Pandit Deendayal Petroleum University

Programs at Faculty of Engineering and Technology (FoET)

Program Outcomes as defined by NBA (PO) for all B. Tech.

Program Outcomes (PO's):

Engineering Graduates will be able to**:**

1. Engineering knowledge: Ability to acquire and apply fundamental principles of science and engineering to address the issues and challenges of Civil Engineering and Technology
2. Problem analysis: Ability to analyze and solve practical problems related to Civil Engineering and Technology
3. Design/development of solutions: Ability to design, develop and evaluate Civil Engineering works to meet the desired need
4. Conduct investigations of complex problems: Ability to conduct, analyze and interpret experiments and apply experimental results to improve the process in Civil Engineering
5. Modern tool usage: Ability to use current technology, skills and modern techniques in construction practices of Civil Engineering structure
6. The engineer and society: Ability to assess the impact of global, social and cultural changes on Infrastructure projects
7. Environment and sustainability: Ability to understand the importance of sustainability and environmental impact in design and development of Infrastructure projects
8. Ethics: Ability to exhibit professional, legal and ethical behavior
9. Individual and team work: Ability to work effectively as an individual and as a member/ leader in a team
10. Communication: Ability to communicate and present effectively
11. Project management and finance: Ability to employ effective project management skills to develop a project plan, monitor and track development efforts
12. Life-long learning: Ability to enhance self-improvement through continuous professional development and life- long learning

B. Tech. (Mechanical Engineering)

The Program Educational Objectives (PEOs):

Graduates will be able to:

1. PEO-1: To develop highly competent graduates with strong foundation in science and engineering for successful careers in core mechanical and interdisciplinary industries, higher education and research.
2. PEO-2: To develop graduates who can become entrepreneur/innovators to design and develop system/process/product/service to address social and industrial challenges.
3. PEO-3: To develop graduates with leadership qualities, strong communication skills, professional and ethical values.
4. PEO-4: To develop lifelong learners graduates to excel in their professional career as well as to pursue higher education.

Program Specific Outcomes (PSOs):

1. PSO-1: To analyse the problem and create solution by applying engineering knowledge with a multidisciplinary approach.
2. PSO-2:To analyse, interpret and provide solutions to the real life mechanical engineering and its allied problems using engineering software/tools.
3. PSO-3:To work effectively as an individual and in a team to address complex issues by engaging in lifelong learning and following ethical and environmental practices.

B. Tech. (Electrical Engineering)

Program Educational Objectives (PEOs):

Graduates will be able to:

1. PEO-1: To prepare highly competent graduates with strong foundation in engineering and technology for successful career in industries, academics and research organizations.
2. PEO-2: To prepare the graduates with ability to identify, analyze, design and solve complex electrical engineering problems, based on application of basic sciences, mathematics and fundamentals of electrical engineering.
3. PEO-3: To prepare fundamentally strong graduates having broad knowledge in electrical engineering that can become innovators or entrepreneur to solve industrial and societal challenges.
4. PEO-4:To prepare graduates with holistic education approach that they should contribute ethically in multicultural and multidisciplinary groups to develop sustainable solutions for global, environmental and social issues.

Program Specific Outcomes (PSOs)

1. PSO-1: To identify, formulate, design and investigate various problems related to electrical circuits, power electronics, electrical machines and power systems by applying fundamental knowledge of engineering and science.

2. PSO-2: To demonstrate proficiency in usage of modern hardware & software tools to model, design, simulate and analyze electrical systems for solving real world multi-disciplinary problems.
3. PSO-3: To contribute in development of smart systems, modern grid and clean energy system for societal and environmental benefits.

B. Tech. (Civil Engineering)

Program Educational Objectives (PEOs):

Graduates will be able to:

1. PEO-1: To provide solutions to civil engineering problems and cater for evolving needs of the society through engineering practice and/or research of their choice and pursuance
2. PEO-2: To serve mankind in their endeavour by designing and analyzing of civil engineering structures engrossing its, aesthetics, safety, functionality and sustainability
3. PEO-3: To work ethically and professionally in the chosen professional carrier
4. PEO-4: To be affiliated with professional bodies and continuing education schemes for their lifelong learning and growing towards leadership roles and also strive for addition of new knowledge.

