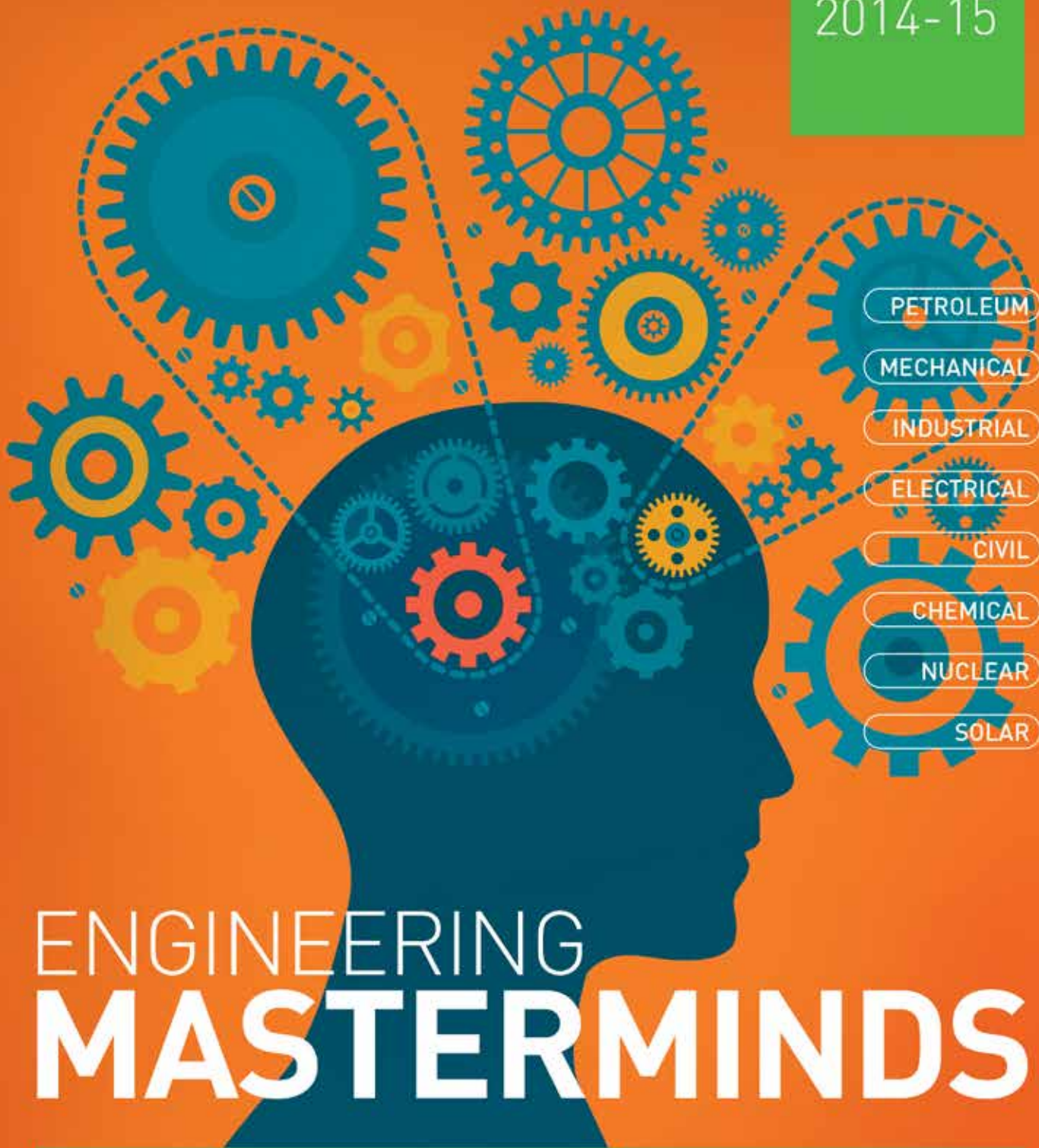
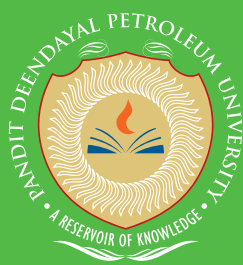


FINAL PLACEMENTS

2014-15



ENGINEERING MASTERMINDS



PDPU

PANDIT DEENDAYAL PETROLEUM UNIVERSITY

VISION

To be an internationally renowned and respected Institution imparting excellent education and training based upon the foundation of futuristic research and innovations.

MISSION

Inspiring Students to prepare them for life-long learning and leadership in an increasingly knowledge and technology driven world.

Board of Governors

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Chairman & Managing Director,
Reliance Industries Ltd. &
President,
Pandit Deendayal Petroleum University

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Pandit Deendayal Petroleum University

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Energy & Petrochemicals Department,
Government of Gujarat

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Higher and Technical Education
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Gujarat State Petroleum Corporation
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FRS Bhatnagar Fellow
National Chemical Laboratory

Mrs. Pallavi Shroff
Partner
Amarchand Mangaldas

Shri K. V. Kamath
Chairman - ICICI Bank &
Lead Independent Director - Infosys

Shri Nigam Dave
Dean, School of Liberal studies
Pandit Deendayal Petroleum University

Shri Sudhir Vasudeva
Former CMD
Oil & Natural Gas Corporation Limited

Shri Tarun Shah
Registrar
Pandit Deendayal Petroleum University

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Director, School of Technology, PDPU

Dr. Nigam Dave
Director, School of Liberal Studies, PDPU

Dr. Pramod Paliwal
School of Petroleum Management, PDPU

Dr. Anirbid Sircar
Director,
School of Petroleum Technology, PDPU

Dr. Hemant Trivedi
Director,
School of Petroleum Management, PDPU

Dr. Santosh Kumar
School of Liberal Studies, PDPU

Dr. Tanushree Banerjee
School of Petroleum Management, PDPU

Dr. Nirendra Misra
School of Technology, PDPU

Shri Tarun Shah
Registrar, PDPU

INVITEE

Prof. N. R. Dave
Shri V. C. Shah



President's Message



Dr. Mukesh Ambani
President

Pandit Deendayal Petroleum University

With Pandit Deendayal Petroleum University, we envisioned the creation of a world-class university. To be one of the front-runners in imparting education in the fields of energy & infrastructure, humanities, engineering, management, and liberal arts. I am exuberant to announce that Pandit Deendayal Petroleum University (PDPU) is now one of the leading international universities in India. In a short span of seven years, PDPU has reached a crucial juncture when a major transformation is taking place in the world economy. PDPU now is old enough to create young professionals who impart significant contributions to the economic and the social landscape of India.

Today the corporate world seeks a generation of young people who are not only academically sound, but are also able to think innovatively. I feel proud to see the holistic education system of PDPU successfully bringing the best out of the students. I'd like to reiterate my whole-hearted support for PDPU and wish them all the very best for their future endeavors and accomplishments.

All the Best!

Chairman's Message



Shri D. J. Pandian, IAS

Additional Chief Secretary, Energy & Petrochemicals Department & Chairman, Standing Committee, Pandit Deendayal Petroleum University

I feel a great sense of privilege in presenting the class of 2015 to you. We at the school take pride in creating a set of engineering graduates who can dynamically adapt to an ever changing environment of the engineering sector. We are confident that the exposure imparted to them on campus will be functionally relevant in the corporate world. As professionals who can lend value, these young graduates have also been indoctrinated with humility and integrity as priceless personality attributes.

The four year journey as I see it has been a truly transformational one. It has been engaging, rigorous, collaborative and has presented a global frame of reference for the students to internalize and apply to the evolving world of technology. Fine tuning these theories and cases specifically to the engineering sector has been a niche and intense experience. These are the learnings which our young graduates extend to you.

I once again welcome you to our campus and hope you will find a competent set of students to meet your expectations.

Director General's Message



Prof. P K Banik
Director General

Pandit Deendayal Petroleum University

Greetings from Gandhinagar, the capital city of the state of Gujarat and a hearty welcome to our university, Pandit Deendayal Petroleum University (PDPU)!

At PDPU, we provide professional education of world-class standard, excellent and encouraging faculty support, and a very inspiring learning ambience. Admissions to the University take place through the reputed JEE (Main).

PDPU which was established in 2007, is growing remarkably well in a vibrant campus currently spread over an area of approximately 100 acres on a lush green cover with a beautiful rural setting. The campus has all the modern facilities like beautiful academic and residential buildings, internet and Wi-Fi, good laboratories and computational facilities, library, excellent cafeteria, wellness center etc. The campus is well located and can be reached conveniently.

I would like to introduce you to the class of 2014-15. I am confident that the students will make a good impression with their sound understanding, technical skills, dedicated work and professional ethics. The students are well equipped with necessary skills to perform effectively in any environment. I am sure you would like to take advantage of the final placements of talent from PDPU, induct them into your organization and make them contribute in your organizational pursuits.

I, on behalf of PDPU welcome you to participate in our Campus Recruitment Program. It would be my proud privilege to host you on PDPU campus.

Dean's Message



Dr. Tajinder Pal Singh
Dean - Student Affairs

Pandit Deendayal Petroleum University

Pandit Deendayal Petroleum University addresses the need for trained and specialized Human Resources for Oil & Gas industry and other Engineering branches worldwide. It intends to expand the opportunities for students and professionals to develop intellectual knowledge base and leadership skills to compete in the global arena. This objective is being addressed through a number of specialized and well-planned undergraduate and post graduate energy and technology education programmes and intensive research initiatives.

The objective of the Placement Office is to facilitate the match between the skills, knowledge, and talent of students with that of the human resource requirements of the industries for shaping their professional career.

PDPU strongly emphasizes on the fact that the engineering graduate should have sound theoretical as well as practical knowledge of his discipline as well as basic information about other relevant disciplines. The course curriculum is planned accordingly to achieve this goal.

The students should first deserve then desire, keeping this in mind; we wish each student success in getting a suitable placement. We cordially invite and welcome various industries to offer a suitable placement to our young, enthusiastic and dedicated students.



About the University

Recognition

Pandit Deendayal Petroleum University, Gandhinagar, promoted by Gujarat State Petroleum Corporation Limited (GSPC) is a domain specific university in the field of education and research with a special focus on the oil and gas sector. GSPC is a diversified company having a significant presence in the entire value chain of the hydrocarbon sector.

This University addresses the need for trained and specialized Human Resource for Oil & Gas Industry, as well as for mainstream engineering and management domains in business and industry. It intends to expand the opportunities for students and professionals to develop and nurture their intellect and core knowledge with desired leadership skills to compete in the global arena. This objective is being addressed through a number of specialized and well-planned undergraduate, post-graduate and doctorate programmes set in a research enabling environment.

UGC

This University has been established by an Act of the Gujarat Legislature, on 4th April, 2007. The University is recognized by UGC vide F.No. 9-17/2008 (CPP-L) dated 9th November, 2009. Moreover, the programme is well recognized by the industry in terms of relevance, quality and earnestness to cater to the future.

SIRO

Government of India, Ministry of Science and Technology, Department of Scientific and Industrial Research has accord recognition to Pandit Deendayal Petroleum University (PDPU), Gandhinagar as Scientific and Industrial Research Organization (SIRO). On receiving this recognition PDPU is entitled to all such administrative support from the Ministry of Science and Technology (DSIR) as may be required on all issues to promote or encourage scientific research activities. Also the University will be entitled to avail the custom/excise duty exemption on the import of equipments, instruments, spares thereof, consumables etc.

DSIR, a Government of India body that undertakes promotion of research and transfer of technology to India, carries out thorough evaluation of the R&D unit and ensures compliance with all the Government of India regulations before awarding renewals. The recognition and duty waiver is awarded every three years.

Director's Message



Anirbid Sircar

Director - School of Petroleum Technology

Pandit Deendayal Petroleum University

I feel immensely privileged in extending my whole hearted invitation to your esteemed organization on behalf of the staff and students of School of Petroleum Technology, to participate in the campus recruitment program for 2015.

From the moment of its inception, School of Petroleum Technology has witnessed an enthralling elevation in the field of academic excellence, research, development and industrial collaboration. Our academic programmes are amongst the best in the country. It provides an optimum mix of theory and practical, with strong bias on industrial applications. The programme places heavy emphasis on practical experience for which extensive interaction with industry is built into the curriculum.

The School of Petroleum Technology has always been at the fore-front of producing some of the most efficient and innovative engineers in the industry and I hold faith that the students of this year are no less. Having spent decades in the industry, I can say that the enthusiasm that these students carry for their careers is exactly what is needed to excel in this ever expanding field of oil, gas and energy.

Whether you have regularly recruited our graduates and post graduates, or you are visiting us for the first time, I am sure you will find our students very competent and you will visit us again, year after year. I look forward to a warm and enduring relationship.

Energy and energy infrastructure are critical to any economy for development and sustainability. India has recognized this fact and has embarked upon a comprehensive strategy to address the concerns of energy security of India. The need for a resource centre was anticipated to keep pace with the fast developing and competitive energy industry, to plan for the future and to continuously build requisite intellectual capital and human resource capability.

SPT
SCHOOL OF
PETROLEUM
TECHNOLOGY

We, at the School of Petroleum Technology (SPT), envisaged the increasing needs for well-trained Engineers suited for this sector, and started the B.Tech Programme with a focus on the Oil & Gas sector.

School of Petroleum Technology has been set up under Pandit Deendayal Petroleum University (PDPU) as a centre of excellence to develop human resources to cater to the petroleum and allied energy sectors, improve knowledge base of technologists and provide a competitive edge to professionals in the global arena. It has been promoted with the initiative of Gujarat State Petroleum Corporation Ltd. (GSPC) a Gujarat government undertaking, which is a leader in the energy sector

School of Petroleum Technology offers Undergraduate and Postgraduate Programmes in Petroleum Engineering, namely B.Tech, M.Tech and Ph.D.



B.Tech

PETROLEUM ENGINEERING

School of Petroleum Technology offers a 4 year B.Tech programme in Petroleum Engineering with Major in Upstream or Downstream. The curriculum is modern, flexible as well as futuristic with a strong emphasis on sound fundamentals, problem solving, and practical exposure to real life situations.

The bifurcation of School of Petroleum Technology into specialised streams of Upstream and Downstream was done in keeping up with the new demands of Indian petroleum sector. The pedagogy of the two streams of SPT has been closely aligned with the technical requirements of the industry in today's scenario and the focus is on producing fundamentally sound engineers who are ready to hit the ground running as they enter the industry.



Course Structure

B.Tech Petroleum Engineering

Why Upstream?

Present in India's most prolific on-shore basin and in close proximity to some of the most productive regions of India, SPT students have a very good exposure of the upstream industry. With specialised courses in Workover and Stimulation, Surface Production Operations, Well Test Analysis, Enhanced Oil Recovery, Drilling and Drilling Fluids, the course equips the students with essential skills to tackle the challenges faced by the oil and gas professionals today. Projects aided by the industry encompassing the entire spectrum of the upstream sector have added to the knowledge and skill sets of our students. It is hence implied that the students of the upstream class of petroleum engineering enjoy a niche knowledge base topped with several lectures, workshops and training sessions by engineers, managers and technicians from across the oil and gas value chain.

Why Downstream?

The course structure is exclusively designed to provide students a better understanding of challenges in Refining, Petrochemicals, LNG, Sourcing and Distribution sector of Oil and Gas industry. The academic curriculum of Downstream Majors is perpetually evolving to adapt to the ever changing global requirements along with the diversity of the fields of study. The classroom learning is further augmented by a number of workshops and guest lectures by industry experts which ensures a continuous industry interaction process that aims to provide students with an insight into current trends. The virtue of being located in Gujarat, the refinery and petrochemical capital of our country is an added advantage to the students to get extensive industrial exposure.

Semester I

- Mathematics - I
- Engineering Graphics
- Applied Mechanics
- Chemistry
- Element of Mechanical Engineering
- Basic Environmental Studies
- Introduction to Petroleum Engineering
- Computer Programming

Semester II

- Mathematics - II
- Engineering Materials
- Element of Civil Engineering
- Element of Electrical Engineering
- W.S. Practice
- Physics
- Communication Skills

Semester III

- Mathematics - III
- Petroleum Geology
- Thermodynamics of Reservoir Fluids
- Earth Science
- Energy Resources
- Sedimentary Geology
- Basics of measurement and control

Semester IV

- Petroleum Exploration
- Fluid Flow in Porous Media
- Geo Mechanics & Strength of Material
- Drilling Fluids and Cementation
- Drilling and Well Completion
- Well log and Formation Evaluations
- Earth Science & Hydrocarbon Exploration Fieldwork
- Gandhian Thoughts

UPSTREAM

Semester V

- Assessment of Petroleum Reserves
- Natural Gas Engineering
- Petroleum Production Engineering
- Reservoir Engineering
- Transport Phenomena
- Industrial Orientation
- Group Assignment and Presentation

Semester VI

- Contracts in Hydrocarbon Industry
- Introduction to Research Methodology
- Surface Production Engineering
- Well Test Analysis and EOR
- Petroleum Engineering Lab
- Seminar
- Advanced Drilling
- Advanced Numerical Methods
- Prime Movers, Pumps and Compressors
- Petroleum Equipment Design

Semester VII

- Unconventional Hydrocarbon Resources
- Integrated reservoir management and oil and gas field development
- Artificial Lift Techniques
- Work over and Stimulation
- Industrial Training and Viva-Voce
- Pre Project Dissertation & Seminar
- Reservoir Modelling and Simulation

Semester VIII

- Management in Hydrocarbon Industry
- Safety, Health and Environment
- Pipeline Engineering
- Offshore Production Operations
- Major Industrial Project work
- Grand Viva

DOWNSTREAM

Semester V

- Petroleum Process Unit Operations
- Hydrocarbon Based Fertilizer Industries
- Natural Gas Processing
- Transport Phenomena
- Elective - 1*
- Industrial Orientation
- Product Application Lab
- Group Assignment and Presentation
- Time Series Analysis
- Enhanced Oil Recovery

