CENTRE FOR ENERGY STUDIES
IIT DELHI

Contributing to fulfill Research and Development in the area of Energy Engineering.

PLACEMENT BROCHURE | 2020-2021
Mission

Shaping a new generation of ‘Energy Engineers’ and thereby contributing to fulfill the need of trained manpower as well as research and development activities in the area of energy engineering.

"We Do Not Inherit the Earth from Our Ancestors; We Borrow It from Our Children"

- Chief Seattle

Vision

To develop, install, operate, and maintain sustainable energy solutions for meeting the energy demand of the society.
It is my great pleasure to introduce that the Centre for Energy Studies (CES) of Indian Institute of Technology Delhi which is a pioneer in Energy Education in this country, provides the requisite manpower for contributing to all aspects of the targeted development and deployment of energy, and energy & environment technologies on a global scale. CES students are keen to take up exciting careers in the energy sector and in the interface of energy and environment with increasing worldwide emphasis on low or zero carbon energy delivery.

Our CES students could surely make valuable contributions towards responding to the energy needs of the society, contributing as leaders in technology advancements and management initiatives, contributing as innovators and technologist providing solutions to one or more of the intricate issues of the energy sector and acting as consultants and resource experts / engineers with a large variety of public and private sector entities engaged in the energy sector. It is a proud moment to recall that our CES alumnis in various capacities make their excellent contribution for development of sustainable energy & environment.

I am sure that our young intellectual minds graduating from CES could provide sustainable technological and management solutions to the industries / organizations from upstream to downstream energy sectors and associated technologies pertaining to energy and environment interaction.
The Centre for Energy Studies (Estd.1976) at IIT Delhi is an interdisciplinary centre offering Master’s degree and Doctorate.

The centre drives its strength from the disciplines of Mechanical, Electrical, Chemical Engineering and Physics. It aims to provide clean and renewable energy solutions for sustainable development of Energy and Environment.
Programmes Offered

M.Tech

- Energy studies
- Energy & Environment Technologies and Management
- Renewable Energy Technologies and Management (Sponsored Program by ISA)

Domains of Interest

- Electrical Power and Renewable Energy Systems
- Solar Photovoltaics
- IC Engines
- Solar Thermal
- Fuel Technology
- Plasma Physics
Energy Studies (JES)

JES is a two-year postgraduate programme running at Centre for Energy Studies, IIT Delhi since its inception in 1981. This programme mainly focuses on courses lab works which focus on dealing with energy efficiency, electrical & thermal aspects of power plant engineering, environmental compliance, sustainable energy and renewable energy technologies along with its economics with the application of science and engineering to the problems in energy.

### Core Courses:
- Economics and Planning of Energy Systems
- Heat Transfer
- Energy Conservation
- Energy, Ecology & Environment
- Fuel Technology
- Direct Energy Conversion
- Non-Conventional Sources of Energy
- Energy Laboratory

### Programme Electives:
- Power Plant Engineering
- Power Generation, Transmission & Distribution
- Integrated Energy Systems
- Hydrogen Energy
- Solar Photovoltaic Devices and Systems
- Wind Energy & Hydro Power Systems
- Solar Energy Utilization
- Operation and Control of Electrical Energy Systems
- Zero Emission Vehicles
- Electrical Power Systems Analysis
- Fusion Energy/Advanced Fusion Energy
- Solar Thermal Power Generation
ESN programme is designed to provide deeper understanding of the interrelationships between energy sector and environmental challenges. It aims at refining and strengthening of academic competence in a variety of interdisciplinary backgrounds and provides an applied focus for postgraduates with a strong professional and industrial orientation. The professional profiles of these students on successful completion of the programme include Energy & Environment Technocrat, Energy Environment Engineer, Energy Manager, and Energy Efficiency Consultant.

**Core Courses:**

- Industrial Energy and Environment Analysis
- Non-Conventional Sources of Energy
- Energy and Environment
- Quantitative Methods for Energy Management and Planning
- Electrical Energy Management
- Cogeneration and Energy Efficiency
- Fuel Technology
- Energy & Environment Laboratory

**Programme Electives:**

- Energy Audit
- Developing Energy Efficiency and Renewable Energy Projects
- Power System Planning and Operation
- Economics and Financing of Renewable Energy Systems
- Operation and Control of Electrical Energy Systems
- Environmental Audit and Impact Assessment
- Distributed and Decentralized Energy Systems
- Battery Storage
**M.Tech Labs**

### IC Engine and Alternate Fuel

- AVL Research Engine
- Smoke meter
- VISEOFEM
- FTIR and NDIR Analysers
- Combustion and Exhaust Analysers
- SI, CI and HCCI Engine setup for DME, CNG, Hydrogen, Biodiesel fuel

### Electrical Power and Renewable Energy Systems

- Wind and Small Hydro Lab
- Wind and Solar System Emulator
- Transmission Line Models
- Smart DC home, Smart Meters
- Unbalanced Distribution Models
- Power Flow and Stability Analysis
- State Estimation and Optimal Power Flow Studies
- Power Electronic Converters, Renewable Energy Integration
Plasma Physics

- Software On Beam Propagation Methods and Self Organization/Chaos
- High Resolution Spectrometer For Plasma Emission Spectroscopy
- Large Volume Plasma System (volume-2 cu.m)
- Compact ECR plasma sources
- Microwave Generator at 2.45 GHz up to 5 kW Power
- Atmospheric Pressure
- Plasma Jet