Programme Specific Outcomes (PSOs):

1. PSO-1: Graduates shall demonstrate sound knowledge in analysis, design, laboratory investigations and construction aspects of civil engineering infrastructure, along with good foundation in mathematics, basic sciences and technical communication
2. PSO-2: Graduates will have a broad understanding of economical, environmental, societal, health and safety factors involved in infrastructural development, and shall demonstrate ability to function within multidisciplinary teams with competence in modern tool usage.
3. PSO-3:: Graduates will be motivated for continuous self-learning in engineering practice and/or pursue research in advanced areas of civil engineering in order to offer engineering services to the society, ethically and responsibly

B. Tech. (Chemical Engineering)

Program Education Objectives (PEOs):

Graduates will be able to:

1. PEO-1: To acquire the fundamental principles of science and chemical engineering with modern experimental and computational skills.
2. PEO-2: Able to handle problems of practical relevance of society while complying with economical, environmental, ethical, and safety factors.
3. PEO-3: Demonstrate professional excellence, ethics, soft skills and leadership qualities with lifelong learning.
4. PEO-4: Graduates will be active members ready to serve the society locally and internationally.

Program Specific Outcomes (PSOs)

1. PSO-1: To analyse and tackle the complex and diverse engineering problems by appropriate experimentation, simulation, data analysis and interpretation, and, provide probable solutions by applying principles of chemical engineering in combination to the fundamental knowledge of basic sciences and mathematics.
2. PSO-2: Competence to incorporate socio-economic considerations in engineering practices, including the concept of sustainable development, into chemical engineering practice.
3. PSO-3: An ability to work together collaboratively in multidisciplinary teams to tackle multifaceted problems and pursue a bright career in chemical engineering and allied areas by demonstrating professional success at different platforms within industry, governmental bodies or academia.

B. Tech. (Petroleum Engineering)

Program Educational Objectives (PEOs):

Graduates will be able to:

1. PEO-1: Demonstrate the fundamental knowledge and professional practices in the domain of oil, gas and energy sectors.
2. PEO-2: Pursue advanced education, research and development, entrepreneurship, and demonstrate creativity and innovation in their professional careers.
3. PEO-3: Adopt ethical practices and exhibit effective leadership skills for sustainable development in energy and environment for societal impact.

Program Specific Outcomes (PSOs):

1. PSO-1: Be proficient in applying Science, Technology, Engineering and Management (STEM) skills for providing creative and innovative solutions for oil and gas industry.
2. PSO-2: Be able to acquire, process and interpret data for oil and gas exploration and exploitation.
3. PSO 3: Be able to integrate and complement other conventional and unconventional energy demands for sustainable societal transformation.

Programs at Faculty of Liberal Studies (FoLS)

B. A. (Hons.)

Program Outcomes**:**

PO 1	Domain Knowledge	Demonstrate comprehensive knowledge of multiple disciplines.
PO 2	Problem Analysis	Communicate complex information in clear and concise manner to various stakeholders.
PO 3	Design/ Development of solutions	Apply analytical thoughts to a body of knowledge and critically evaluate practices, policies and theories.
PO 4	Conduct Investigations of Complex Problems	Develop competencies to solve different and non-familiar problems in a collaborative manner.
PO 5	Modern Tool Usage	Analyze and synthesize existing data, identify flaws and gaps and form informed opinions. Use ICT Tools in a variety of learning situations, use software for data analysis and use cyber-human interface effectively.
PO 6	The Citizen and the Society	Understand the value of empirical evidence and act ethically in their role and responsibility as a citizen of the society.
PO 7	Environment and Sustainability	Assess environmental damage and develop environment friendly and sustainable business practices.
PO 8	Ethics	Form ethical moral value system and cater to the community needs in a voluntary manner.
PO 9	Individual and Teamwork	Work effectively and respectfully with and in diverse teams.
PO 10	Communication	Demonstrate leadership traits by building team, inspiring vision and take members of team to a shared goal.
PO 11	Project Management and Finance	Appreciate local ethos and global best practices in all endeavors.
PO 12	Life-long Learning	Raise awareness of the importance of constant upskilling in Industry 4.0 and Education 4.0 and demonstrate effective usage of existing e-resources.