Semester VI

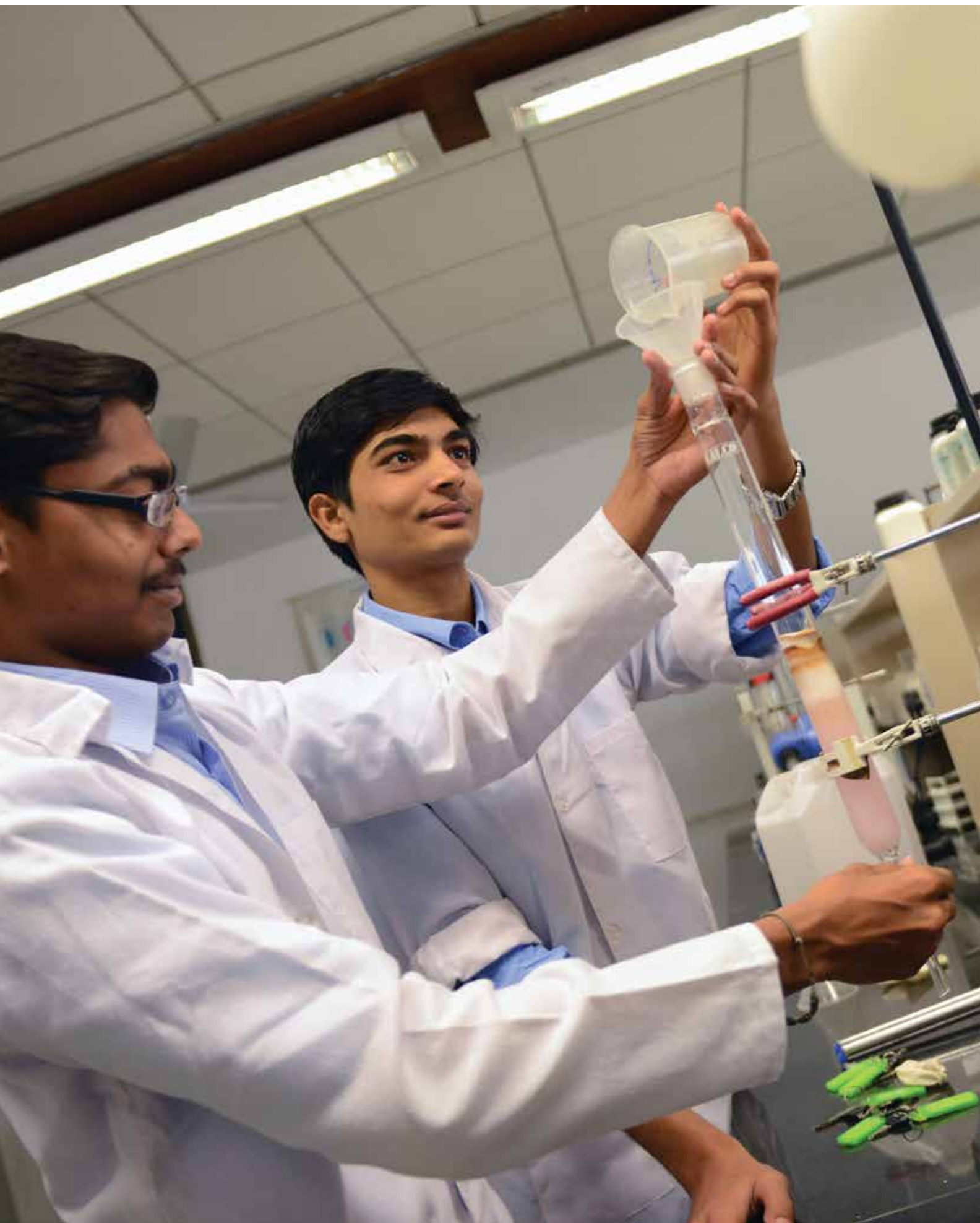
- Polymer Science and
- Petrochemicals Engineering - I
- Petroleum Refinery Engineering
- Contracts in Hydrocarbon Industry
- Introduction to Research Methodology
- Design of HC process Equipments
- Petroleum Product Testing Lab
- Advanced Numerical methods
- Seminar

Semester VII

- Petrochemicals Engineering - II
- LNG Value Chain
- Chemical Reaction Engineering
- Industrial Training & Viva-Voce
- Pre Project Dissertation & Seminar
- Transportation and marketing of petroleum and its products
- Safety Health and Environment

Semester VIII

- Gas Retailing- CGD
- Pipeline Engineering
- Regulatory and Policy Issues in Hydrocarbon Sector
- Elective - 2**
- Management in Hydrocarbon Industry
- Major Industrial Project Work
- Grand Viva



LAB FACILITIES

Empirical experiences are pre-requisites for scientific and engineering education. The School has created a number of sector relevant engineering laboratories which are well equipped to facilitate the pedagogic and research process.

State of the art equipment in these labs provides the students with an opportunity to gain hands on experience of the instruments which are used in the industry.





With exposure to such great facilities the students gain invaluable practical knowledge enabling them to meet the industry standards.

Some of the functioning laboratories at SPT are:

- **Earth Sciences Lab**
- **Geo Science Lab**
- **Drilling Fluid Lab**
- **Health, Safety and Environment Lab**
- **Petroleum Engineering Lab - 1**
- **Petroleum Engineering Lab - 2**
- **Petroleum Product Testing Lab**
- **Product Application Lab**





FACULTY

Dr. Anirbid Sircar (Professor)

Qualification: M.Sc. in Exploration Geophysics, M.Tech in Petroleum Exploration, Ph.D.

Research Interest: Seismic Interpretation, Reservoir Characterization, Probabilistic Resource Analysis, Integrated Reservoir Management Field Development, Asset Management etc.

Prof. Ashish Sarkar (Associate Professor)

Qualification: M.Sc., Ph.D.

Research Interest: Foraminiferal Micropaleontology, Paleoclimatology, Isotope Geochemistry, Basin Evolution and Petroleum Geology.

Prof. S.S.P. Singh, Professor (Adjunct Faculty)

Qualification: B.Sc. in Petroleum Engineering

Research Interest: Productivity Improvement Projects

Dr. Bijay Kumar Behra (Professor)

Qualification: M. Sc. in Applied Geology, M.Tech in Applied Geology, Ph.D.

Research Interest: Geothermal, Unconventional petroleum resource plays for future energy generation, effective solutions to various oil & gas field related problems with synergistic application of geology and petrophysics.

Dr. Uttam Kumar Bhui (Associate Professor)

Qualification: M.Sc. in Geology, Ph.D.

Research Interest: Clay Mineralogy and Geochemistry.

Dr. Bhawanisingh G. Desai (Assistant Professor)

Qualification: M.Sc. in Geology, Ph.D.

Research Interest: Applications of Ichnology and Sequence Stratigraphy for reservoir studies.

Dr. Tajinder Pal Singh (Professor)

Qualification: M.Sc., M.Phil., Ph.D.

Research Interest: Linear Algebra and Numerical Reservoir Simulation.

Mr. Ravinder Kumar Jain (Adjunct Faculty)

Qualification: B.Tech in Chemical

Research Interest: Well Stimulation and Workover, Pipeline.

Dr. N. Madhavan (Assistant Professor)

Qualification: M.Sc. in Applied Geology, Ph.D.

Research Interest: Geochemistry (Soil and ground water)

Mr. Vinay Babu (Lecturer)

Qualification: M.Sc. in Applied Geology, M.Tech in Petroleum Exploration

Research Interest: Well Logging and Formation Evaluation, Seismic and Sequence Stratigraphy, Basin Analysis.

Ms. Shreya Sahajpal (Visiting Faculty)

Qualification: M.Tech in Chemical Engineering.

Research Interest: Heat Exchangers, LNG Value Chain, CGD

Dr. Shubhra Adhikari (Visiting Faculty)

Qualification: B.Tech in Chemical Engineering, M.Tech in Chemical Engineering, Ph.D.

Research Interest: Fertilizers & Chemical Engineering

Mr. Sanjiv Kumar (Lecturer)

Qualification: B.Tech in Petroleum Engineering, M.Tech in Petroleum Management.

Research Interest: Reservoir Characterization, Well test analysis, CBM, Hydraulic Fracturing Optimization.

Mr. Anshul A Gupta (Lecturer)

Qualification: B.E. Petroleum, M.Tech in Petroleum Engineering

Research Interest: Drilling Fluids, Reservoir Fluids

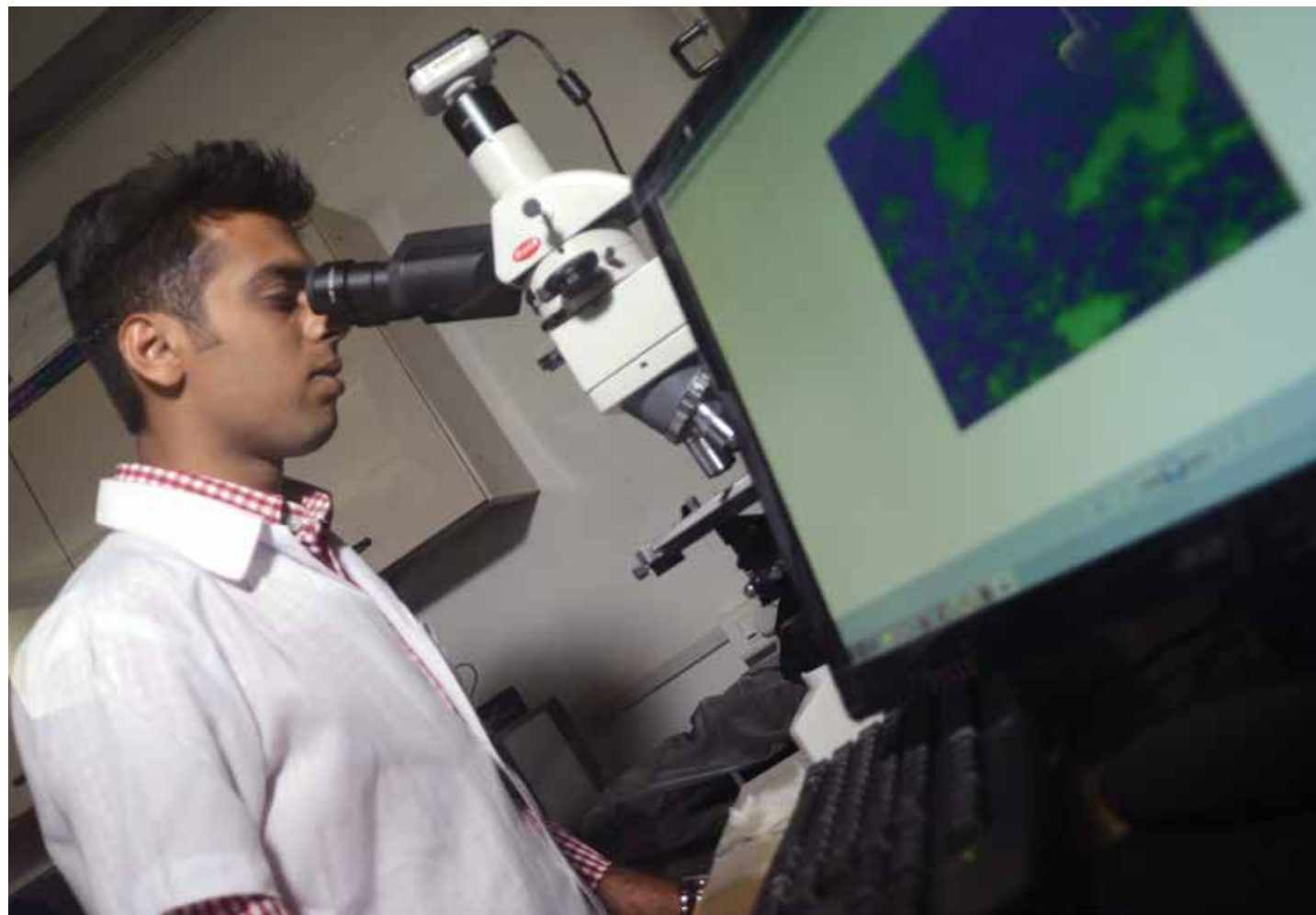
INTERNSHIPS AND TRAINING

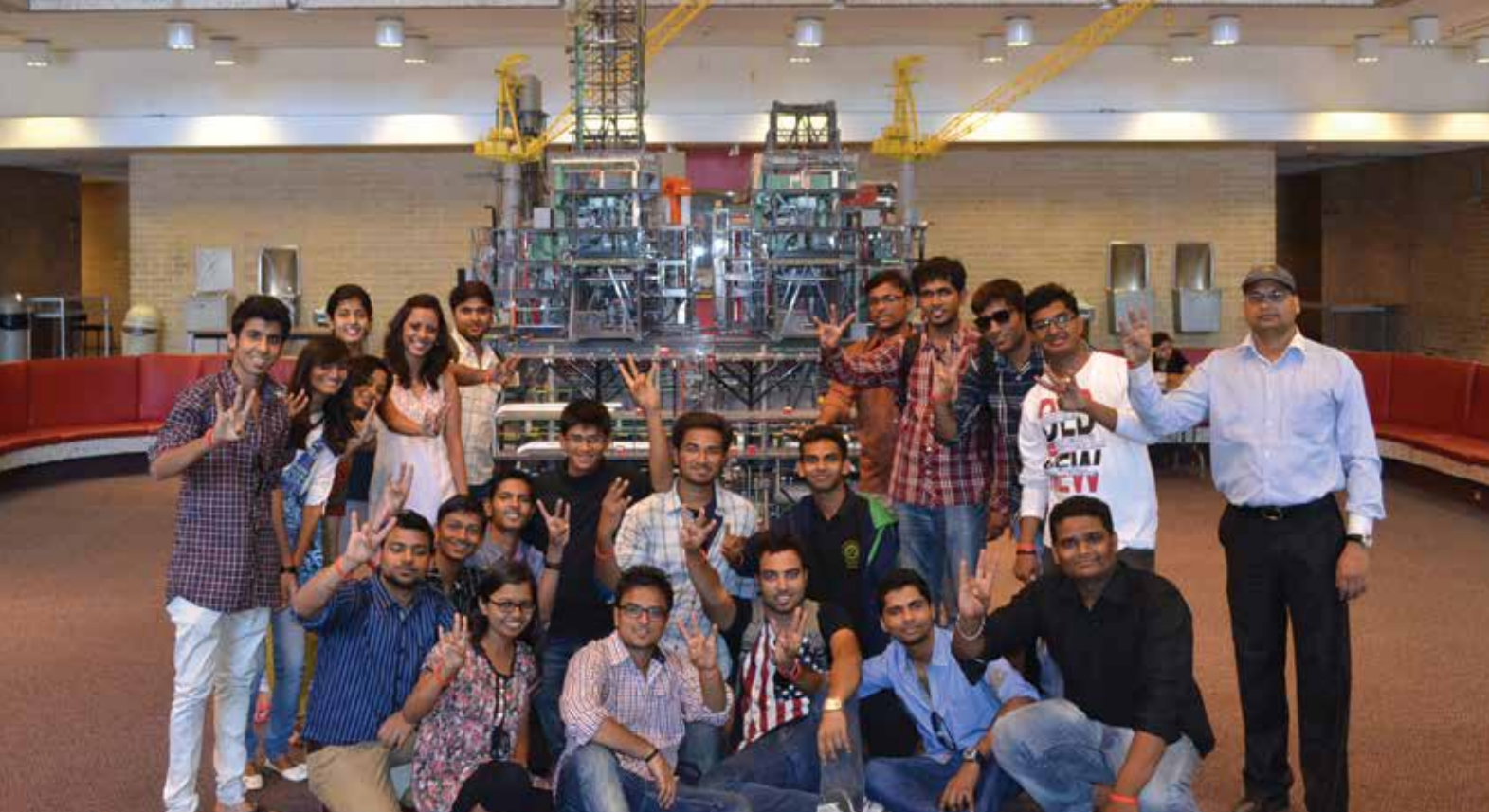
Industrial Training

Engineering studies have two systems contributing side by side to the enhancement of comprehension and study skills. The first is the theoretical systems; conducted primarily in the form of lectures, tutorials and labs, which are accompanied by frequent consultation of various knowledge sources. The second is the practical system, in the form of Industrial and Research Training, during which the students apply theories learnt. The third year B.Tech students are scheduled to go through Oil & Gas Industrial and Research Training, envisaged with a view to make students familiar with industry operations in Oil & Gas industry including exploration, drilling, production, transportation, refining, distribution, electricity, generation and research activities. The ultimate goal of the training is to accelerate integration into professional careers once the graduate is hired for doing a certain task. This can be achieved through many activities or objectives:

Objectives:

- To integrate all learning in real life environment
- To expose students to all industrial engineering tasks like design, production, maintenance, services, equipment operations, technology and operational techniques.
- To enhance student's scientific and practical capabilities. It makes the student perceive the practical signification of the academic topics handled at the faculty, and direct his thinking to the practical aspects.
- To give the student, the feeling of a professional career he/ she is heading for, before graduation. Industrial and Research Training can represent a valuable asset for the graduate and for the employer. For the latter, post-hiring training can be sensible shortened





INTERNATIONAL EXPOSURE PROGRAM

International Exposure Program has remained as one of the most renowned and flagship program of PDPU since its inception in 2007. International Exposure Program 2013 was carried out in University of Houston Petroleum Engineering department. Under the program total 32 students and a faculty of PDPU visited University of Houston attended various lectures by University of Houston faculties and visited various petroleum companies in the vicinity. PDPU students also attended several lectures on both upstream subjects and downstream subjects on campus. The lectures attended by the students and faculties that delivered the lectures were:

- Geophysics by Dr. Peter Bartok
- Drilling by Dr. Robello Samuel
- Petrophysics Lecture by Dr. Mike Myres
- Petrophysics Lab by Dr. Huai Wang
- Reservoir Simulation by Dr. Guan Qin
- Production Engineering by Mr. Matteo
- Subsea Engineering by Dr. Phaneendra Kondapi
- Logging by Mr. Matt Blyth
- Reservoir Engineering By Prof. W John Lee
- Energy and Environmental Law Dr. Jacqueline Lang Weaver
- Petroleum Economics Dr. Don Bellman
- Refining Dr. Miguel Flesher
- Petrochemical Dr. Krishna Kaushik

The students also visited companies like Halliburton, Schlumberger, Baker Hughes, Weatherford and Dow Chemicals. Specifically, their visit covered:

- Halliburton Landmark Facility
- Halliburton Technology Centre, Houston,
- Schlumberger Sugarland Campus
- Schlumberger Rosharon Campus
- Schlumberger San Felipe Office
- Baker Hughes Bit Manufacturing Plant, Woodlands
- Weatherford Technology Centre
- Dow Chemicals, Freeport

Other than academic learning students also visited various places of interest such as Houston Natural Science Museum, NASA Johnson Space Centre, besides witnessing a Baseball Match. In international Exposure Program 2013 at University of Houston, PDPU students learned a lot about not only American and global petroleum industry, advancements in petroleum world, but also American culture and way of life.

INDUSTRY ACADEMIA INTERACTION

PDPU students and faculty members have been actively engaged by the industry in various talks, guest lectures, workshops and conclaves.

2nd HR Conclave Oct, 2013



Address by Shri J. G. Chaturvedi, ED - Ahmedabad Asset, ONGC



Address by Shri Pramod Gupta, VP - E & P, Essar Energy

Petroleum Conclave March, 2014



Exploration Conclave Feb, 2013





PROFESSIONAL BODIES AT PDPU

GLOBAL ALUMNI PRESENCE

The alumni of School of Petroleum Technology have not only left their mark on the Indian oil and gas industry but have also been successful in pursuing their dreams abroad. With a strong and growing presence of SPT alumni in some of the top notch institutes of the world like Stanford University, Imperial College London, Texas A&M University amongst others the PDPU community is on its way to making their presence felt across the global oil and gas industry.



SPE: Student chapter of Society of Petroleum Engineers was established in Pandit Deendayal Petroleum University in 2007 and is serving the student community effectively in providing the best environment for their professional and corporate exposure through guest lectures, workshops, lecture series and so on. The chapter has been awarded the Golden Status for three times in row. It works efficiently through the active participation of student members and huge support from the faculty and governing body of PDPU. The chapter strives to bring in as much industry – academia interaction as possible through various ways.



SEG Student Chapter was initiated on 25th August, 2009, Its aim is to promote the science of geophysics and the education of applied geophysicists and to provide a platform for the academic students to develop their professional skills. Also our mission is to make available the vast knowledge resources of the society to the student community. Since then it has been an active student chapter with its sincere and commended efforts of creating an atmosphere of learning, providing opportunities for networking with industry professionals and developing sense of professionalism in student community.

EAGE

EAGE Student Chapters aims to promote the development and application of geosciences and related engineering subjects & to promote innovation and technical progress and to foster the communication. The objectives of the student chapter shall be fellowship and cooperation between those working in, studying or otherwise being interested in these fields. EAGE student chapter at PDPU organizes conferences, workshop, student seminars, lecture series and so on. It has served as a platform to inculcate the spirit of true knowledge through the competitive spirit with various activities, spread all over the semester.