Solar Thermal and Refrigeration

- Light Pipe System
- Thermal Imaging Infrared Camera
- Differential Scanning Calorimeter
- Solar Pyranometer and Pyrheliometer
- Ultrasonic Homogenizer
- Thermocouple Calibrator
- Heat Pipe
- Thermoelectric Generator/Refrigerator Setup
- Solar PV Based Thermoelectric Cooling System
Fuel Technology

- Control of Pollution from Fuel Firing
- Oil from Wastes
- Coal Desulphurization and Coal Cleaning
- Conversion of Coal to Liquid
- Carbon Emission Control
- Gas Chromatography: Gas analyser
- Muffle Furnace: Proximate Analysis of Fuels
- BOD Incubator with Rotaryshaker

Solar Photovoltaic

- Silicon cell characterisation and fabrication
- Plasma Cleaner
- Solar Simulator
- Thermal Evaporator
- UV Visible Spectrography
- Impedance Analyser
- Photo luminescence Quantum Efficiency
- PV powered PEFC Fuel cell system
Our Activities

We do forum 'Energy Forum'

Energy Forum is the student's society where we unite together as a team. Have a glimpse at what we do..

Visit to ONGC
2nd Assembly of International Solar Alliance
A Discussion of Projects From CEEW
Data Analytics and ML Lecture from MathWorks India
Relief From Stress: That's a Cricket Tournament
ONGOING FUNDED PROJECTS

- Design and demonstration of sustainable building infrastructure (Yardi Systems, USA)
- Development of tools and techniques for future unbalanced distribution system operation with integration of RES, EVs, BESS and DSM (SERB, DST)
- Demonstration of effective technology solution to eliminate and use waste from municipal drains in delhi (Office of Principal Scientific Advisor, Govt. of India)
- Demonstration of grid supportive EV charger and charging infrastructure at LT level (D-EVCI) (DST)
- Development of a methanol-gasoline fuelled spark ignition engine (SERB, DST)
- Development and demonstration of enhanced performance of the commercial automotive vehicle with alternative transportation fuel (DST)
- Thermochemical conversions of lignocellulosic biomass/wastes into bioenergy and biofuels with its utilization in internal combustion engine (DST, Govt. of India)
- Strategic university network to revolutionise Indian solar energy (SUNRISE), EPSRC Polaris House
- Power to the people: Democratising energy through decentralized manufacture and production of affordable, reliable, sustainable solar power (Global Challenges Research Fund (GCRF), Swansea University, UK)
Some of our funding agencies

We are active in high end research activities and collaborated with numerous prestigious agencies. Average Funding received in last four years (2016 - 2020) - 21.59 cr approx (215.9 million)
Meenu Gupta, ME
  • IC Engine, Power Plant
  • Artificial Intelligence

Mohammed Shahid Bhati, EE
  • Renewable Technologies
  • Power System Operation and Control

Nidhi Nika, EEE
  • Portfolio Optimization
  • Machine Learning

Nikita Shreya, EE
  • Solar Photovoltaics and Power Electronics
  • Blockchain in Energy Market

Rahul, EE
  • Solar Photovoltaics
  • Machine Learning

Rishav Kumar Jha, EE
  • Power Electronics
  • Power System Operation and Control

Sawane Kiran B, ME
  • Machine Learning
  • Energy Economics

Shivali Raut, EE
  • Power Electronics
  • Electrical Machines

Shivani Mongs, ME
  • Solar Energy, Fuel Cells
  • Business Analytics

Subham Gupta, ME
  • Industrial Energy Management
  • Green Economics

Subodh K Mehta, ME
  • Electric Vehicles
  • Energy Economics

Suman Bharti, ME
  • Machine Learning and Data Science
  • Developing of RE Projects

Sumer Singh, ME
  • Thermal and Energy Conservation

Sushil K Salvi, ME
  • Hydrogen Fuel Cell Vehicles
  • Energy Efficiency

Trishti Gupta, EE
  • Power System Optimization
  • Portfolio Optimization in Electricity Market

Vivek Kumar, ME
  • HVAC and Energy Efficiency
  • Economic analysis of RE & EE Projects
1. IIT Delhi sends you invitation
Once you show interest, a mail is sent by the placement office along with relevant information and registration link. Interested in recruiting us? Send us a mail at energyiitdelhi@gmail.com or you can also mail directly to Office Career Service at placement@admin.iitd.ac.in.

2. Company fills JNF (Job Notification Form)
JNF requires company to fill in mandatory details of the Job profile—role offered, pay package, place of posting, eligible departments. The JNF has to be frozen on OCS website by company till a deadline, after which student shall be able to view all details, and eligible students may apply.

3. Shortlist, Interview & Recruitment
After the application deadline for the students is over, the resumes are visible to the company. The company submits the list of students before deadline. Shortlisted students get notified about the dates for campus interviews. After completion of selection procedure on campus, company is required to announce the final list of the student same day itself.
Designations Offered

Service Engineering Specialist, Analyst, Researcher, Technical Leader, Project Engineer, Design Engineer Trainee, Executive Trainee, Consultant
Our Alumni

There are numerous distinguished alumni from our centre who are contributing towards the technological advancement of the country.

Pradeep Bansal
Director
Satya International Ltd

Inderjeet Singh
Director
Deloitte

Suprotim Ganguly
CEO
GITA

Sanjeev Jain
Professor
IIT Delhi

Dr. Ashok Kumar
Director
Bureau of Energy Efficiency

Himanshu Upadhyay
Assistant Director
Central Electricity Authority

We always maintain a consistent relation with our alumni, discussing the innovations, technical advancement, future etc. Feel free to have a look at our linkedin group 'Energy Forum'.
Faculty Coordinators

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