B. Com. (Hons.)

Program Outcomes**:**

PO 1	Domain Knowledge	Acquire knowledge of commerce with integration of Multidisciplinary areas
PO 2	Problem Analysis	Communicate complex information in clear and concise manner to various stakeholders.
PO 3	Design/ Development of solutions	Understand tax issues, tax reforms, and digital accountancy comprehensively
PO 4	Conduct Investigations of Complex Problems	Develop competencies to solve different and non-familiar problems in a collaborative manner.
PO 5	Modern Tool Usage	Analyze core competencies of various roles like entrepreneur, business person and consultant
PO 6	The Citizen and the Society	Show capacity to successfully engage in competitive exams like M. Sc. Finance, CA, ICWA, CMA etc.
PO 7	Environment and Sustainability	Acquire practical skills for roles like tax consultant, auditor and financial services
PO 8	Ethics	Demonstrate comprehensive knowledge of banking and insurance sectors.
PO 9	Individual and Teamwork	Work effectively and respectfully with and in diverse teams.
PO 10	Communication	Acquire and apply quantitative and qualitative evolving careers in I 4.0 world
PO 11	Project Management and Finance	Develop comprehensive knowledge in practices of Financial Markets, International Finance and global stock-exchanges
PO 12	Life-long Learning	Learning to learn with genuine inquisitiveness in the field of commerce for life. Raise awareness of the importance of constant up skilling in Industry 4.0 and Education 4.0 and demonstrate effective usage of existing e-resources

B. Sc. (Hons.)

Program Outcomes**:**

PO 1	Science knowledge	**A**pply the knowledge of Physics, Chemistry and Mathematics in solving/analyzing problems in industries, research and development institutions, public sector units, higher education and in academia.
PO 2	Problem Analysis	**A**nalyze and interpret theoretical and practical data at various work-places.
PO 3	Design/ Development of solutions	Design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, health and safety, manufacturability, and sustainability.
PO 4	Investigations of complex problem	Develop the ability to apply the knowledge of applied research to investigate complex problems and provide viable solutions.
PO 5	Modern tool usage	Identify, formulate, and solve scientific problems using modern tools and techniques.
PO 6	Science and Society	Acquire the broad education necessary to understand the impact of scientific solutions in a local, global, economic, environmental, and societal context
PO 7	Environment and Sustainability	Assess environmental damage and develop environment friendly and sustainable scientific practices
PO 8	Ethics	Develop an ethical moral value system and cater to the community needs in a voluntary manner by the judicious use of scientific principles.
PO 9	Multidisciplinary Approach	Develop a multidisciplinary approach and function on multidisciplinary teams.
PO 10	Communication	Develop various communication skills such as listening, speaking, writing, etc. which will help in effective expression of ideas and views.
PO 11	Project Management and Finance	Apply scientific knowledge and management skills to manage projects in industries, research and development institutions, public sector units, higher education and in academia.
PO 12	Life-long Learning	Demonstrate effective usage of existing resources at workplaces and raise awareness of the importance of life-long learning