The Petro-tech Student Chapter at PDPU serves as a very valuable addition to the institute and it's constantly attaining global stature. The chapter facilitates students to gain access to its vast and unparalleled resources in the field of oil and gas sector. It enables the students along with the faculty to attend several national and international seminars and gain valuable insight into the functioning of oil and gas industry.



SPG Student Chapter provides a common platform for students to exchange and share information, technologies and techniques. The chapter's main objective is to provide the students with a forum to exchange their views and opinions on various exploration problems related to Western onland and offshore areas.



AAPG-PDPU Student Chapter aims to setup a geosciences community at the university and engage academia, students, industry into a strong relationship to foster growth in the field of Geology and allied sciences. AAPG seeks to provide its members myriad opportunities and training to enhance their skills and technical expertise to advance their professional aptitude. The Student Chapter aspires to achieve its objectives by conducting a series of workshops, lectures, conferences, case studies, distinguished lectures, field trips, exhibitions along with competitions such as paper/poster presentations.

Director's Message



Dr. H. B. Raghavendra
Director - School of Technology
Pandit Deendayal Petroleum University

School of Technology (SOT) is the youngest School of PDPU added to PDPU family in 2010. The phenomenal growth of SOT in three years is amazing and mind-blowing. Today, School offers 5 undergraduate, 4 PG courses & Ph.D programs in various Engineering disciplines.

School progress is marked by setting up of state of the art laboratories with the help of several industries and public sector units. GESCL, GETCO and GACL are already knowledge partners of SOT and sharing technology with the School. School is gearing up for offering Consultancy services through its world class laboratories and quality faculty members.

SOT takes pride in having professional associations of students and faculty to support value added activities viz., Workshops, conferences, expert lectures and many other events. Green brigade, energy audit group, automotive club and several other groups work for the betterment of the society. The number of events taking place at SOT could be a pointer to the capabilities of the school and indicate the direction.

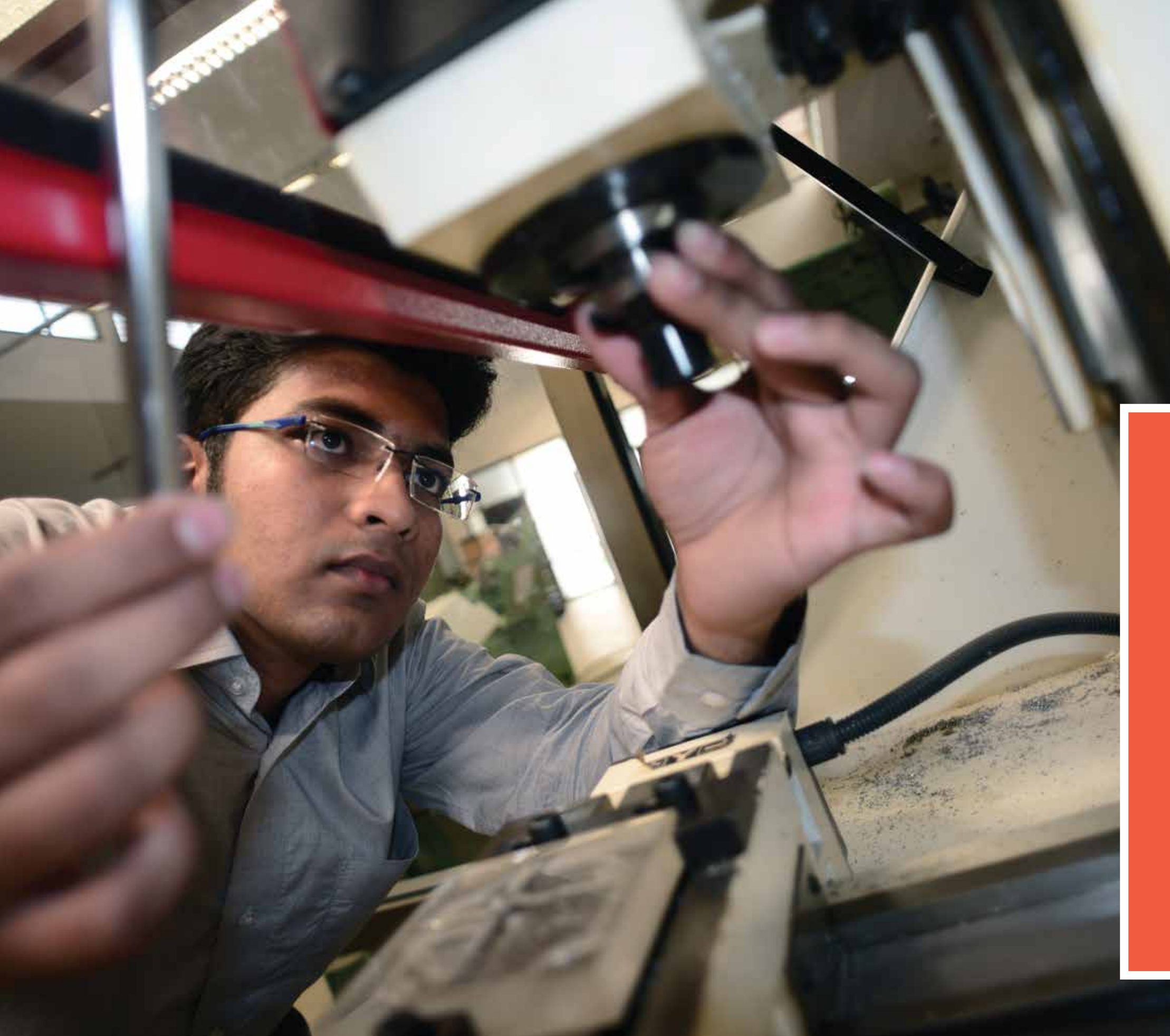
I am proud to say our Students of SOT, who are having hands on experience, exposure to live projects and sensitized to requirements of the society are sure candidates to Infrastructure, Oil and Gas and Manufacturing Sector Industries and Companies. They would be not only employable but also deployable in the realistic Project and Site conditions.

School of Technology intends to focus on technological education, research and service that anticipates, and meets the need of tomorrow's world. It is expected that engineering graduates from the school will care about issues that technology can make a difference, whether these issues are related to health, security, economic well-being or sustainability of world and prevailing value systems.

SOT
SCHOOL OF
TECHNOLOGY

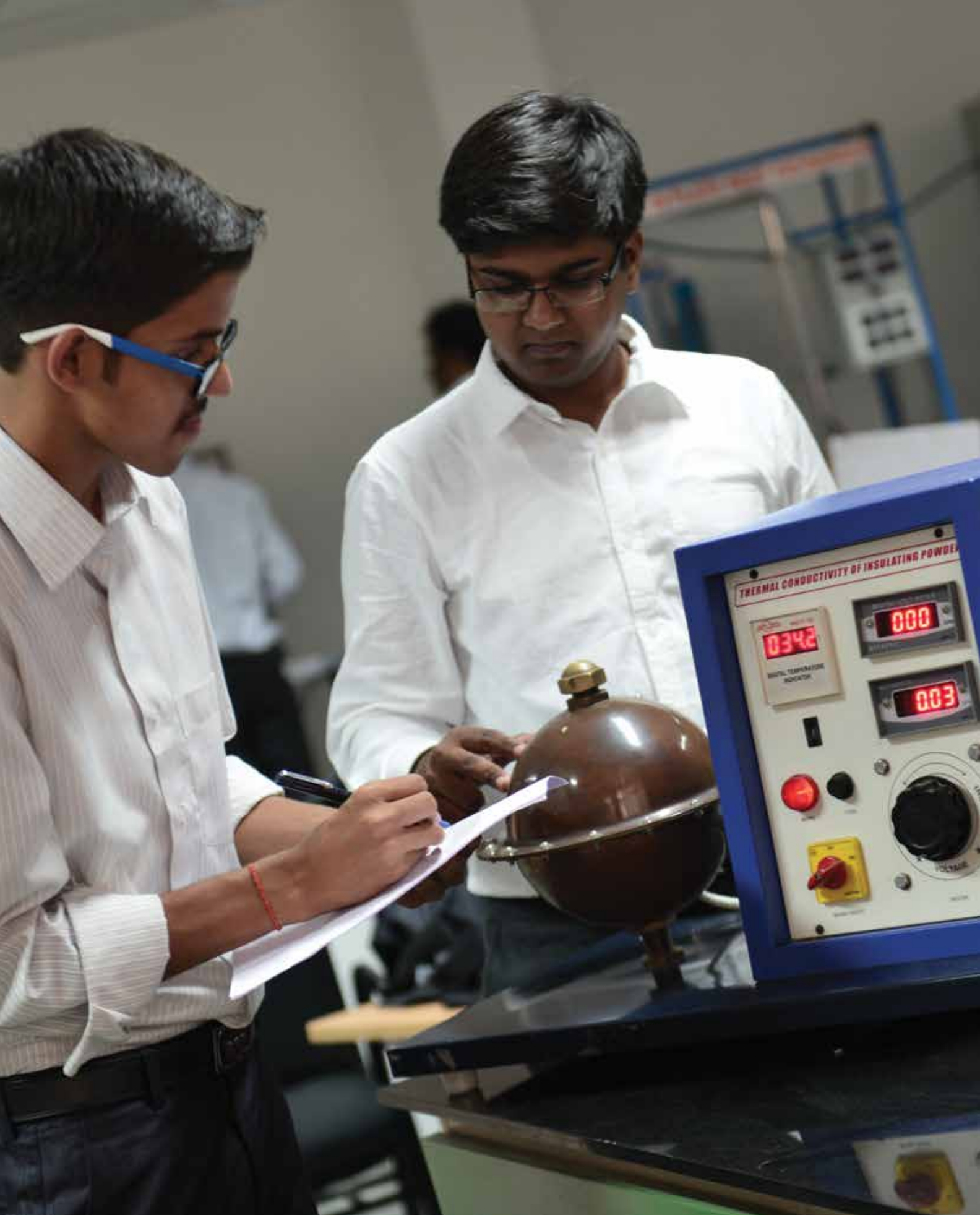
SCHOOL OF TECHNOLOGY





MECHANICAL Engineering

Department of Mechanical Engineering (DME) at PDU has flourished to a greater extent due to their experienced faculties from diversified fields, high faculty to student ratio and dedicated students. DME focuses on comprehensive course curriculum with intense practical exposure to the students which will enable them to take up challenging roles in their professional career.



Course Structure

B.Tech Mechanical Engineering

Semester I

- Mathematics - I
- Applied Mechanics
- Chemistry
- Computer Programming
- Communication Skills
- Engineering Graphics
- Environmental Science

Semester II

- Mathematics - II
- Physics
- Elements of Civil Engineering
- Elements of Electrical Engineering
- Elements of Mechanical Engineering
- Engineering Materials
- Workshop Practice

Semester III

- Mathematics - III
- Thermodynamics
- Fluid Mechanics
- Strength of Materials
- Manufacturing Process - I
- Electrical Technology

Semester IV

- Numerical Methods
- Kinematics of Machines
- Design of Machine Elements
- Engineering Metallurgy
- Fluid Machinery
- Mechanical Measurements & Metrology

Semester V

- Manufacturing Process - II
- Dynamics of Machines
- Heat and Mass Transfer
- Power Plant Engineering
- Control Systems
- Production & Operations Management

Semester VI

- Design of Mechanical Systems
- Production Technology
- Refrigeration and Air Conditioning
- Non-Conventional Energy Sources
- Work Design and Measurement
- Organizational Psychology

Semester VII

- Computer Aided Design
- Internal Combustion Engines
- Optimization Techniques
- Vibration Engineering Design
- Science & Technology of Welding
- Industrial Economics
- Seminar

Semester VIII

- Major Project
- Robotics Engineering
- Thermal Engineering
- Computer Aided Manufacturing
- Finite Element Methods
- Management Concepts & Practices

STUDENT ACTIVITIES

Clubs/Forums & Chapters

SAEINDIA PDPU

Collegiate Club

Automobile Quiz: The quiz was based on Automobiles of all the three spaces which are road, water & air. The aim of the quiz firstly was to throw light on the scope of SAE & interest students about it. Secondly, serve as an informal path to knowledge of the vehicular world.

Society of Automotive Engineers student branch at PDPU fosters automobile enthusiasts of mechanical engineering department in design and development field. The chapter was formed under the guidance of Dr. Rajesh Patel. The chapter aims at providing a platform to all its members to the latest developments of the automobile industry. Since its inception it has nurtured its members through its various activities like Automobile quiz, Paper and poster presentation and workshops. SAE chapter at PDPU is one of the most active clubs in the campus known for its value addition to its members. Some of its activities in 2012-13 are:

Engine Design Workshop: Automobile and engine Design workshop was a short term professional course on Automotive and Engine Design Combining industry knowledge and innovating solutions. The workshop was conducted by Metawing. The students learned the basics concepts and gain the practical experience.

Paper and poster presentation: Students were invited to present their original contribution in the area of automobile engineering. They could be research activity or case study. The objective of paper presentation was to develop quest for research among the students. The spirit for searching information will definitely improve the reading habits of the students and provide them in depth knowledge about current automobile technologies.

GLINT

The Renewable Energy Club

Solar Energy Exhibition: A solar energy exhibition was organized by Glint in Flare, the techno-cultural festival of PDPU. The exhibition demonstrated the working of various solar energy equipment like parabolic solar reflectors, SK-14 solar cooker, solar street lights, and parabolic concentrator of 1.8m aperture.

Glint is a Renewable Energy Club of PDPU and was established in 2011 by 5 students of mechanical engineering department under the guidance of Dr. Ajit Kumar N. Shukla as the faculty advisor. The organization is dedicated to the promotion of education and application of clean renewable energy technologies and energy conservation. It aims to provide opportunities for hands on learning and community involvement to further our academic experience. It provides a common ground to all those concerned with nature and utilization of energy as a renewable non-polluting resource. The Activities of the club:

The Green Campus Challenge (TGCC): The Club took an initiative to participate in The Green Campus Challenge (TGCC) which was organized by IIT Bombay. The Green Campus Challenge had been designed with a vision of making campuses across India more sustainable and green, and to promote the idea and the necessity of the same among the youth of our country. The team did more than 80 tasks and all the activities created awareness as well as applied practical solution to the existing problems on these issues. GLINT team consisting of 21 members bagged 3rd position out of 350 teams registered.

Expert Lecture: Glint also organized an expert lecture by Dr. Indrajit Mukhopadhyay on "Harnessing Solar Power using PVCs and CSPs". The main emphasis of lecture was role of mechanical engineers in Harnessing Solar Power using PVCs and CSPs. Field Visit to Muni Seva Ashram, Goraj near Vadodara on 6th October, 2012. The trip was followed by a case study on the renewable energy resources present at the Ashram.

MECHNERZO

The MECHNERZO, an official forum for students and faculties of Mechanical & Industrial Engineering department established to organize and launch various technical programs/ activities to sharpen their professional and academics skills, and recognize personal lives, while engaging in activities with a societal relevance. All the club/ Chapter and other co curricular activities are organized by Department of Mechanical & Industrial Engineering under MECHNERZO

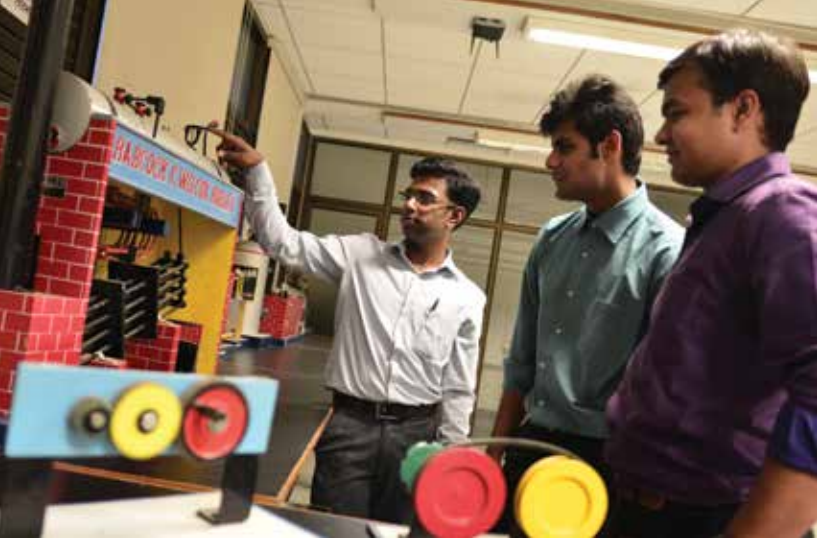
BAJA

Society of Automotive Engineers (SAEINDIA) organizes a global event called BAJA for under-grad engineering students. Each team's goal is to design and build a prototype of a rugged single seat, off-road recreational four-wheeled All Terrain Vehicle (ATV) intended for sale to the non-professionals. The vehicle must be safe; easily transported and maintained; and fun to drive. BAJA comprises of 3 rounds namely Virtual BAJA, Mid-Inspections & Main BAJA. In Virtual BAJA, a participating team has to present the vehicle design in CAD, followed by FEA analysis of Components, DFMEA, DVP, suspension steering/Brakes/Engine/Transmission parameters, safety, ergonomics, innovations, project plans, etc. Across the country only 120 teams qualified for the next level of the competition on basis of their design evaluation by panel of automotive industrial experts.

Team CZAR of PDPU has participated for the first time in BAJA 2013 and cleared Virtual BAJA event out of 280 teams. For the next level of competition i.e. Main BAJA, the team members were divided into various departments. After working rigorously for around five months, they had successfully participated in the final event "Main BAJA". In Main BAJA, extensive series of tests like engine inspection, brake, maneuverability, acceleration, hill climb test, endurance tests had been conducted on each vehicle. Students got unique practical exposure, detailed automobile knowledge, and learned about real life problem solving environment, team management, planning & execution of operations under limited resources, support & time.



FACULTY PROFILE



RESEARCH & DEVELOPMENT

TOPIC/OBJECTIVES	CONCERNED PERSON	STATUS
Gas Metal Arc Welding with Metal Core Wire	Dr. Vishvesh Badheka, PDPU	Completed
Weldability aspects of Low Activation Ferritic-Martensitic Steel Welded by Activated Flux Tungsten Inert Gas Welding	Dr. Vishvesh Badheka, PDPU	Completed
Friction Stir Welding of aluminium alloys used in space application (6061 T6, 2195 & 7050)	Dr. Vishvesh Badheka, PDPU	Completed
Friction Stir Welding of Stainless Steels & dissimilar metals	Dr. Vishvesh Badheka, PDPU	Ongoing
Parabolic turf of solar thermal: To Study Techno-economic feasibility of stationary parabolic turf for > 10 kW solar power.	Dr. Jatin Patel, PDPU	Proposed
Welding Technology : Identify areas of mutual collaboration	Dr. Vishvesh Badheka, PDPU Mr. UN Puntambekar, ERDA	Proposed
Offshore Wind Energy : Feasibility Study for coastal region of Gujarat (funded by GoG)	Dr. S S Kachhwaha, PDPU Dr. Vimal Savsani, PDPU	Proposed

Dr. Surendra Singh Kachhwaha

Professor & HOD

Research Interest:

Refrigeration, evaporative cooling, Bio-diesel production and application, renewable energy sources.

