 1 : Principles of Energy Audit

Block - 2 : Principles of Energy Conservation

Block - 3 : Energy Conservation Measures-I

Block - 4 : Energy Conservation Measures-II

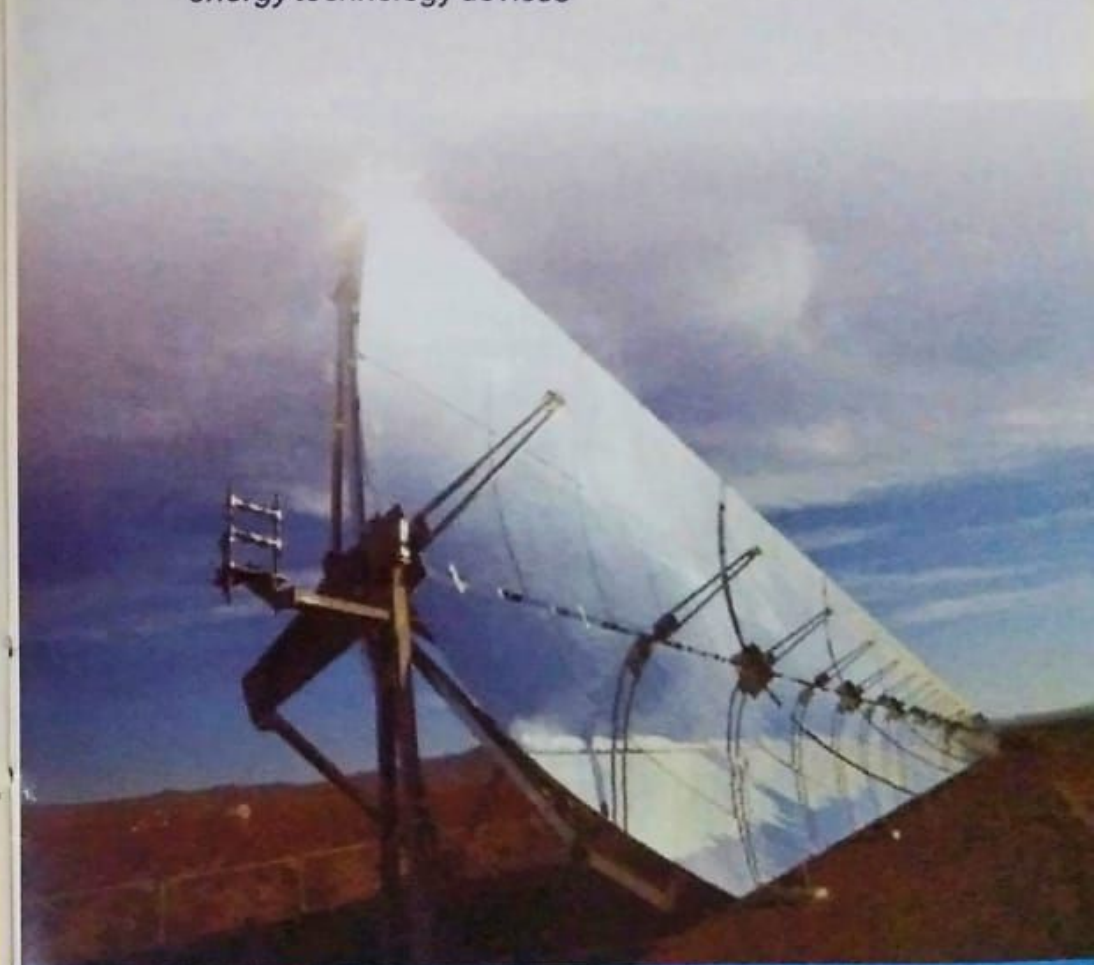
Block - 5 : Energy Planning and Management



OEYP 004 : Energy Projects

Objectives

- *To visit various energy technology installations for getting first hand information about state of the art and their working conditions and operational aspects and to make project on energy technology devices*



CERTIFICATE IN ENERGY TECHNOLOGY AND MANAGEMENT (CETM)

IGNOU Regional Centre Delhi-1 in collaboration with School of Engineering and Technology (SOET) offers Certificate in Energy Technology and Management (CETM).