M. A. (Economics)

Program Outcomes**:**

PO 1	Domain knowledge	Develop and strengthen theoretical, conceptual and applied knowledge of Economics to understand the real-world phenomenon from a global, national and regional perspective
PO 2	Problem Analysis	Enable use of critical, logical and reflective thinking to construct reasonable arguments and analyze complex phenomena with strategic decision-making process
PO 3	Design/ Development of solutions	Construct and design effective solutions by applying existing economic theory and tools to identify the research and policy gaps
PO 4	Conduct Investigations of complex problem	Apply tools of optimization and quantitative aptitude to examine, evaluate and analyze economic issues affecting the developed, emerging and developing economies
PO 5	Modern tool usage	Develop the ability to apply quantitative and qualitative tools of advanced statistics & econometrics to analyze disciplinary and cross-disciplinary real-world issues
PO 6	The Citizen and the Society	Enable students to become informed and responsible citizens by inculcating the practice of rational, ethical thinking and optimal decision making to minimize resource wastage.
PO 7	Environment and Sustainability	Enhance practical insights towards energy efficiency and sustainable development models by demonstrating solutions from energy economics & environment and resource economics.
PO 8	Ethics	Apply the existing ethical guidelines in everyday economics, research thinking and community development
PO 9	Individual and Teamwork	Manage and build high performance teams by understanding the role of incentives, scientific virtues, decent work and pillars of organization efficiency
PO 10	Communication	Practice effective oral and written communication to be able to convey advanced economic theories and models in a pragmatic manner to the stakeholders of the society
PO 11	Project Management and Finance	Predict and analyze the role of economic factors and policies on overall economic and financial performance of an economy using managerial economics tools

M. A. (English)

Program Outcomes**:**

PO 1	Domain knowledge	Demonstrate comprehensive knowledge of literary criticism and theories and their applications in literature
PO 2	Problem Analysis	Comprehend and communicate literary canonical and non-canonical texts in clear and concise manner to various stakeholders
PO 3	Design/ Development of solutions	Apply critical theories and various literary movements to the body of literature and critically evaluate the outcome
PO 4	Conduct Investigations of complex problem	Critically reading literary texts from across the globe and understanding their relevance to various branches of knowledge
PO 5	Modern tool usage	Analyze and synthesize existing data, identify flaws and gaps and form informed opinions using digital tools
PO 6	The Citizen and the Society	Ask relevant questions, develop hypothesis and execute research
PO 7	Environment and Sustainability	Demonstrate a command of academic English in addition to formulating cogent arguments in Research Writing keeping in mind the importance of ecosystem, nature as well as human nature
PO 8	Ethics	Comprehend the ethical questions and challenges presented in literature and move beyond discipline specific silo and work on trans disciplinary evaluation of literature in this regard
PO 9	Individual and Teamwork	Interrogate, formulate and defend original and critically significant arguments and communicate them effectively in relevant forums through presentations, publications and dissertations
PO 10	Communication	Acquire effective and empathetic communication skills to engage in discussions with peers and society on an academic and cultural and emotional context
PO 11	Project Management and Finance	Develop basic skills required to practice English as a second language and utilize it in research projects and varied workplaces
PO 12	Life-long Learning	Acquire the ability to apply the learning and skills in personal and professional growth while contributing to the society by being sensitive aware citizens

M. A. (Psychology)

Program Outcomes**:**

PO 1	Domain knowledge	Demonstrate critical thinking and analysis of major concepts, empirical findings, historical trends, and literature in the field of Psychology.
PO 2	Problem Analysis	Ability to use skeptical enquiry and critical thinking in their scientific approaches to problem analysis.
PO 3	Design/ Development of solutions	Apply research methodologies, data analysis and interpretations to address real-life issues and reduce research gaps.
PO 4	Conduct Investigations of complex problem	Develop competencies for working in a collaborative manner and address problems with valid and scientific solutions.
PO 5	Modern tool usage	Practice and usage of modern psychometric tools of assessment to enrich the theoretical experience.
PO 6	The Citizen and the Society	Understand the value of empirical evidence and act ethically in their role and responsibility as citizens of society.
PO 7	Environment and Sustainability	Acquire and connect the theoretical knowledge for behavioural transformation at individual, group and societal context.
PO 8	Ethics	Follow the ethical and professional guidelines governing the science and practice of psychology in the community.
PO 9	Individual and Teamwork	Ability to communicate and collaborate with diverse teams effectively and respectfully.
PO 10	Communication	Acquire effective and empathetic communication skills to engage in discussions with peers and clients on an academic and clinical context.
PO 11	Project Management and Finance	Ability to use project management and financial skills in the implementation of empirical research and practical projects.
PO 12	Life-long Learning	Ability and motivation to indulge in life-long learning in academic and professional learning by raising awareness on the importance of constant upskilling in the wake of Industry 4.0 and Education 4.0 and demonstrate effective usage of existing e-resources and implement the learning on a societal level.

Registrar