Dr. Ajit Kumar N Shukla

Associate Professor

Research Interest:

Renewable Technologies, Turbo machines, Experimental methods, Thermal & Fluid engineering, Educational Research, Sustainable development.

Dr. Vishvesh J Badheka

Associate Professor

Research Interest:

Friction Stir Welding, Flux Cored Arc Welding, Metal Cored Arc Welding, Narrow Gap Welding, Hybrid Welding, Activated Flux TIG/GMAW welding, Resistance Welding-spot.

Dr. Anurag Mudgal

Associate Professor

Research Interest:

Renewable and non conventional- alternative energy resources especially solar and other waste heat source available for the purpose of water treatment.

Dr. Rajesh Patel

Assistant Professor

Research Interest:

Fluid Catalytic Cracking (FCC), Thermal System Design.

Dr. Vimal Savsani

Assistant Professor

Research Interest:

Investigation of Advanced optimization techniques, Air Powered Engines, Suspension Design for automobiles.

Dr. Nanji Hadia

Assistant Professor

Research Interest:

Enhanced oil recovery processes, Oil recovery from unconventional reservoirs, Flow through porous media, Fluid dynamics and heat transfer.

Mr. Jatin Patel

Lecturer

Research Interest:

Solar Thermal Power Plant, Solar water heating, drying, distillation.

Mr. Jaydeep Patel

Lecturer

Research Interest:

Development for sustainable Wind Energy for residential application, Machine Design.

Mr. Garlapati Nagababu

Lecturer

Research Interest:

Offshore Wind energy, Finite Element Analysis, Linear Elastic Fracture Mechanics, Machine Design.

Mr. Bhargav J Gadhi

Lecturer

Research Interest:

Vehicle Dynamics, Nonlinear Mechanical Vibrations, Passive Dynamic Walking Robots, Robotics in Construction and Agriculture.

Mr. Jaykumar Vora

Lecturer

Research Interest:

Advanced manufacturing process, advanced composite materials.

Mr. Kush Mehta

Lecturer

Research Interest:

Friction Stir Welding for Dissimilar Material Joining, Under Water Welding, Hybrid Welding, Advance Welding Processes.

Mr. Shabbir Memon

Lecturer

Research Interest:

Field of metal forming, manufacturing and virtual engineering, developing FLD (forming limit diagram).

Mr. Nirav Patel

Lecturer

Research Interest:

Stress Analysis, Composites, Advance Optimization techniques, Finite Element Analysis.

Mr. Vivek Patel

Lecturer

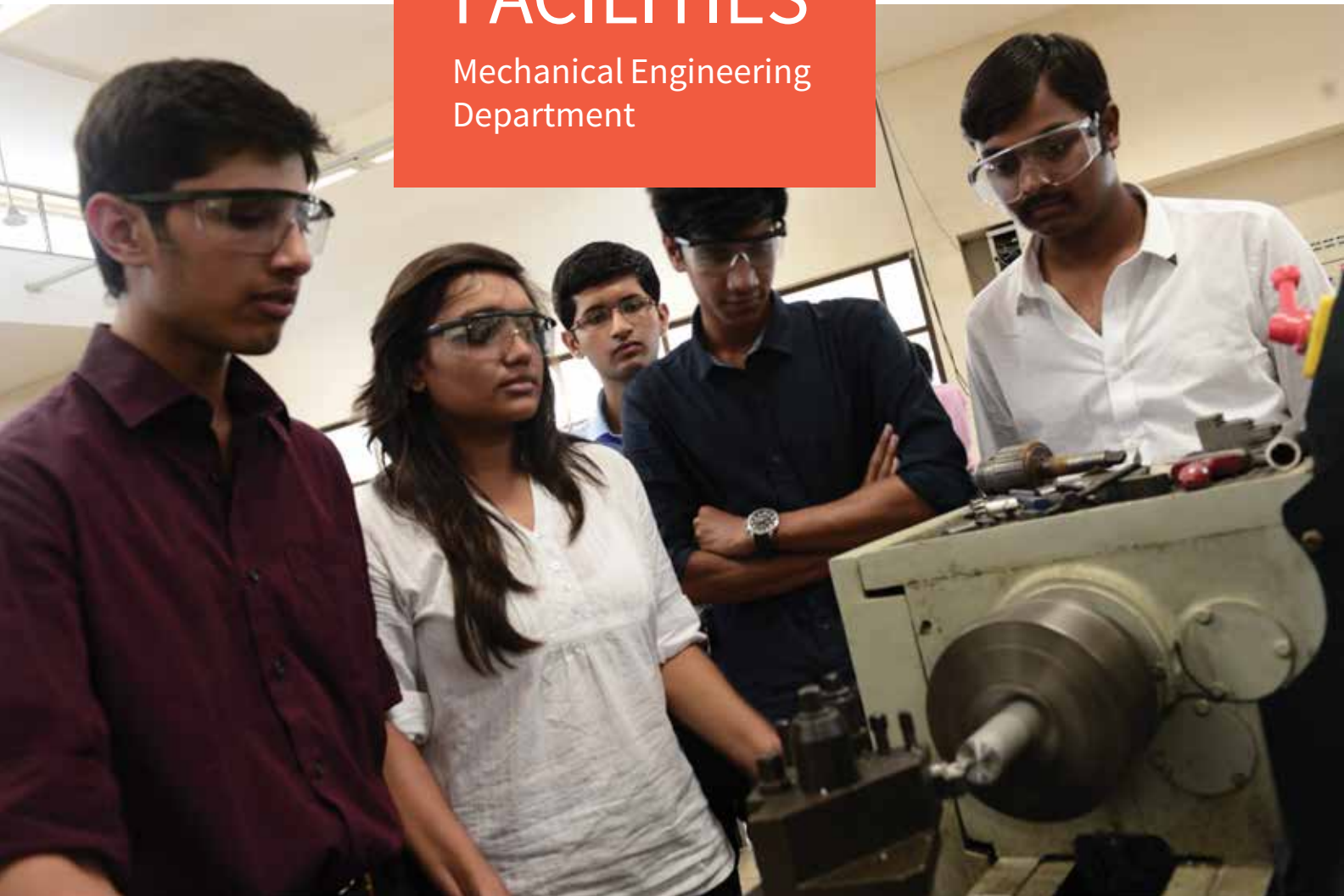
Research Interest:

Super plasticity through Friction Stir Processing.



LAB FACILITIES

Mechanical Engineering Department



Kinematics and Dynamics of Machines

Objectives of the laboratory are to impart practical knowledge on design and analysis of Mechanisms for the specified type of motion in a machine. With the study of rigid bodies motions and forces for the transmission systems, machine kinematics and dynamics can be well understood. Practical demonstration and study is required for the balancing and vibration to have the insight for the dynamics of machines. Various experiments with governors, gyroscopes, balancing machines and universal vibration facilities are available to understand machine dynamics.



Workshop and Fabrication

In this laboratory students acquire the knowledge of various trades and the usage of different tools such as files, hammers, chisels, snipers, anvils, cutting pliers, welding rods and different kinds of materials etc. It also deals with the various machining operations such as turning, milling, shaping, thread cutting, slotting, drilling, fitting, wood working, plumbing etc. Various machines are available for research projects also.



Fluid Mechanics and Fluid Machinery

Mechanical Engineering Department has different laboratories with state of art facilities. Fluid mechanics and Machines laboratory has all new comprehensive experimental set ups catering to the requirements of curriculum and above that. The laboratories cater to the needs of mechanical students in the subject of fluid mechanics and fluid machines. The laboratory is equipped with large number of equipments and experimental set ups to study the fundamentals and applied aspects of fluid mechanics and fluid machines.



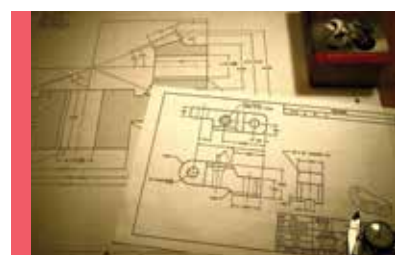
Manufacturing Processes

Manufacturing process laboratory is a heart of fabrication technology. This laboratory consist of highly advanced equipments related to Cutting / Forming / Welding processes like, SMAW, GTAW, GMAW, Gas cutting & Welding, Plasma cutting & welding, Spot welding, Friction stir welding, Butt welding, Automated GMAW, Universal lathe & Milling machines, Capstan turret lathe, Shearing machine, Shaper machine, Drilling machines, Miniature plastic injection molding machine, and various other metal cutting equipments.



Strength of Materials

Knowledge of material properties of materials is must for mechanical engineers to select appropriate material for different design applications. To serve this objectives, SOM lab is equipped with Universal testing machine, Universal compression machine, Torsional testing machine, Fatigue testing machine, Various hardness testing machines (digital version) and impact testing machines.



Engineering Graphics

Engineering drawing is known as the language of Mechanical engineer. To create world class engineers, this laboratory is provided with drawing facilities and drafting instruments. The students learn the fundamental of industrial drawings for product design.



Thermodynamics, Heat Transfer

The Thermodynamics and Heat Transfer Laboratory is the fundamental laboratory for thermal engineering applications and thermal system designs. The laboratory aims at providing hands-on experience to the students on the underlying theory. The basic objectives of this laboratory are to analyses and evaluation of experimental data, comparison between theoretical models and experimental data.



Refrigeration and Air Conditioning

Refrigeration and Air Conditioning Laboratory focuses on multidisciplinary academic and research work related to thermal comfort, design and optimization of cooling and heating systems while facilitating undergraduate students to conduct essential experiments related Engineering course. The laboratory is equipped with modern refrigeration and air conditioning systems with data acquisition.



Metrology and Measurement

The Metrology & Measurement laboratory is furnished with variety of instruments like Automatic Money Counter With Fake Money Detector, profile projector, gear rolling tester, micro meter screw gauges, Digital Varnier calipers, Telescopic gauge, Electronic comparator, Sine bars, Surface Measuring instruments, Dial bore gauges, Varnier depth/height gauges, Metric filler gauges, Taper/plain ring & plug gauges, Wire gauges, Dial gauges, Pyrometer, force & torque gauges, Slip gauges, Bevel protectors, Temperature calibration equipments, Hot water bath etc.



Non-Conventional Energy Sources

The non-conventional energy sources laboratory has the specialized in house simulator for teaching and research on solar flat plate collecto and solar still. The precise instruments for solar radiation measurements with data logging enable the researcher for testing the solar systems in the open sky.



CAD / CAM

Design is among the major part of expertise in the mechanical engineering practices. To serve the objective state of art CAD/CAM laboratory is equipped with 90 latest computing systems with various software like CREO 2.0 (Pro-e), Solid Works 2012, ANSYS 13.0, NX 8.0, AUTO CAD 2012, MATLAB 2009, DWG Editor etc. CAM learning equipments include CNC miniature Lathes, 3-axis CNC miniature milling machines with readymade and in-house programs for different products.



IC Engines

Study of engines is the most important part of mechanical engineering. Due care have been taken to provide various equipments for thorough understanding of practical aspect of the subject. Laboratory is equipped with experiment set up for Single Cylinder, 4 stroke, water cooled, Diesel engine Test Rig with Rope Brake Dynamometer; Exhaust Gas Calorimeter with Digital Tachometer; Equipment for Morse test on Multi-cylinder petrol engine with CNG kit; Turbo charged, 4 stroke, 4 cylinder diesel engine test rig with motoring test; VCR Engine performance test rig; 4-stroke petrol engine etc.





WELDING RESEARCH LAB

Dr. Vishvesh J Badheka, SOT, PDPU

Welding Research Lab development is carried out under various sponsored projects from different funding agencies like DST, DAE, BRFAST, and ISRO. Research facilities available under this lab and their major specification are given as follow.

Additionally various ancillaries available like Gas mixing devices, gas cylinders for different gases.

Custom Made Friction Stir Welding Setup Under BRFST, DAE, Project

M/s Ashapura Industries, Ahmedabad.

- Rpm-Max 3480 rpm
- Feed - Max145 mm/min;
- Tilt angle -5° to 5°
- Load cell-- 4 (1ton for each); 5HP

Advanced Gas Metal Arc Welding Setup Under DST Project

KEMPPi Make, Finland.

- Model ; KEMPPi 3200
- 80% duty cycle; 320 A
- Data Monitoring Device.

Advanced Gas Tungsten Arc Welding Setup Under BRFST, DAE Project

Panasonic make, Japan.

- Model BR1-200 (AC/DC)- 200A;
- 25 % Duty Cycle.

Friction Stir Welding – Basic Model Under ISRO, DOS Project

M/s Geeta Engineering, Jamnagar.

- Feed 20-800 mm/min
- RPM- 35-1500; 3HP

Specimen Cutting Machine

Vaiseshika Electronic Devices, Haryana.

- Model 7001CM
- RPM 3800; single phase
- Water coolant

Specimen Mounting Machine

Vaiseshika Electronic Devices, Haryana.

- Model no 7001SMP
- Mold dia; 22,30,45
- Heater ; 220V, 650W

Image analyzer- Upright Metallurgical Microscope

Vaiseshika Electronic Devices, Haryana.

- IMS 300TNC.
- Magnification-100x to 1000x
- Eye piece- 5x, 12.5x, 16x, 20x.
- Objective- 5x-100x.
- Travel range 50x 40mm.
- Computer interface, image capturing system.

Belt Grinder Machine

Vaiseshika Electronic Devices, Haryana.

Specimen polishing- double disk

Vaiseshika Electronic Devices, Haryana.

- Model – 7001PMD/PMS
- RPM- 750 to 1550.
- Motor – 0.5HP

Micro/Macro- Vickers, Knoop & Brineell hardness tester

ESEWAY, China.

- Model no NEXUS 4302
- Load range - 0.3, 0.5, 1, 2, 3, 4, 5, 10, 20, 30 Kgf.

ENGINEERING METALLURGY LAB

Lab In-charge - Dr. Vishvesh J Badheka

Engineering metallurgy lab offered in the 4th semester of mechanical and industrial engineering course. Under this lab students learnt fundamental of metallographic, microscopy and microstructure & macrostructure, hardness measurements- micro & macro both, in addition to ASTM std on mechanical testing. Lab facilities available under this lab along with specification as follow.



Workshops / Training

- Students participated in a 2 day Workshop on “Automobile and Engine Design”, by Metawing Enterprises at PDPU.
- Students participated in a 2 day Workshop on “Advanced autonomous robotics”, by e-Trix Think LABS, at PDPU.
- Students participated in a 2 day Workshop on “Science of Robotics” by Robosapiens India, at IIT Gandhinagar.
- Students participated in a 2 day Workshop on “Embedded Systems with Arduino”, by IEEE at PDPU.
- Students participated in a 2 day Workshop on “Graphical Programming Language-Lab VIEW”, by-IEEE at PDPU.
- Students participated in a 2 day Workshop on “Creative Thinking” by Entrepreneurship cell at PDPU.
- Students participated in a 1 day Workshop on “Artificial Intelligence” at Nirma University.
- Students participated in a 1 day Workshop on “Global Imaging System” at PDPU.
- Students participated in a 7 day Training program on “Lathe, Milling & welding machines”, at PDPU.
- Students participated in a 4 day Training program on “Creo -2 parametric” by Mechinerzo at PDPU.

Competitions

- Students participated in BAJA 2013 organized by SAE and successfully qualified all rounds.
- Students won 3rd prize among 100+ colleges in the Green Campus Challenge 2013 organized by IIT Bombay.
- Student secured all India 2nd Rank in the National Creativity Aptitude Test 2013, by IIT Delhi.
- Students participated and won prizes in various quiz like Science Quiz, Auto Quiz, Environment Quiz, Technology Quiz, N-lite-N quiz, Open Quiz, Design Quiz, IIM Quiz etc organized by different colleges, agencies and organization across the state.
- Students participated and won prizes in various robotics, designing, model making and technology based competitions at different colleges like NUFest Nirma University, Autumnfest SVNIT, Techfest IIT Bombay; Techfest LJJET, Techfest IIT Gandhinagar, Techfest Bits pillani etc.
- Students carried out a Case study on Non Conventional Energy Sources at Muni Seva Ashram – Baroda.
- Student did project (Project title: “An Improved, Direct Approach of Closed-loop Identification of Industrial Processes – Mathematical Analysis and Experimental Verification”) in “NI (National Instruments)-yantra” competition.

Conferences / Seminars

- Students attended an international conference on “Leadership training”, by ASME at Rajkot.
- Students attended a Seminar on “Youth Empowerment Program”, by Ahmedabad Management Association.
- Students attended an international conference on “explaining the Mpemba effect”, by Royal society of chemistry.
- Students attended an international seminar on “Geothermal Energy Initiative and Development” at PDPU.
- Students attended a conference on “SPAC (Students Professional Awareness Conference)”, by IEEE at DAIICT.

Paper presentation

- Student published a paper on “Review of Safety Practices in Welding Practices” at the International Conference on Safety 2012 at IIT Gandhinagar.
- Student published a paper on “improving the accuracy of GPS using Theory of Relativity” at NIRMA University.
- Student published a paper on “History of an aviation journey”, won gold medal, by NASA.



Other inter, intra and national level paper published includes

- Hybrid Electric Vehicles
- Intelligent Transportation Systems
- Alternative fuels for automobiles
- Environmental Pollution and Sustainability
- Energy and its perspectives- Issues, politics and policies
- Recent technology for sustainable development
- Automobile pollution and its mitigation



INDUSTRIAL Engineering

Industrial Engineering at PDPU is a confluence of the streams of Mechanical Engineering with Engineering Management. Also known as Operations Management, Manufacturing Systems Engineering, etc. the discipline of Industrial Engineering attempts to provide students with the skills required to make an organization function effectively and efficiently.

At PDPU, Industrial Engineering students study the Mechanical Engineering syllabus for the first two year. During subsequent years (semesters five to eight), the Industrial Engineering branch separates from Mechanical Engineering. During the third and fourth years, Industrial Engineering student study courses and work on projects in the areas of Quality Management, Lean Systems, Procurement and Materials Management, Logistics and Supply Chain Management, Operations Research, Production Planning and Scheduling, Project Management, Industrial Safety, etc.

Faculty in the Department of Industrial Engineering have research interests in the areas of Efficiency Measurement, Quality Management and Lean Systems, etc. Faculty share their experience in industry as well as academia to create a rich learning environment for students.



Course Structure

B.Tech Industrial Engineering

Semester I

- Mathematics I
- Engineering Materials
- Elements of Civil Engineering
- Elements of Electrical Engineering
- Workshop Practice
- Physics
- Communication Skills

Semester II

- Mathematics II
- Engineering Graphics
- Applied Mechanics
- Chemistry
- Elements of Mechanical Engineering
- Environment Studies
- Computer Programming

Semester III

- Mathematics III
- Thermodynamics
- Electrical Technology
- Mechanical Measurement and Metrology
- Strength of Materials
- Fluid Mechanics
- CSSI

Semester IV

- Numerical Techniques
- Manufacturing Processes – 1
- Design of Machine Elements
- Kinematics of Machines
- Engineering Metallurgy
- Fluid Machinery

Semester V

- Manufacturing Processes – 2
- Applied Statistics
- Industrial Environment and Safety
- Ergonomics, Human Factors and Product Design
- Operations Research – 1
- Economics
- Industrial Orientation

Semester VI

- Procurement and Materials Management
- Principles of Finance and Costing
- Measurement and Design of Work
- Production and Operations Management
- Production Technology
- Departmental Elective – 1
- Humanities Elective

Semester VII

- Quality Management and Statistical Quality Control
- CAD/CAM
- Planning of Facilities and Material Handling Systems
- Lean Systems
- Departmental Elective – 2
- Industrial Engineering Seminar
- Industrial Training

Semester VIII

- Project Management
- Supply Chain Management
- Simulation of Manufacturing and Service Systems
- Organizational Behavior & Human Resource Management
- Departmental Elective – 3
- Major Project





STUDENT ACTIVITIES

Clubs/Forums & Chapters

Tark (तर्क)

Tark (तर्क) is a student club of the department of Industrial Engineering. The club organizes activities like expert lectures, seminars and workshops related to Industrial Engineering.