AIM OF THE PROGRAMME

The energy scene in India is a complex mix of a variety of energy sources being used to meet the growing energy needs. The gap between the demand and supply is continuously increasing. The decentralized generation, based on renewable energy technologies, is perhaps the only way to provide electricity to all those who need it. Almost three-fourths of the total energy used in rural areas is in the household sector and over 90% of rural household energy is obtained from fuel wood, animal dung and crop residues.

Improving energy use efficiency and increasing the level of energy supply are the key factors for improving socio-economic status of rural people. The biomass option can become alternative for the sustainable development of rural areas. The availability of commercial energy in the rural areas is very poor and the low purchasing power of the rural people virtually keeps them away from their reach. The energy in rural areas is primarily used for cooking, lighting and agricultural operations. Energy is being consumed at very low efficiency in rural areas.

The energy substitution, which means substituting renewable energies in place of commercial energies (coal, oil, gas and electricity) in all major application areas wherever possible, is need of the hour. The energy efficiency, which ensures the use of energy efficient devices, is also equally important.

The importance of increasing use of renewable energy sources for the sustainable energy development was recognized in India in the early 1970s. Since then a significant effort has gone into the development, trial and induction of a variety of renewable energy technologies for use in different sectors of the economy and sections of society.

CETM aims at equipping all its students about various energy resources, energy conversion processes, energy use, energy conservation, energy planning and management.

PROGRAMME DETAILS

OEY - 001: Energy Resources and Conversion Processes

Objectives

- *To understand the meaning of Energy;*
- *To understand different Conventional Energy Resources;*
- *To understand different Renewable Energy Resources;*
- *To understand Various Energy Conversion Processes.*

Block - 1 : Conventional Energy Sources

Block - 2 : Renewable Energy Sources

Block - 3 : Energy Conversion Processes



OEY - 002 : Renewable Energy Technologies and their Uses

Objectives

- *To understand the meaning of Solar Radiation*
- *To understand various Solar Thermal Technologies*
- *To understand Solar Photovoltaic Principles and Power Generation*
- *To understand Biomass Energy and Technologies*
- *To understand Solar Active and Passive Buildings*

Block - 1 : Solar Thermal Technologies

Block - 2 : Solar Photovoltaic Technologies

Block - 3 : Biomass Based Energy Technologies

Block - 4 : Solar Drying Systems

Block - 5 : Solar Heating and Cooling of Buildings



OBJECTIVES of CETM

The main objectives of CETM are :

- To give an over view of various energy resources, their availability and use pattern;
- To give an exposure about environmental impacts of energy use;
- To give an overview of Renewable Energy Technologies;
- To conduct an energy audit and implement energy conservation measures;
- To see the importance of Energy, Economy and Environment interaction;
- To become an expert so as to rectify renewable energy technologies;
To know how to make energy plan;
- To know about energy efficient devices for energy conservation.

PROGRAMME STRUCTURE

There are four courses in the programme. The total credits of a course have been worked out on the basis of course content and their weightages. The details of CETM are as follows :

Course Code	Title of the Course	Credits
OEY - 001	Energy Resources and Conversion Processes	4
OEY - 002	Renewable Energy Technologies and Their Uses	6
OEY - 003	Energy Management: Audit and Conservation	6
OEYP - 004	Energy Projects	4

Some pertinent details of the programme are given below :

Programme Duration	: 6 Months (Minimum) and 2 Years (Maximum)
Programme Fee	: Rs. 2,000 + Rs. 100 (Registration Fee)
Age	: No bar
Admission Eligibility	: 10th Pass
Medium of Instruction	: English

The programme delivery mechanism for the Certificate in Energy Technology and Management (CETM) shall be as follows :

- The programme will be delivered through a network of Regional Centres and Study Centres;
- Initially there will be one study centre activated in each Regional Centre jurisdiction. The existing Study Centres activated for B.Sc. programme will be activated for CETM;
- The Academic Counsellors approved for Physics courses will also be eligible for CETM;
- The payment norms for various academic activities will be similar to those of B.Sc. Programme. The Project Report evaluation and payment will be done as per university norms;
- The admitted students will be attached to a Study Centre where they will get the academic support (counselling sessions, assignments submission etc);
- There will be one assignment for each course OEY-001, OEY-002 and OEY-003;
- For the course OEYP-004, there will be a comprehensive workbook. Each student will complete the workbook as per the guidelines given in the workbook. These are to be submitted as per schedule given in the workbook.