American Society for Quality (ASQ) - Student Chapter

With the growing importance of Quality Management in industry in today's world, the department has taken an initiative to start a student chapter of the American Society for Quality (ASQ) at PDDPU. The student chapter invites speakers from industry and organizes workshops and seminars related to Quality Management. A certification scheme has also been implemented by ASQ for PDDPU students wherein students completing a series of workshops will be awarded a certificate by the American Society for Quality.

Seminar on Lean Manufacturing for Productivity Enhancement

Students of Industrial Engineering attended a seminar on Lean Manufacturing for Productivity Enhancement organized by the National Productivity Council (NPC). Twenty-four students from IE participated in the seminar.

Two day workshop entitled "Autonomous Robots using Microcontroller- AVR" organized jointly with the Mechanical Engineering department.

Students of Industrial Engineering were part of a team representing PDDPU at BAJA 2013 organized by the Society of Automotive Engineers

Students of Industrial Engineering participate in a technical club called MECHINERZO (Mechanical and Industrial Engineers' Zone). This club carries out various technical activities related to Mechanical and Industrial Engineering.



FACULTY PROFILE

Dr. Aneesh Chinubhai

Adjunct Professor & Head - Industrial Engineering

Research Interest:

Quality Management, Operations Management, Efficiency Measurement

Dr. M B Kiran

Associate Professor

Research Interest:

Surface Metrology, Image processing techniques, Dimensional Accuracy and Surface Finish in Additive Manufacturing, Digital signal processing, Pattern recognition, Nano-surface metrology.

Dr. Abhishek Kumar

Assistant Professor

Research Interest:

Electroplating, Electrochemical machining, Surface engineering, Coating, Friction stir processing

Ms. Poonam Savsani

Lecturer

Research Interest:

Robotic Trajectories, Optimization, Theory of machines and machine design





ELECTRICAL Engineering

Electricity is a vital form of energy and is an inevitable part of our lives. To match steps with this ever expanding world of electricity and contribute to its betterment we offer Graduate, Post Graduate level course in Electrical Engineering which deals with subjects like Fundamentals of Electrical Engineering, Electrical Machines and Design, Electrical Power Systems and Design, High Voltage Engineering, Electrical Measurements, Power Electronics and Drives, Microprocessors, Instrumentation and Control System, etc.

In order to strengthen the practical know-how for the theoretical background studied by the students various laboratories are available at their disposal along with a fully equipped computer center with latest softwares.



Course Structure

B.Tech Electrical Engineering

Semester I

- Mathematics - I
- Applied Mechanics
- Chemistry
- Computer Programming
- Communication Skills
- Engineering Graphics
- Environmental Science

Semester II

- Mathematics - II
- Physics
- Elements of Civil Engineering
- Elements of Electrical Engineering
- Engineering Materials
- Workshop Practice

Semester III

- Mathematics - III
- Network Theory
- Electronic Devices And Circuits
- Electronic and Electrical Engineering Materials
- Electromechanical Energy Conversion - I
- Electrical Measurement and Measuring Instruments

Semester IV

- Power System I
- Analog and Digital Electronics
- Communication Engineering
- Control Theory
- Electromechanical Energy Conversion - II
- Numerical Methods

Semester V

- Electromagnetics
- Instrumentation and Control
- Microprocessor and Microcontroller
- Modeling and Simulation
- Power System - II
- Power Electronics

Semester VI

- High Voltage Engineering
- Power System Design and Practice
- Switchgear and Protection
- Testing and Commissioning of Electrical Machines
- Renewable Energy Engineering
- Industrial Psychology

Semester VII

- Electrical Machine Design - I
- Power System Operation and Control
- Advanced Microcontroller and Embedded System
- Department Elective I (Power Quality / Energy Management)

Semester VIII

- Electrical Machine Design - II
- Electrical Power Utilization and Traction
- Digital Signal Processing
- Department Elective II (Advances in Power System / EHV Ac and Dc Transmission)
- Major Project
- Project Management

STUDENT ACTIVITIES

Clubs/Forums & Chapters

IEEE Student Branch, PDPU

Institute of Electrical and Electronics Engineers (IEEE), an association dedicated to advancing innovation and technological excellence for the benefit of humanity, is the world's largest technical professional society.

It is designed to serve professionals involved in all aspects of the electrical, electronic and computing fields and related areas of science and technology that underline modern civilization.

IEEE Student Branch at PDPU was established in June, 2012. PDPU IEEE student branch, its core purpose is to serve professionals involved in all aspects of the electrical, electronic and computing fields and related areas of science and technology that underline modern civilization. The goal of the IEEE student chapter programs is to ensure the growth of skill and knowledge in mainly the energy-related technical professions and to foster individual commitment to continuing education among members.

The purpose shall be the dissemination of knowledge of the theory and practice of all aspects of electrical engineering, electronics, radio, allied branches of engineering or the related arts and sciences, as well as the furtherance of the professional development of the Students. Since its commencement it has been successfully organizing different activities and events such as workshops, guest lectures and seminars, which provides students a platform to develop their technical skills. Some of the eminent events are LabVIEW workshop organized in collaboration with National Instruments; Scilab Workshop organized in collaboration with IIT Bombay and IEEE Student Section Congress 2013.

Electrical Students Professional Association (ESPA)

The forum's objectives are to:

- Facilitate communication and cohesiveness among students, faculty, other student organizations, and the university. B. To consider issues and to review, recommend, or formulate policies (as appropriate) in areas primarily or exclusively involving the Student Body.
- To foster technological innovation and excellence for the benefit of humanity.
- To give an information about Technical work in Professional world.
- To keep the members consistently updated about the new upcoming technologies and inventions.





FACULTY PROFILE

Dr. Vivek Pandya

Associate Professor & HOD

Research Interest:

Protections of EHVAC Lines, Power System Protection

Dr. Jitendra G. Jamnani

Associate Professor

Research Interest:

Electrical Machines and Power Systems

Dr. Pratik Shah

Assistant Professor

Research Interest:

Computer Vision, Image Processing

Mr. Anil Markana

Lecturer

Research Interest:

Advance Process Control, Optimal Control strategies like Model Predictive Control, Linear Quadratic Gaussian Control, GPC, Minimum Variance Control

Mr. Astik Dhandiya

Lecturer

Research Interest:

Power system stability, Static security assessment

Mr. Vatsal Shah

Lecturer

Research Interest:

Digital Power Control, Embedded Systems

Mr. Siddharth Joshi

Lecturer

Research Interest:

Wind Energy System and its Grid connection, Maximum power point tracking of stand-alone systems

Ms. Mary Prasanna

Lecturer

Research Interest:

Power System Operation and control, study of power system dynamics.

Mr. Pulin J. Purohit

Lecturer

Research Interest:

Shunt active power filter.

Mr. Nitin R. Prajapati

Lecturer

Research Interest:

Model based control system, model predictive control

Ms. Leena Santosh

Lecturer

Research Interest:

Power System operational control and unit commitment using AI.



LAB FACILITIES

Electrical Engineering Department



Power System and Protection

Protective relaying is a vital part of any electric power system: unnecessary during normal operation but very important during trouble, faults, and abnormal disturbances. Properly applied protective relaying initiates the disconnection of the trouble area while operation and service in the rest of the system continue. With a view point of developing technical hands-on know how to theoretical concept studied by students of the university, the laboratory is indigenously developed.



Analog and Digital

The Lab is equipped with various training kits to explore the practical aspects of topics from subjects like Electronic Devices and Circuits, Analog and Digital Electronics. At the same time, students are encouraged to prepare the complete circuit on bread-board and verify the results with the results obtained from the training kits.



Communication

This lab is equipped with all major training kits required to study the concepts of Analog Communication Methods (like Amplitude, Frequency and Phase Modulation and Demodulation) and Digital Communication Methods (Sampling Theorem, ASK, FSK, PSK)



Modelling and Simulation

In this Lab students get to work on some of the many efficient software like LabVIEW, MATLAB, Scilab, PSIM, Qaurc Software.



High Voltage

The High Voltage laboratory of Pandit Deendayal Petroleum University, sponsored by GSECL is one of the best of its class. It is a small sized laboratory with good number and quality of equipments.



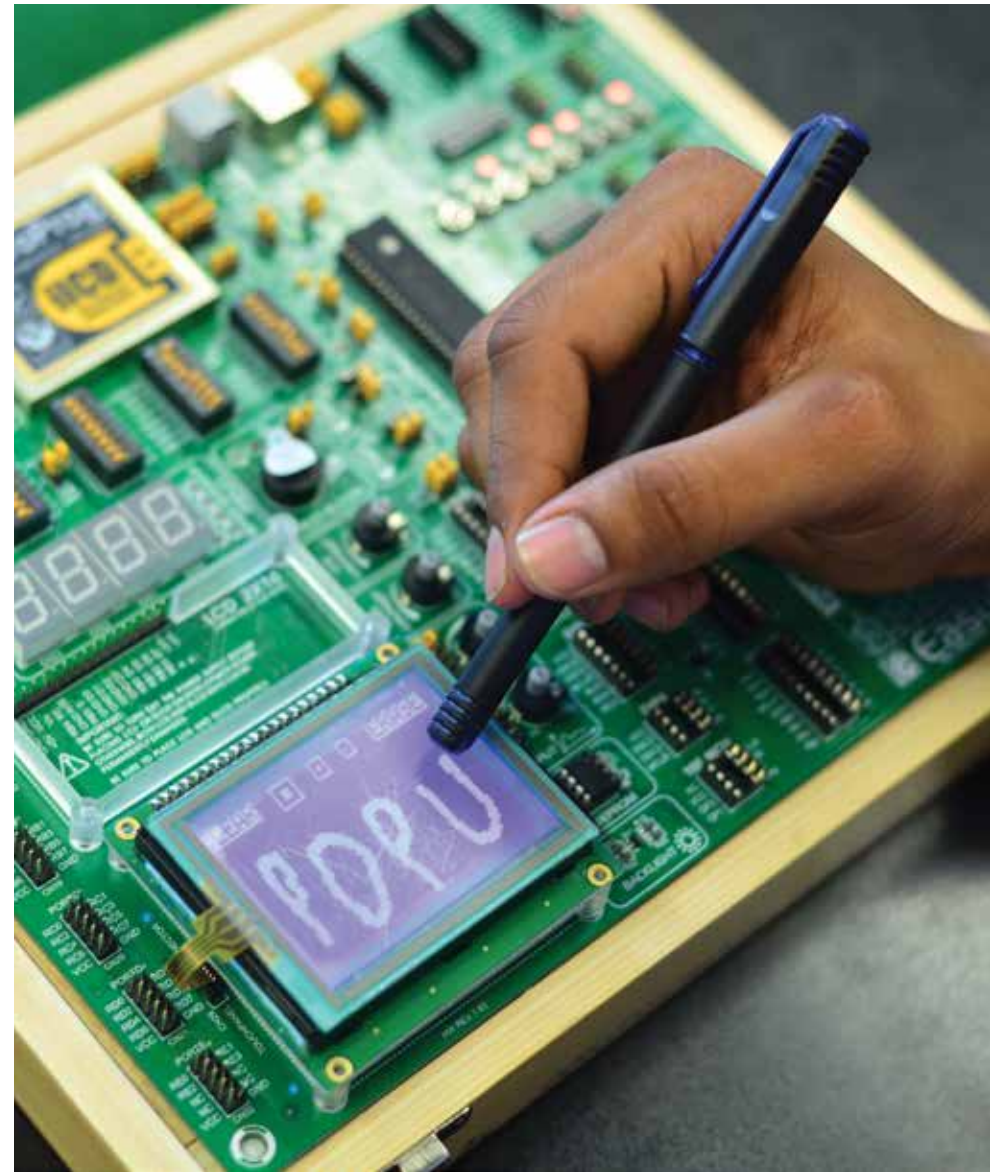
Electromechanical Energy Conversion

There are equipments like single phase step up, step down and isolation transformers, dc shunt, series motor, three phase induction motor, induction motor, dc generators, and various machines for performing various tests related with the specific machine. This lab gives us the precise opportunity to get a hands-on experience with machines and help us develop clarity and clear perception.



Microprocessor & Microcontroller

This Lab has various system development board cum trainer to understand different Microprocessor and Microcontrollers. It has advanced trainer kit for various processors to study assembly programming as well as interfacing of these processors with various peripherals.



Network Theory

The presence of basic electrical equipments such as interconnection of two-port network, RL/RC circuit, T and Pi network and home electrical wiring training system make the laboratory sufficient to develop the basic course structure.



Process Dynamics and Control

Process Dynamics and control is one of the most efficient and exquisite lab in PDPU.



Power Electronics and Drives

The lab conducted includes learning of gate/ bus triggering circuits, single phase rectifier, switched mode dc-dc converter, SEDC (chopper fed), SEDC motor drive (controller rectifier fed) and PMDC motor drive (controller rectifier fed) etc. The lab sessions are apt as per the requirement of the course.





CIVIL Engineering

Civil Engineering is considered to be the most versatile branch among all the engineering branches. The Department of Civil Engineering since its formation is committed to research and development in civil engineering. The vision of the department is to give an exposure to budding civil technocrats to various challenges in the profession.

The department offers courses at undergraduate level, graduate level and Ph.D doctorate level. The main areas of research include Project Management, Construction Management, Geotechnical Engineering, Structural Engineering, Hydrology, GIS and GPS Systems, Environmental Engineering, Concrete Technology and Transportation Engineering. The department also handles consultancy works & projects in the above mentioned areas.



Course Structure

B.Tech Civil Engineering

Semester I

- Mathematics I
- Engineering Graphics
- Applied Mechanics
- Chemistry
- Elements of Mechanical Engineering
- Environmental Studies
- Computer Programming

Semester II

- Mathematics II
- Engineering Materials
- Elements of Civil Engineering
- Elements of Electrical Engineering
- Workshop Practice
- Physics
- Communication Skills

Semester III

- Mathematics III
- Surveying
- Fluid Mechanics-I
- Building Planning & Drawing
- Building Construction & Materials
- Structural Analysis - I
- Engineering Geology

Semester IV

- Numerical Techniques
- Advanced Surveying
- Fluid Mechanics-II
- Environmental Engineering-I
- Concrete Technology
- Structural Analysis - II

Semester V

- Transportation Engineering - I
- Hydrology & Water Resources
- Environmental Engineering - II
- Geotechnical Engineering-I
- Design of Reinforced Cement Concrete Structures
- Urban and Rural Planning

Semester VI

- Transportation Engineering - II
- Irrigation Engineering
- Computer Aided Design
- Geotechnical Engineering - II
- Design of Steel Structures
- Organizational Psychology

Semester VII

- Construction Equipments & Methods
- Estimation & Cost Analysis
- Earthquake Engineering
- Seminar
- Finite Element Method
- Advanced Concrete Design / GIS and RS

Semester VIII

- Civil Engineering Project
- Professional Practice & Valuation
- Computer Aided Design - II
- Management Concepts & Practices
- Project Management
- Retrofitting Rehabilitation of Structures
- Ground Improvement Techniques

STUDENT ACTIVITIES

Clubs/Forums & Chapters

Civil Engineering Forum

Inaugurated on 28th January, 2012, The Civil Engineering Forum of Civil Engineering Department, PDPU aims to provide an arena to the students to boost their technical acquaintance & produce themselves a better professional in the community. It aims to give the students the extra edge apart on the academics so as to develop a research temperament. This is an integral part of the Department of Civil Engineering. It provides a platform to students to gain knowledge, explore and to execute their ideas in Civil Engineering. It serves as an umbrella forum for all the student organizations under the department.

Rotaract Club

Rotaract club of PDPU was established in August 2012 with the joint efforts of all the schools at PDPU. Rotaract's club objective is leadership development & service — in the community, in the workplace, and around the globe. The 1.2 million Rotarians who make up more than 34,000 Rotary clubs in nearly every country in the world share a dedication to the ideal of Service above Self.

Rotaract club of PDPU had organized an event on entrepreneurship in association with Point 10 named "e-Chai insights at PDPU". The event was focused on extracting talents from the budding mind of students and provides them a platform to showcase their skills.



Indian Green Building Council (IGBC) Chapter

Indian Green Building Council (IGBC) is the apex body in India with a vision to enable a sustainable built environment for all and facilitate India to be one of the global leaders in sustainable built environment by 2025. It houses 1,491 members, 2,111 registered buildings, 362 rated buildings and 1,049 accredited professionals. The IGBC chapter aims to reach out the IGBC Vision at the Regional Levels with agendas to faster penetration & reach, reach out to wider section of stakeholders and involve local agencies & Institutions in the Green building movement.

Institution of Civil Engineers (ICE-UK) Student Chapter

Department of Civil Engineering has come up as a torch bearer in introducing Institution of Civil Engineers-UK student chapter in India. ICE was founded in 1818 by a small group of idealistic young men. We were granted a royal charter in 1828 where we declared that our aim was to "foster and promote the art and science of civil engineering". The active chapter organizes a series of activities for the civil and non-civil engineering students of PDPU including conferences, workshops, seminars and expert talks.





FACULTY PROFILE



Dr. H. B. Raghavendra
Professor

Research Interest:
Reinforced earth, Soil structure interaction, Environmental waste management, Ground improvement, Foundations on problematic soils.

Dr. Debasis Sarkar
Associate Professor & HOD

Research Interest:
Project Management, Project Risk Management, Underground Corridor Construction for Metro Rail Operations, SQC of Ready Mixed Concrete, Green Building Materials & Technology

Dr. Tejas Thaker
Assistant Professor

Research Interest:
Earthquake hazard and mitigation, Ground Improvement and waste management

Dr. Manas K Bhoi
Assistant Professor

Research Interest:
Geotechnical Engineering

Dr. Trudeep Dave
Assistant Professor

Research Interest:
Soil-structure interaction, Field applications of Geosynthetics.

Mr. Rajesh S. Gujar
Lecturer

Research Interest:
Infrastructure Planning & Management

Mr. Apurva Dave
Lecturer

Research Interest:
Structural Design & Structural Engineering (Steel & R.C.C.)

Ms. Niragi Dave
Lecturer

Research Interest:
Concrete Technology, Utilization of waste materials in Concrete structures.

Mr. Akshay Jain
Lecturer

Research Interest:
GIS Applications in Water Resource Engineering, Flood Modeling

Mr. Naimish S. Bhatt
Lecturer

Research Interest:
Application of GIS and Remote Sensing in Civil Engineering, Flood Routing and Mitigation Techniques, Watershed Management and Development

Mr. Ronak Motiani
Lecturer

Research Interest:
Steel Structure, Structural Dynamics

Prof. Rajinikant Patel
Visiting Faculty

Research Interest:
Infrastructure Financing & Management

Mr. Ronak Shah
Visiting Faculty

Research Interest:
Structural Engineering



LAB FACILITIES

Civil Engineering Department

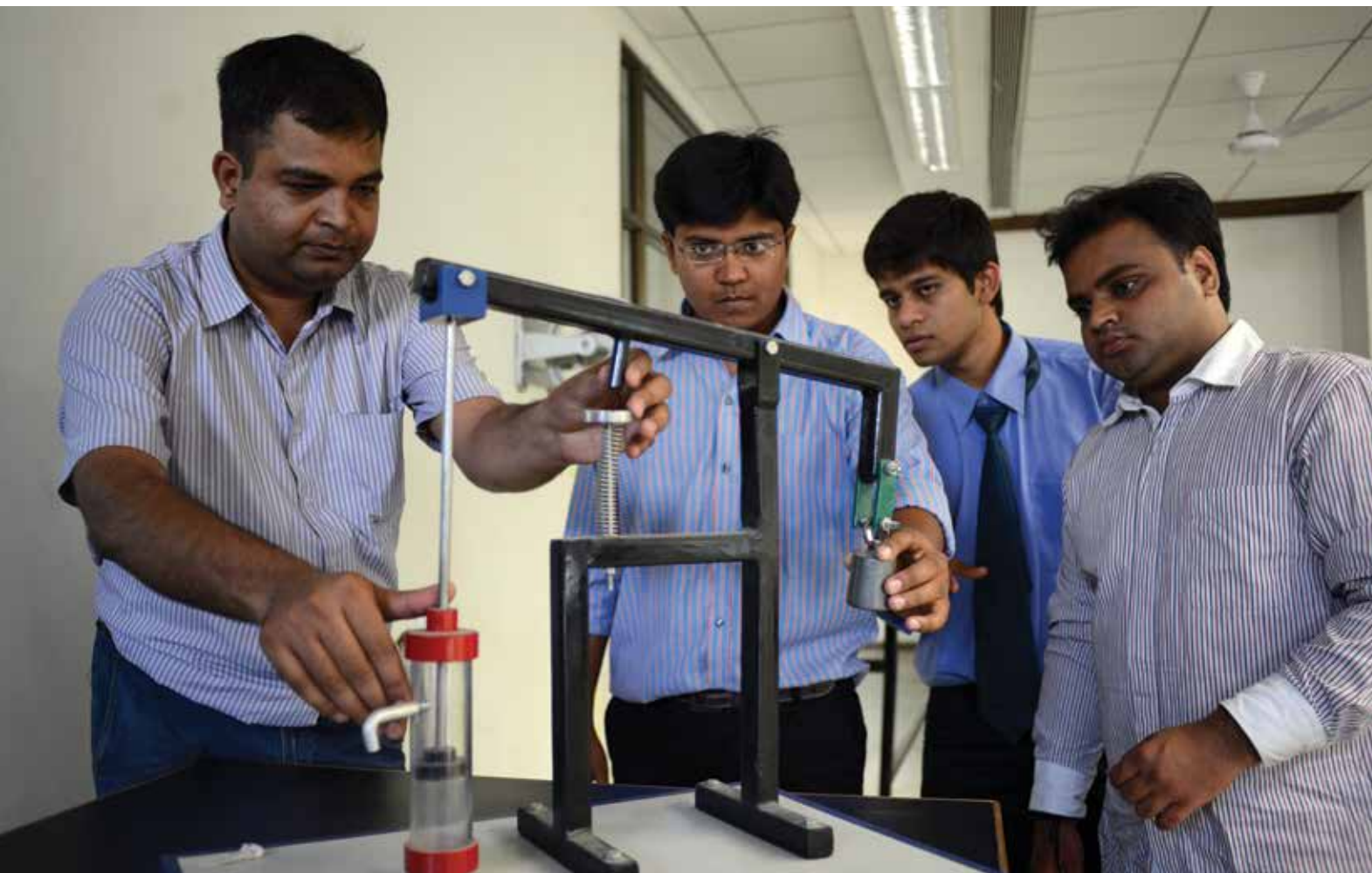
The DCE has setup number of laboratory as per the relevant course structure. Laboratories are well equipped to facilitate the academic and research activities. Laboratories are being continuously upgraded with new equipment.

The practical classes are well integrated into the curriculum, but the department encourages even more extensive use of these facilities to nurture a research led environment. To strengthen the research work of the M.Tech and Ph.D students who rely extensively on experiments to validate their work.



Applied Mechanics

Top-notch advanced experimental facilities in the state – Bell crank lever, compound wheel & differential axle, apparatus for reaction of forces in beam, apparatus for Centre of gravity, combined plane arch friction slide apparatus.



Fluid and Hydraulics Structure

Fluid mechanics lab deals with the equipment used in testing of hydraulic structures, coefficient of discharge, Reynolds number for a pipe flow, minor losses, friction factor for the pipes - Impact of jet apparatus, metacentric height apparatus, Reynolds apparatus, major & minor losses apparatus, orificemeter, venturimeter, rotameter notch apparatus, forced vortex apparatus.



Environmental Engineering

This laboratory working such as analysis environmental impact and controlling pollution, for this practices laboratory upgraded with new equipment– PH meter kit, portable turbidity meter, hand hold TSS meter, UV-visible spectro photometer, COD reactor, BOD incubator, Muffle furnace with thermo static control.



Computer Simulation

The labs are being continuously used by students for purpose of software application on designing and drafting – AutoCAD for drafting, STAAD.Pro for structure design & analysis, Etab, Project management, quantum GIS, Bentley WaterCAD for cost estimation, WaterCAD- suverCAD & StromeCAD for hydraulics structure design & analysis, OHB projector.



Concrete Technology

Concrete laboratory which are well equipped to facilitate the getting empirical knowledge by performing difference practical – flexure testing machine, concrete mixer machine, LA abrasion testing machine, mechanical sieve shaker, impact testing machine, crushing valve test apparatus, vibrating table.



Geotechnical Engineering

For the testing of soil behavior and characterizes laboratory has unique instruments - Soil hydrometer, permeability apparatus, consolidation apparatus, unconfined compression tester, CBR testing machine, Triaxial test apparatus, SPT equipment, plate bearing test, direct shear test machine.



New Equipments / Important Equipments:

- Concrete Test Hammer
- Compression Testing Machine 2000 KN (Digital)
- Flexural Testing Machine
- Los Angeles Abrasion Testing Machine
- Buoyancy Balance
- Ultra Sonic Pulse Velocity Tester



Research Focus:

The focus of Geotechnical Engineering research group's is to find cost effective and sustainable ways of improving engineering properties of soils/ rocks to ensure safety and reliability of Infrastructural developments. The group undertakes research activities in the areas of ground improvement, geosynthetics, geo-environment, laboratory and insitu investigations of soil/rock, site characterization and exploration techniques, geotechnical earthquake engineering, seismic hazard analysis and microzonation techniques, soil-structure interaction and numerical analyses. In order to enhance the understanding of the fundamental behavior of engineering soils/ rocks, comprehensive courses have been developed to engage both students and industry with an emphasis on the application of geotechnical processes to solve engineering problems. In addition to conventional experimental facilities, several new sophisticated and advanced equipments have been added like fully automated triaxial system with GDS controller, static and cyclic plate load test with data logging system etc.

New Equipments / Important Equipments:

- Standard Penetration Test Apparatus
- Plate Bearing Test Apparatus
- Direct Shear Apparatus
- Triaxial Test Apparatus
- Vane Shear Apparatus
- Consolidation Apparatus Three gang
- Soil Cone Penetrometer (Digital Type)
- Swell Test Apparatus
- C.B.R. Testing Machine
- Unconfined Compression Tester (Motorised cum Hand Operated)
- Permeability Apparatus



Research Focus:

Research at the Infrastructure Materials Lab focuses on concrete durability, early-age properties of concrete and the pursuit of high-performance civil engineering materials. Concrete, the most widely used building material in the world, is a sustainable material when properly designed and constructed. While new materials may show promise, they are often made from natural resources that are simply not found in quantities abundant enough to compete with or even replace the most used construction material in the world, concrete. It is for this reason that concrete is the most advantageous for further development as an advanced material, and enhancements to concrete to generate special properties or to achieve superior performance may be a central path forward to ensure both long-term durability and sustainability.





Surveying & GIS

Laboratory has number of instrument which contain basic to advance instrument – Total Station with 5" accuracy, theodolite, auto level with telescopic staff, line ranger, French cross staff, plane table, dumpy level.

Research Focus:

The research focus is primarily on Geographical Information System (GIS) Mapping and Modeling for various applications in the field of Civil Engineering. Also Global Positioning System (GPS) based work for precise measurement of coordinates are carried out.

New Equipments / Important Equipments:

- Trimble GeoXT GPS (Base1 and Rower:5) with Post Processing Software (Pathfinder Software)
- ArcGIS 10.2 Software for mapping and modeling
- Total Station
- Digital Distance Meter
- Digital Plannimeter



Project Management Computational Laboratory

Research Focus:

Project Management Computational Laboratory primarily focuses on facilitating research on the current trends of project management. Use of project management softwares like Microsoft Project Software (MSP), Primavera and risk management softwares like Riskamp, @ risk software and Crystalball softwares are primarily used to carry out the research in project management.



Transportation Engineering

Separate facilities for transportation engineering and pavement engineering Equipment for advanced testing with maximum accuracy – Digital ductility testing machine, standard tar viscometer, ring & ball apparatus, specific gravity bottle apparatus, flash & fire point test apparatus.

Research Focus:

Transportation laboratory focuses on applied research into state and national transportation priorities. Current research activities include: transportation safety, human factors, intelligent transportation systems, accessible transportation systems and congestion management, transportation engineering education, and access management and pavement material like bituminous, aggregate, soils testing.

New Equipments / Important Equipments:

- Standard Penetrometer
- Pavement Dynamic Cone Penetrometer
- Ring And Ball Apparatus
- Cleaveland Flash & Fire Point Test Apparatus
- Standard Tar Viscometer
- Benkelman Beam
- Digital Ductility Testing Machine
- Pensky-Martens Closed Cup Tester



CHEMICAL Engineering

The Department of Chemical Engineering (DCE) at PDPU adopts a philosophy of *'discovery learning to generate knowledge through experience and innovative ideas'*. DCE focuses on comprehensive course curriculum with intense practical exposure to the students which will enable them to take up challenging professional careers in various fields such as product and process design in Chemical Industries and allied sectors such as oil and natural gas, petroleum and petrochemicals, fine and heavy chemicals, coal chemicals, fertilizer and agrochemicals, plastics, polymers and others, apart from dealing with problems of energy conservation and environmental pollution.



Course Structure

B.Tech

Chemical Engineering

Semester I

- Mathematics I
- Applied Mechanics
- Chemistry
- W. S. Practice
- Computer Programming
- Communication Skills
- Engineering Graphics
- Environmental Science
- National Sports Organization

Semester II

- Mathematics II
- Physics
- Elements of Civil Engineering
- Elements of Electrical Engineering
- Elements of Mechanical Engineering
- Engineering Materials
- Workshop Practice

Semester III

- Mathematics III
- Engineering Chemistry
- Fluid Flow Operation
- Chemical Process Calculations
- Chemical Engineering Thermodynamics I
- Heat Transfer Operations

Semester IV

- Numerical Techniques in Chemical Engineering
- Electrical and Electronics Technology
- Solid Fluid Operation
- Chemical Engineering Thermodynamics II
- Process Heat Transfer Design
- Chemical Process Technology I (Organic)

Semester V

- Chemical Reaction Kinetics
- Mass transfer I
- Chemical Processes Technology II (Inorganic)
- Modelling and Optimization
- Process Instrumentation
- Transport Phenomena

Semester VI

- Chemical Reactor Design
- Mass transfer II
- Process Equipment Design
- Process Dynamics and Control
- Energy Technology
- Humanities Elective

Semester VII

- Computer Aided Process Design
- Polymer Science and Technology
- Petroleum Refining and Petrochemicals
- Industrial Economics
- Seminar
- Department Elective I

Semester VIII

- Environmental Engineering and Pollution Control
- Process Plant Safety, Health and Hygiene
- Project Management
- B. Tech. Project
- Department Elective II
- Department Elective III





STUDENT ACTIVITIES

Clubs/Forums & Chapters

IChE Student Chapter

IChE (Indian Institute of Chemical Engineers) student chapter at the Department of Chemical Engineering has been established in 2013. The PDPU IChE Student Chapters actively arrange expert lectures, seminars, workshops, quizzes, group discussions, plant visits, etc., at regular intervals to better equip and empower our students when they come out of their academic confines.



FACULTY PROFILE



Dr. Pravin Kodgire
Assistant Professor and HOD

Research Interest:

- Polymer Blends and Composites
- Biofuel
- Fluid mechanics
- Energy and Environment

Mr. Himanshu H. Choksi
Lecturer

Research Interest:

- Catalysis, Biodiesel production Techniques, Heat Transfer, Process Equipment Design

Ms. Bharti Saini
Lecturer

Research Interest:

- Water & Wastewater Treatment,
- Environmental Engineering

Mr. Anirban Dey
Lecturer

Research Interest:

- Chemical Process Technology
- Nanotechnology aided methodology

Dr. Sukanta K. Dash
Assistant Professor

Research Interest:

- Clean Energy and Environment, Carbon Capture and Sequestration, Gas Processing, Chemical Thermodynamics and Reactor Design, Process Modelling and Simulation, Solar Adsorption Cooling.

Ms. Anvita Sharma
Lecturer

Research Interest:

- Biodiesel production, Mass transfer, Computer aided Process Dynamics and Control

Mr. Abhishek Kumar
Lecturer

Research Interest:

- Transport phenomena
- Process Instrumentation, Catalysis

Ms. Sweta Balchandani
Lecturer

Research Interest:

- Waste Utilization, Modelling and Simulation
- Solid-fluid operation, Process Economics

LAB FACILITIES

Chemical Engineering Department



Fluid Flow Operation Lab

Fluid Flow operation lab deals with experiments focused on measurement of fluid flow properties such as fluid viscosity, density, velocity and its distribution etc. Study of fundamental experiments like Reynolds experiment, Stokes law are also performed. Various experimental set up are available to estimate frictional losses and minor losses in circular pipe, annular sections, various pipe fittings and valves. It has flow measurement devices such as Venturi meter, Pitot tube, Orifice meter, Weirs & Notches, Centrifugal pump etc. Models of pumps, pipes fittings, valves, plumbing system are also available.



Solid-Fluid Operation Lab

This laboratory is well-equipped for the study of various mechanical unit operations in process industries, which are essential for cleaning and preparation of raw materials. These operations include size reduction, size separation, clarification, kneading, solid fluid separation etc. All basic experiments for fluid particle mechanics like Jaw Crusher, Ball Mill, Hammer Mill, Sigma Mixture, Plate and Frame Filter press, Vacuum Filter, Cyclone Separator, Froth Flotation, Batch Sedimentation, Sieve Shaker, Hydrodynamics studies of fluidization are available in this laboratory.



Process Heat Transfer Lab

Heat Transfer Laboratory helps the students to understand the mechanism of Conduction, Convection and Radiation which are the basic modes of heat transfer that take place in various chemical process equipments. To enhance the practical knowledge of industrial equipments, students perform experiments on heat transfer equipments such as Double Pipe Heat, Shell & Tube Heat, and Plate and, finned tube heat exchanger. They also conduct performance study and heat transfer coefficient of single effect evaporator, horizontal and vertical condensers apart from conduction, convection and radiation experimental study.



Mass Transfer Labs

Mass transfer laboratories are equipped with some of the important experimental facilities for stage wise separation and purifications such as sieve plate distillation, steam distillation, Plate and Packed bed absorptions, wetted wall contactors, etc. Important experiments include, gas absorption, extraction and leaching, crystallization, air-water humidification operation, drying, etc. Apart from this, basic fundamental mass transfer like gas diffusion, liquid diffusion and diffusion with chemical reaction are also available.



Chemical Reaction Engineering Labs

Chemical reaction engineering labs are intended to facilitate undergraduate students to the areas of chemical kinetics, reactor design and operations. Some of the experiments are related to chemical kinetics, interpretation of reactor data and correlations.

Operation of reactors such as isothermal Batch Reactor, Continuous Stirred Tank Reactor (CSTR), Plug Flow Tubular Reactor and multiple reactors in series are available.

Experiments related to dynamics of reactor, RTD studies of various reactors and its performance are integral part of many experiments. Pure gas cylinders with GC-MS, high pressure autoclave, and other analytical tools are also available.



Process dynamics and control Lab

Process control and dynamics is an important aspect of any chemical process Industry, This lab deals with studies on determination of time constant for first order and second order processes, dynamics of vessels, pressure and temperature variation under interacting and non interacting system, apart from level and flow controls. Various controllers such as P, PI and PID and control valves are available.



Computer Aided Process Design Lab

The Process design and simulation lab has 60 personal computers, servers and workstations hosting a variety of software used in chemical engineering. Students given training on advanced simulation for process engineering. Some of the software such as :

ASPEN PLUS, HYSIS, MATLAB, ANSYS POLYMATH etc., available to cater the development of process modelling, Flow sheeting, Material and energy balance, Simulation, Optimization, and synthesis techniques for chemical and environmental engineering processes.



Environmental Engineering Lab

This lab focuses on both environmental sciences and Engineering. A wide range of experiments illustrating the basic principles of Air, water and waste water analysis with pollution parameters are available. BOD Incubators, COD and SPM analyzers, laminar flow chamber, autoclaves, pH meter, conductivity meter, UV spectrophotometer, TSS analyzer, DO analyzers, Jar test apparatus etc are available. Other facility include muffle furnace, precision weighing balance, dust sampler, noise meters etc.