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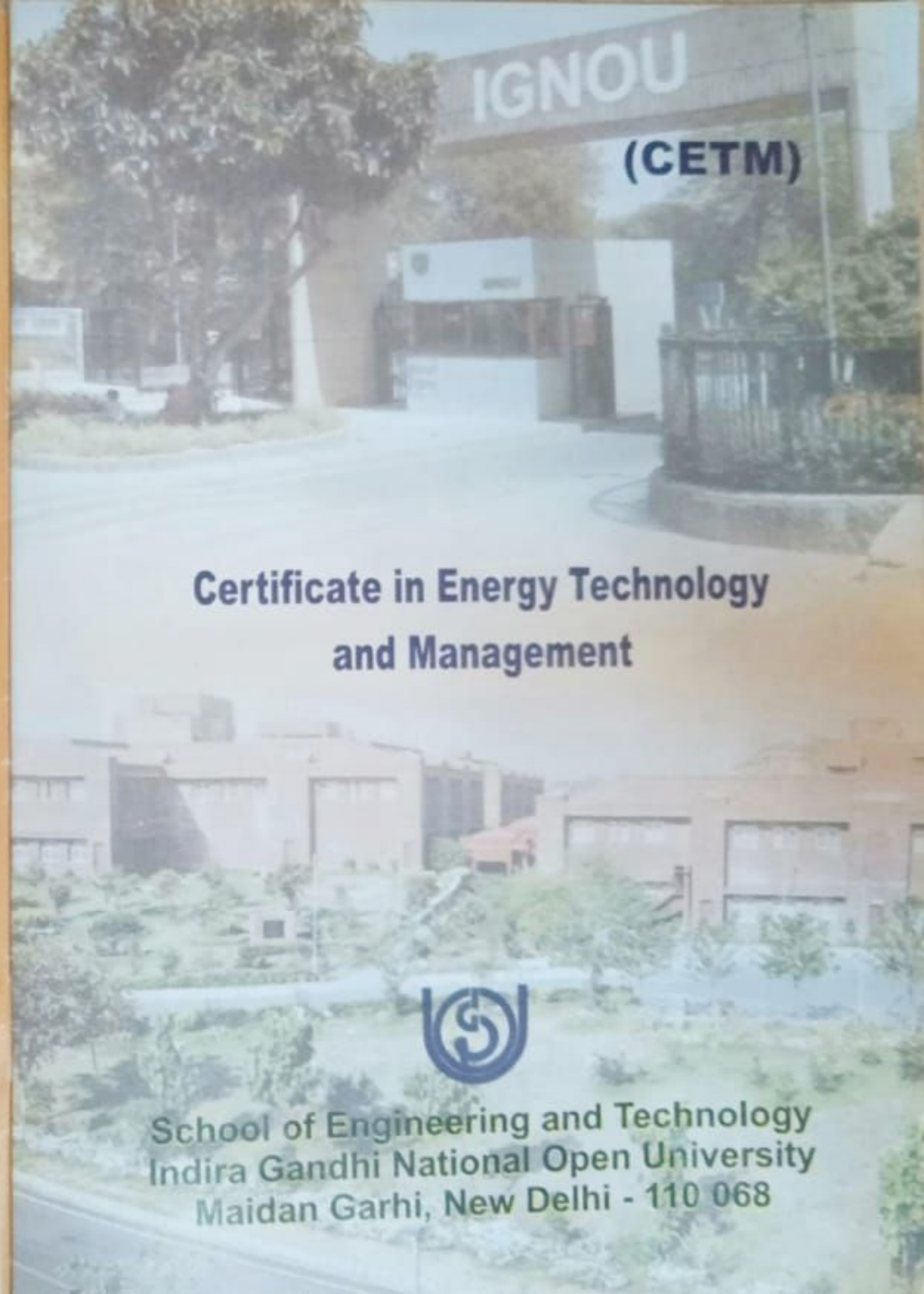
“शिक्षा मानव को बन्धनों से मुक्त करती है और आज के युग में तो यह लोकतंत्र की भावना का आधार भी है। जन्म तथा अन्य कारणों से उत्पन्न जाति एवं वर्गगत विषमताओं को दूर करते हुए मनुष्य को इन सबसे ऊपर उठाती है।”

— इन्दिरा गांधी



“Education is a liberating force, and in our age it is also a democratising force, cutting across the barriers of caste and class, smoothing out inequalities imposed by birth and other circumstances.”

— Indira Gandhi



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