SEMINARS AND WORKSHOPS

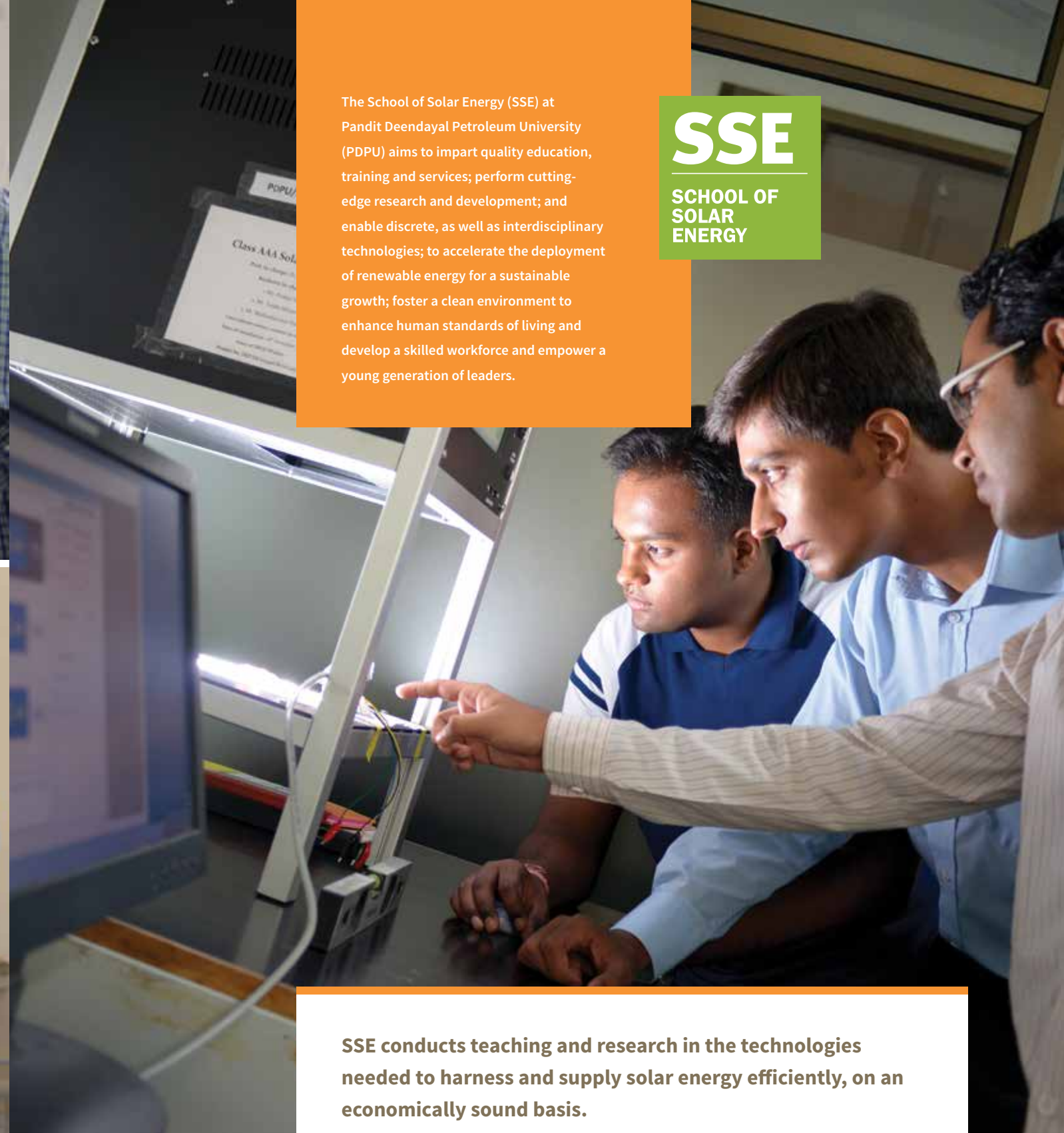
Workshop on **'River Restoration'** jointly organized by PDPU, Water Management Forum peripheral body of Institute of Engineer's, India held at PDPU on 5th July, 2013

The Department has conducted a national level workshop on **"Awareness on Biodiesel Production & Applications"**, 30th July, 2013

The Department has conducted a national symposium on **'Advancements and Design trends in Chemical Engineering'** on 11th April, 2014

The Department has conducted a workshop on **"Computational Fluid Dynamics: Fundamentals and Engineering Applications"**, 29-30th March, 2014

Understanding the importance of Industry-academia relationship, the department is gearing up to conduct International conference on chemical Industries on 22-23 August, 2014.



The School of Solar Energy (SSE) at Pandit Deendayal Petroleum University (PDU) aims to impart quality education, training and services; perform cutting-edge research and development; and enable discrete, as well as interdisciplinary technologies; to accelerate the deployment of renewable energy for a sustainable growth; foster a clean environment to enhance human standards of living and develop a skilled workforce and empower a young generation of leaders.

SSE
SCHOOL OF
SOLAR
ENERGY

SSE conducts teaching and research in the technologies needed to harness and supply solar energy efficiently, on an economically sound basis.

SSE operates in close collaboration with Solar Energy Research Wing of GERMI and Research, Innovation & Incubation Centre (GRIIC) as well as other national and international institutes/labs such as IIT Bombay, IIT Delhi, IIT Jodhpur, IIT Gandhinagar, SP University, CHARUSAT, SVNIT Surat, NIRMA University, CSMCRI Bhavnagar, NPL, ISCT Hyderabad, University of Toronto, Nagoya Institute of Technology, University of Saskatchewan and many others.



M.Tech

ENERGY SYSTEMS AND TECHNOLOGY, FOCUSED ON SOLAR ENERGY

require successful completion of prescribed course works.

Basic features of M.Tech:

- Course credit requirement for M.Tech: 124 (with compulsory industrial internship)
- M.Tech projects to be carried out during second year:
 1. On industrial problems
 2. Photovoltaic materials development and solar cell design
 3. Based on real time PV cell/ module or system level performance and sustainability studies
 4. Performance studies of running PV/CSP/ CST plants in and around the world
 5. On problems relating to storage in PV esp. in Batteries
- M.Tech project works are counselled based on the background and first year courses performance of the student.





Course Structure

M.Tech Solar Energy

Semester I

CORE COURSES

- Mathematical Techniques
- Quantum Mechanics & Semiconductors
- Thermodynamics & Heat Transfer
- Vacuum Science & Thin Film Technology
- Renewable Energy & Energy Management

ELECTIVE

- Semiconductor & Optoelectronic Devices
- Nano-structured Materials for Energy Devices
- Heat Ventilation & Air Conditioning

LABORATORY WORK/ ENERGY LAB-1

- To study various renewable energy source options (PV, Wind etc.) installed at PDPU campus
- To study various techniques and characterization of thin film.

Semester II

CORE COURSES

- Photovoltaic Science & Engineering
- Solar Thermal Engineering
- Semiconductor Processing & Characterization
- Modelling & Simulation
- Galvanic Energy Storage
- Research Methodology

ELECTIVE

- Applied Photovoltaics
- Solid and Surfaces
- Photovoltaic Power Plant Engineering
- Advance Heat transfer

LABORATORY WORK/ ENERGY LAB-2

- To perform kit based experiments of PV modules that will identify various parameters and characteristics of solar PV system.
- To study complete cell characterization.
- To study of various inverter systems for renewable energy sources.
- Study of PV Emulator and Grid Tied PV Simulator.

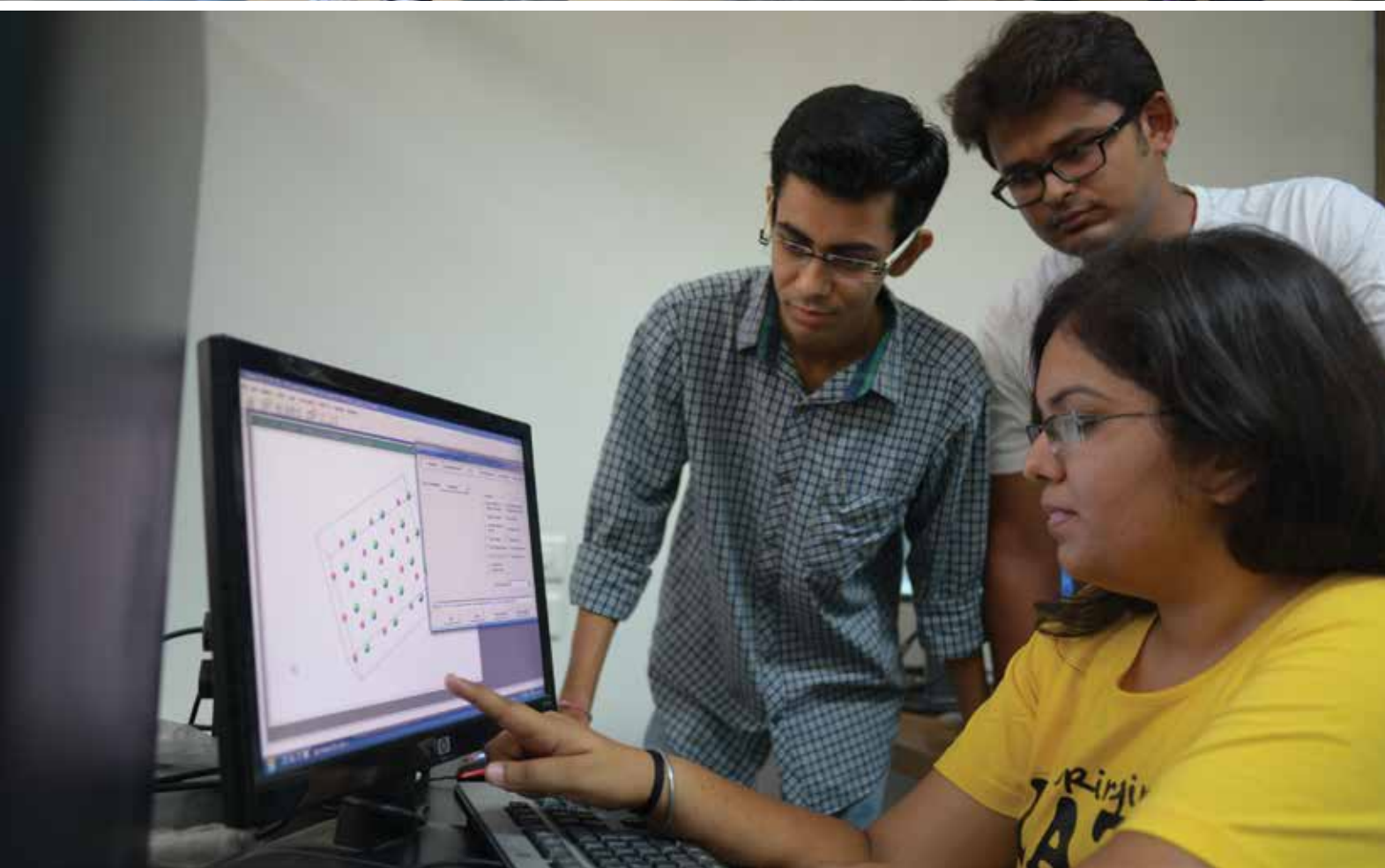
Semester III

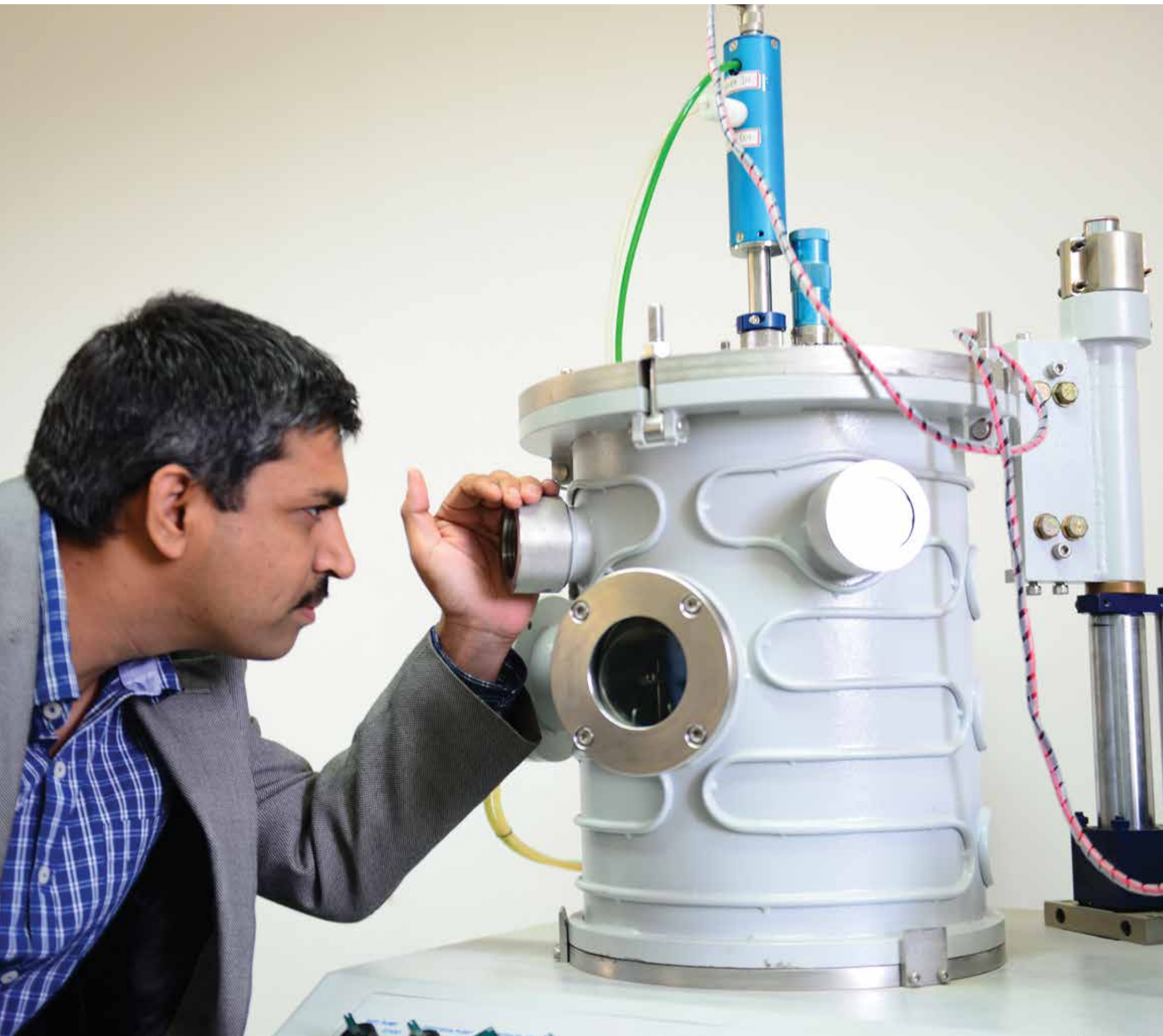
- Project Dissertation-I
- Project Seminar-I
- Evaluation of Industrial Training

Semester IV

- Project Dissertation-II
- Project Work

Project Seminar –II (Presentation of the complete project work)





FACULTY PROFILE

Dr. Indrajit Mukhopadhyay
Head, SRDC

Qualification: M.Sc., Ph.D.

Research Interest:

Nano-Structured Materials for Energy Devices, Thin film solar Cell by Electrochemical Method, High energy density Li ion battery.

Dr. Tajinder Pal Singh
Professor

Qualification: M.Sc., M.Phil., Ph.D.

Research Interest:

Linear Algebra and Numerical Reservoir Simulation.

Dr. Anurag Mudgal
Associate Professor

Qualification: B.Tech, M. Tech & Ph.D

Research Interest:

Use of low grade renewable energy in the area of desalination, heating and cooling applications.

Dr. Abhijit Ray

Assistant Professor & Academic Coordinator

Qualification: M.Sc., PhD

Research Interest:

Solar photovoltaic materials & device physics, Thermoelectric materials & applications.

Dr. Manoj Kumar

Assistant Professor

Qualification: M.Sc., PhD

Research Interest:

Solar Photovoltaics, Dye Sensitized Solar Cells (DSSC), Different fabrication routes, conduction mechanisms, Nanotechnology: Growth of TiO₂ nanotube & nano-rods for DSSC.

Dr. Balamurali Mayya
Assistant Professor

Qualification: M.Sc., Ph.D.

Research Interest:

Organic Photovoltaic Devices, Dye Sensitized Solar Cells, Statistical Theory of Quantum Dots, Random Matrix T.

Dr. Nanji Hadia
Assistant Professor

Qualification: B.E. (Mechanical Engg.), M. E. (Mechanical Engg.)
Ph.D

Research Interest:

Enhanced oil recovery methods, experimental reservoir engineering, solar thermal energy, experimental heat transfer and fluid dynamics.

Brijesh Tripathi
Lecturer

Qualification: M.Sc.

Research Interest:

Performance improvement of solar cell by applying third generation concepts; theoretical modeling and practical development of solar cells and systems.

Social Service Internship



As per the directive of the Ministry of Human Resource Development, Government of India, a Technical Programme should comprise of at least 20% courses on Humanities and Management. For better execution of policies during one's professional career, a technocrat is required to come to terms with the realities of life. In India, rural population comprises of nearly 70% of the country's total population. In a developing nation like India, cities are getting saturated rapidly in many ways and the onus on administrative machinery is to focus on rural areas for development. In this regard, it has become mandatory to know and understand rural life and its demography. It is in this reference, School of Technology, under the aegis of Pandit Deendayal Petroleum University, has introduced Civic and Social Service Internship (CSSI) as a course in B.Tech programme after completion of first year.

Objectives:

- To strengthen understanding on concepts of rural development with specific reference to the Indian context.
- To provide exposure to grassroots realities, in the rural setting with a focus on participation in interventions by NGOs.
- To strengthen insights and develop skills on participatory methodologies and tools used in rural development.
- To understand and appreciate broader contexts of other stakeholders, like government agencies, donors and local self governance institutions, while participating in existing field projects.
- To facilitate cross-cultural learning on development issues as well as other areas of inter-personal growth and learning.



Industrial Orientation



Industrial Orientation facilitates understanding about application of basic science and engineering acquired during first two years of curriculum and developing their understanding about the industry operation that will further facilities their academic and research learning for the subjects to be taught during 3rd and 4th year of B.Tech Programme.

It is in this reference, 2nd year B.Tech students are scheduled to visit various industries across the country with a view to get familiar with Industry Operations.

Objectives:

- To expose students to various operations of the industry and enhance their understanding about application of science and engineering principles studied in first two years of B.Tech programme.
- To develop student's understanding about the industry operations and facilitate their academic and research learning for the 3rd and 4th year B.Tech programme.
- To develop students understanding of the industry value chain.



International Exposure Program

To develop global professionals by providing international educational exchange to the university students and to create visibility of the university in the global educational scenario by collaborating with other reputed institutes and student exchange programs.

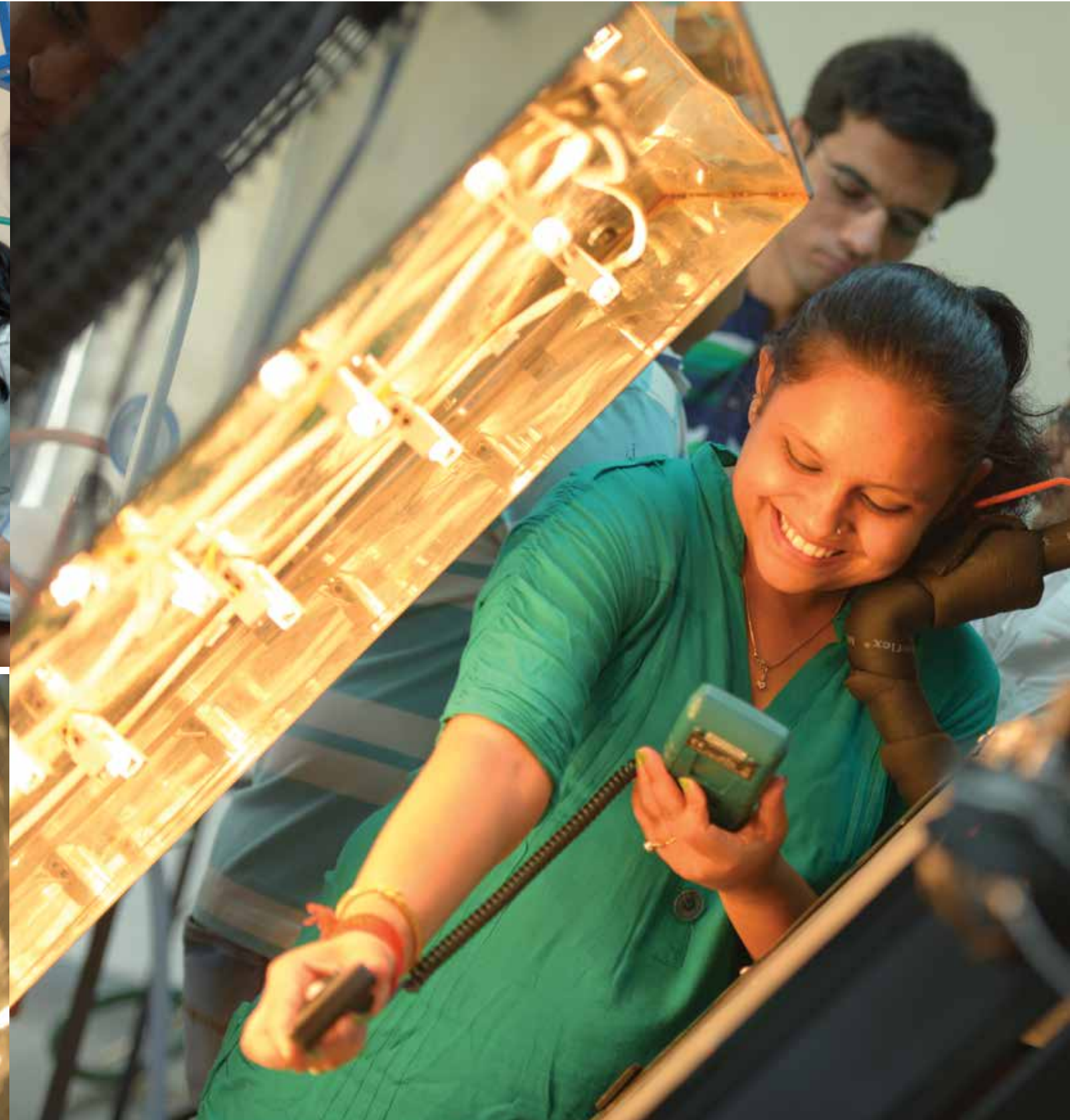
Objectives:

- To provide international exposure to the students.
- To develop Study abroad program.
- To develop joint research project with Universities abroad.
- To create international learning environment by inviting faculties from other international universities.
- To invite international students to take up long term and short term courses offered at the university.
- To share our infrastructure with other international universities.
- To create a forum for knowledge sharing with other universities.

Post Graduate Programmes

M.Tech

The M.Tech Programme offers a curriculum which is modern, flexible and futuristic with a strong emphasis on sound fundamentals, problem solving and practical exposure to real life situations.



PDPU offers 2 year M.Tech programme in the following specialized disciplines:

- **Petroleum Engineering**
- **Civil Engineering**
(Infrastructure Engineering & Management)
- **Electrical Engineering**
(Power Systems)
- **Mechanical Engineering**
(Thermal Engineering)
- **Nuclear Engineering**





M.Tech Petroleum Engineering

Semester I

- Advanced Numerical Methods and Computations
- Advanced Drilling Engineering
- Advanced Natural Gas Engineering
- Advanced Reservoir Engineering
- Advanced Hydrocarbon Exploration Techniques
- Advanced Numerical Methods and Computations Lab
- Petroleum Engineering Lab - I

Semester II

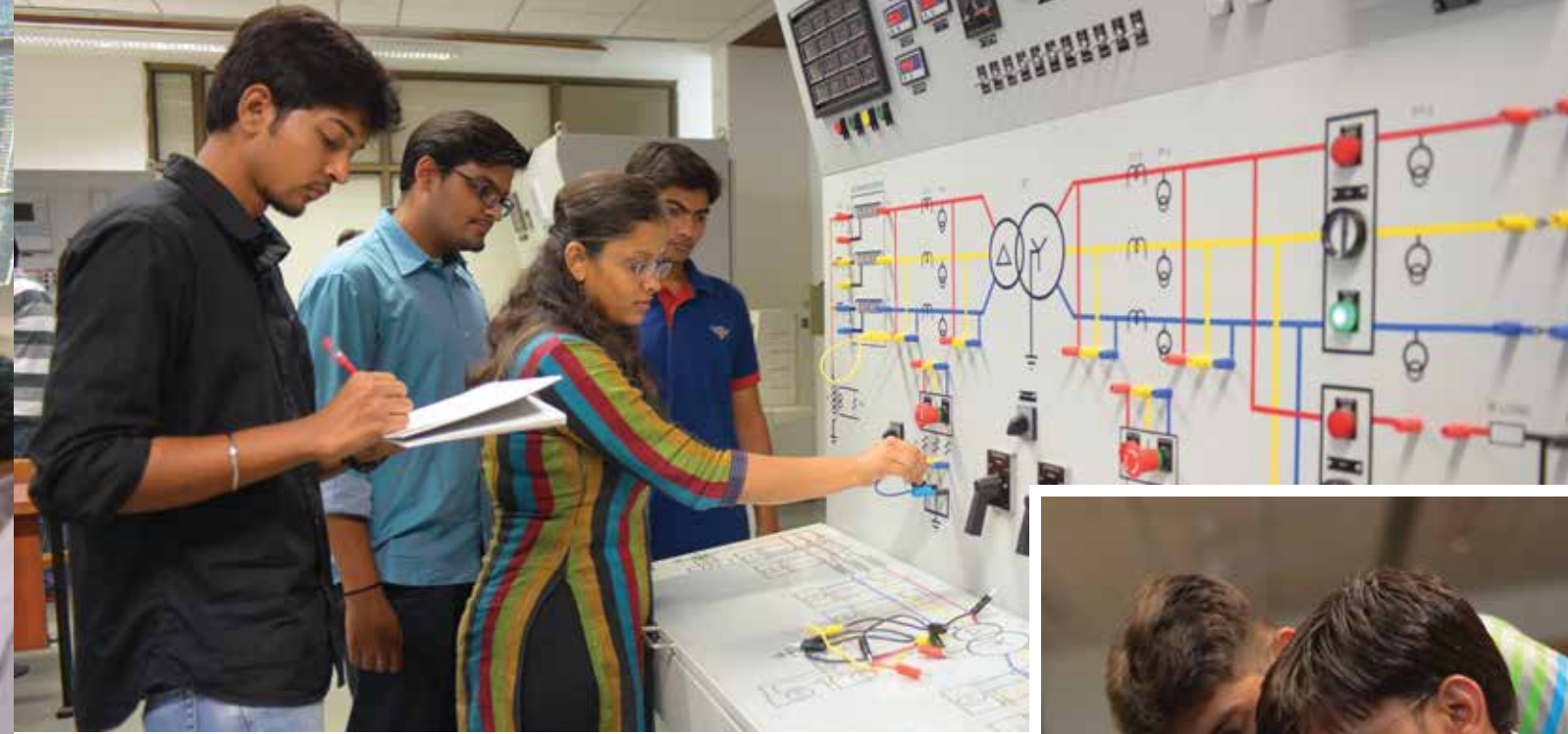
- Advanced Instrumentation and Control
- Petroleum Production Engineering
- Surface Production Engineering
- Advanced Formation Evaluation
- Enhanced Oil Recovery
- Petroleum Engineering Laboratory- II

Semester III

- Seminar
- Project
- Industrial Training

Semester IV

- Project
- Dissertation
- Seminar



M.Tech Mechanical Engineering

M.Tech Electrical Engineering

Semester I

- Advanced Numerical Techniques and Computer Programming
- Advanced Fluid Mechanics
- Advanced Engineering Thermodynamics
- Thermal Lab - I
- Heating Ventilation and Air conditioning
- Advanced Gas Dynamics
- Cryogenics
- Renewable Energy & Energy Management
- Finite Element Methods

Semester II

- Experimental Methods
- Advance Heat Transfer
- Computational fluid Dynamics
- Design and Optimization of Thermal Systems
- Advanced Convective Heat Transfer
- Course on Successful Research Development Program
- Solar Thermal Systems
- Turbomachinery
- Finite Element Methods

Semester III

- Seminar
- Project
- Pedagogy Practice - I
- Industrial Training

Semester IV

- Seminar
- Project
- Dissertation
- Pedagogy Practice - II

Semester I

- Advanced Numerical Techniques and Computer Programming
- Advanced Electrical Machines
- Advanced Power System Protection
- Modern Processors and Embedded Systems
- Department Elective :
→ Finite Element Methods
→ Renewable Energy Systems
- Laboratory - I
- Finite Element Methods

Semester II

- Modern Control Systems
- Power System Analysis and Dynamics
- Advanced Power Electronics
- Smart Grid Technologies and Applications
- Advanced Digital Signal Processing
- Laboratory - II

Semester III

- Seminar
- Industrial Training
- Project

Semester IV

- Seminar
- Project
- Dissertation



M.Tech Civil Engineering (Infrastructure Engineering & Management)

Semester I

- Infrastructure Planning and Engineering - I
- Project Management
- Project Design Studio - I
- Elective - I*
- Elective - II*
- Advanced Numerical Techniques & Computer Programming

Semester II

- Infrastructure Planning and Engineering - II
- Technology for Infrastructure Construction
- Infrastructure Financing and Management
- Project Design Studio - II
- Elective - III**
- Elective - IV**
- Successful Research Development Program

Semester III

- Seminar
- Major Project Phase - I
- Industrial Training

Semester IV

- Seminar & Publication
- Major Project Phase - II
- Dissertation

List of Elective - I

GIS Applications in Infrastructure Engineering / Water and Wastewater Treatment / Solid waste & Hazardous waste Management / Urban Water and Storm Water Engineering / Project Development Issues in Energy Sector / Traffic and Transport Planning / Transportation Systems Analysis.

List of Elective - II

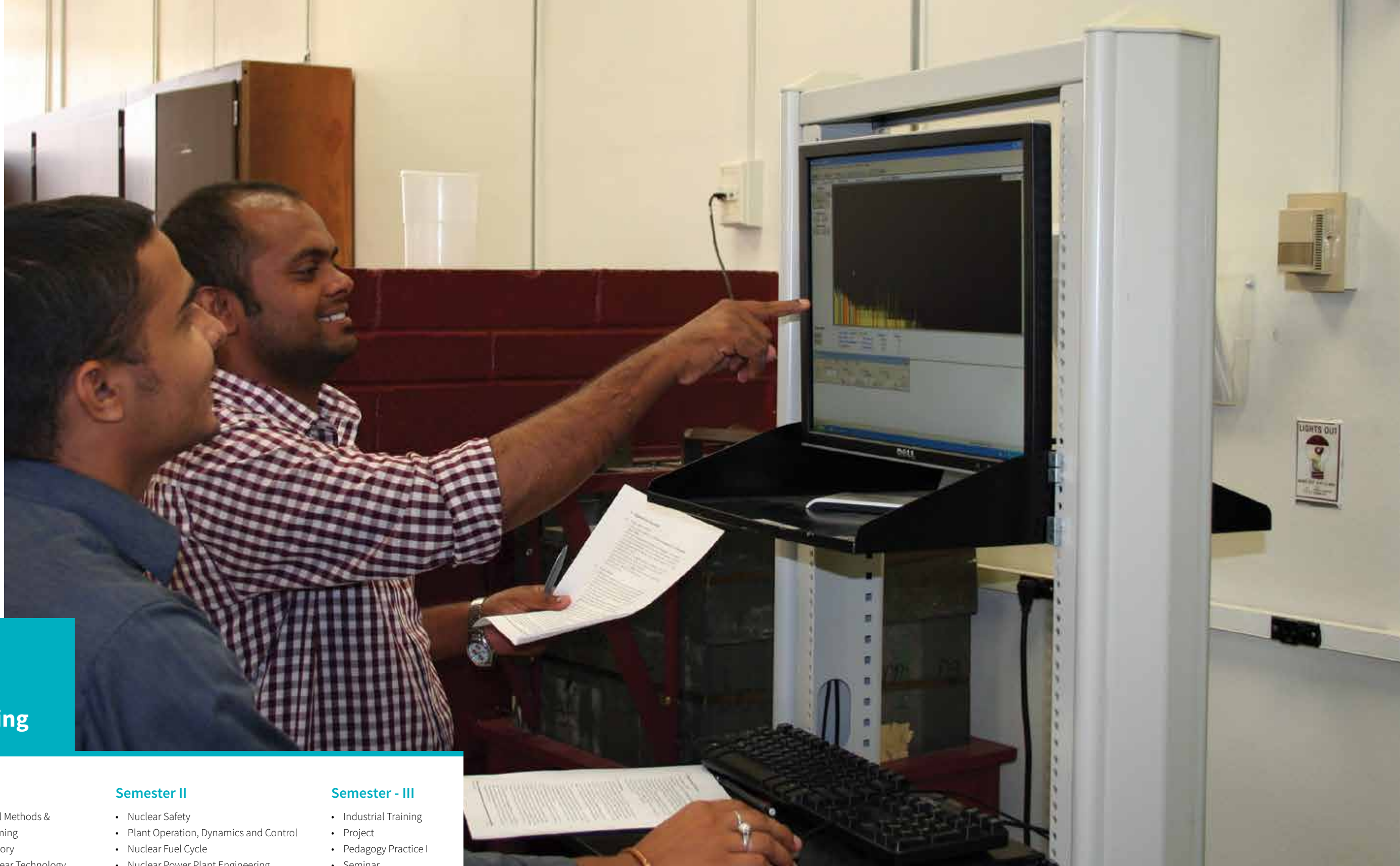
Ground Improvement Techniques / Geotechnical Design of Infrastructure / Design and Construction of Structures / Geo-environment Engineering / Construction Systems and Management / Civil Engineering Decision Methods and Tools / Safety in Infrastructure Constructions / Pavement Design and Engineering.

List of Elective - III

Value Engineering and Management / Earthquake Engineering for Infrastructure / Highway & Road Construction / Environment Impact Assessment of Infrastructure Projects / Design of Water & Wastewater Treatment Plant / Sustainability & Ecological Design / Public Transport and Railway Operations / Urban Infrastructure Management / Software Applications through Primavera.

List of Elective - IV

Planning and Financing / Finite Element Methods / Renewable Energy / Technology in Non-conventional Energy Sector / Real Estate Valuation and Management / Design of Energy Efficient Buildings / Law and Legislation for Infrastructure / Enterprise Resource Planning.



M.Tech Nuclear Engineering

Semester - I

- Advanced Numerical Methods & Computer Programming
- Nuclear Reactor Theory
- Introduction to Nuclear Technology
- Radio Isotope Applications
- Nuclear Thermal Hydraulics
- Renewable Energy & Energy Management
- Seminar
- Advanced Numerical Methods Lab

Semester II

- Nuclear Safety
- Plant Operation, Dynamics and Control
- Nuclear Fuel Cycle
- Nuclear Power Plant Engineering
- Radiation Measurement & Protection
- Computational Neutron Transport & Radiation Shielding*
- Multivariable Control Theory*
- Reliability in Nuclear Power Plants*
- Radiation Measurement Lab
- Course on Successful Research Program Development

Semester - III

- Industrial Training
- Project
- Pedagogy Practice I
- Seminar

Semester - IV

- Project
- Pedagogy Practice II
- Dissertation
- Seminar



Ph.D

The goals of the Doctoral Programme at PDPU comprise the following:

‘The development of the highest quality of scientific and technical manpower to cater to the needs of Industry and R & D organisations’.

These programmes with their courses and specialized research aims to prepare students for the corporate world by enhancing their perspectives and breadth of knowledge related to the principle divisions of their respective fields of specialization.

Candidates for the Ph.D degree are given intensive exposure to a specific field of engineering research as well as continued study of a broad range of engineering fundamentals. The main focus is individual research and students are expected to expand the frontiers of knowledge in their area of endeavor. For the Doctoral Programme, Ph.D students are required to register and successfully complete a minimum number of courses as per the rules of the School.

PDPU offers Ph.D programme in various engineering and science disciplines.





INFRASTRUCTURE

Wellness Centre

A nutritious diet and a good workout help students to combat academic stress. School of Petroleum Technology has set up a state-of-the-art wellness centre equipped with cardio & weight training equipment and helps students workout under the expert supervision of a certified trainer.

The wellness centre can look after the needs of more than 50 students per session and is functional throughout the day.

As a part of its wellness initiative, the university also provides an expansive playground for outdoor games, such as football, cricket and practice courts for basketball, volleyball and badminton.

Cafeteria & Food Court

School of Petroleum Technology has ensured that the students enjoy a healthy diet charted out by a dietician, which is wholesome and nutritious. The food court also provides refreshments throughout the day. The cafeteria is attractively laid out and offers students and eco-friendly environment to relax while deliberating on their academic and personal lives and collectively address the attendant challenges.



Hostel Facility

Our in-campus residential facilities offer furnished hostel rooms on a twin occupancy basis. This is an optional facility offered to B.Tech students. Separate hostels are provided for female students. There are seven fully functional hostel blocks which are Wi-Fi enabled and are well-designed to meet the needs of the students. These include emergency medical facilities, a doctor on call, 24x7 accesses to computer labs and a well equipped and comfortable lounge to facilitate group activities.

Library

Library and Information Centre is the heart of the school and aims to provide an ideal ambience for both creation & dissemination of knowledge, information, insights & intellect in all its academic programs. The centre has utilized Information Technology extensively to ensure that resources are accessible from anywhere at any time. The Library holds a collection of printed as well as electronic resources which include books, journals, databases, CDs/DVDs, e-journals, reports, case studies, conference proceedings, training manuals, etc

Other Facilities

- PDPU Campus Store - Pride Forever
- Medical Facility + 24 hours Ambulance
- Bank + 24 hours ATM
- Stationery and General Store
- Medical Store
- Travel Booking Office



PLACEMENTS AT PDPU - AT A GLANCE

The placement initiatives of PDPU for all of its batches attracted a good number of companies from Energy & Infrastructure, Oil & Gas and other sectors. Most of our students managed to bag substantial job profiles at prestigious organizations along the entire energy value chain. PDPU has received accolades and good industry vibes, both in terms of alumni performance and the curriculum structure. Since its inception, following companies have participated in Placements Season:

THE TRAINING & PLACEMENT CELL

The Training and Placement Cell (T&P Cell) handles all the internship and placements for graduates and post-graduate students at Pandit Deendayal Petroleum University (PDPU).

The T&P Cell office is well equipped to support all placement procedures including Pre-Placement Talk, interviews and group discussions.

Facilities available at T&P Cell:

- Auditorium and Lecture theaters for PPT
- Well equipped discussion rooms for interviews and group discussions
- IT support for placement activities

The placement policies and other related activities are handled by Professor-in-Charge, Training & Placement along with Students' - Placement Committee. The process of coordination with recruiters is handled by the T&P Cell. The companies are encouraged to communicate with Manager - Training & Placement for initial discussions and subsequent communication for placement procedures.



JOB APPLICATION FORM

(TO BE FILLED BY COMPANIES)

NAME OF THE COMPANY : _____

ADDRESS : _____

CITY : _____ STATE : _____ PIN : _____

TEL. NO. (WITH STD CODE) : _____

FAX : _____ E-MAIL : _____

COMPANY WEBSITE : _____

REQUIREMENTS / CRITERIA :

S. NO	COURSE	TOTAL NO. OF STUDENTS THE COMPANY WISHES TO RECRUIT	PREFERRED INTEREST AREAS	ANY OTHER INFORMATION
1	B.TECH CIVIL ENGINEERING			
2	B.TECH ELECTRICAL ENGINEERING			
3	B.TECH MECHANICAL ENGINEERING			
4	B.TECH INDUSTRIAL ENGINEERING			
5	B.TECH CHEMICAL ENGINEERING			
6	B.TECH PETROLEUM ENGINEERING			

CAMPUS RECRUITMENT PROCESS :

- PRE-PLACEMENT TALK (PPT)
 WRITTEN TEST
 GROUP DISCUSSION
 PERSONAL INTERVIEW
 ANY OTHERS

CONTACT PERSON :

NAME : _____

DESIGNATION : _____

TEL. NO. (WITH STD CODE) (O): _____ MOBILE NO. _____

FAX : _____ E-MAIL : _____

SIGNATURE OF COMPANY OFFICIAL





PDP

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