Information Brochure
PEC University of Technology, Chandigarh
Centre of Excellence
in
Industrial & Product Design

Post-Graduate Program:
Master of Technology
(Industrial Design)
Open to BE/B.Tech graduates of all branches
Year 2017-2018

PEC University of Technology
Sector-12, Chandigarh-160012
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About Centre of Excellence in Industrial and Product Design

This Centre has been set up in 2013 by NPIU, under Technical Education Quality Improvement Programme (TEQIP Phase –II), a World Bank Assisted Project in Technical Education with initial funding of Rs 5 Crores.

The Centre has the mission to encourage, facilitate interdisciplinary and **collaborative research** in an environment that enables a 'love for science, technology and discovery' so that it can develop high quality research leading to products & solutions to address the needs of industry and healthcare providers. The Centre's aspiration to create **relevant research** that addresses current challenges, resulting in innovative solutions which can be implemented, is underpinned by partnering with leading organisations for its research activities such as PGIMER Chandigarh, INTEL Technologies Bangalore. Real time studies are being carried out to collect data, conduct surveys, which contribute towards understanding of the problems and issues affecting stakeholders.

The Centre is developing as a **resource centre** so as to become a preferred destination for industry, healthcare providers to carry out sponsored research, train & develop professional talent, proficient in the areas of ergonomics and design. The Centre runs educational and training programmes, performs outreach activities in collaboration with other academic institutions organisations such as PGIMER Chandigarh, IIT Mumbai, NITIE Mumbai.

Thematic Areas of the Centre of Excellence include the following:

- Ergonomics
- Design Applications in Medical Sciences and other Industries

About the Program

The Masters program in Industrial Design as a self-supporting interdisciplinary programme was started in July, 2011. This Master's programme provides in depth knowledge of human engineering, design processes and latest design tools like 3D scanning, rapid product development, high performance visualization etc. Availability of well-trained graduates in industrial design would result in upgradation of quality of engineering design, design materials and also result in environmentally sound and socially & culturally relevant designs. The duration of this programme for regular students is two years.

About Centre's Collaborative Research

Centre of Excellence in Industrial & Product Design is collaborating with Industry, Academic and Research Organizations for research in its thematic areas. Following are the leading organizations with which CoE is collaborating for its research activities:

- PGIMER, Chandigarh
- NITIE, Mumbai
- ABB Global Industries & Services Ltd. Bangalore
- Minda Corporation Ltd, Noida
- Intel Technologies India Pvt. Ltd., Bangalore
- Fashion Apparels LLC., Oman (a part of Must Garment Corp., Hong Kong)
- Central Tool Room, Ludhiana
- CONCAVE Research Centre, Concordia University, Canada
- Philips India Ltd
- Indian Institute of Technology, Guwahati
- Central Scientific Instruments Organization, Chandigarh
- Dr. Harvansh Singh Judge Institute of Dental Sciences and Hospital, Punjab University
- Swaraj Division (a unit of FES M&M), Mohali

About Centre's Infrastructure

The Centre has state of art facilities to help students assimilate the knowledge imparted to them in theory classes and to carry out **relevant research** that addresses current challenges, resulting in innovative solutions which can be implemented.

The Human Engineering laboratory is well-equipped to carry out experimentation and research work in the areas of whole body and hand arm vibration exposure, anthropometry, seat design, ergonomic evaluation of industrial systems and consumer products. The main equipment in the laboratory includes Portable EMG system, Biopac MP-45 system for EDA, PPG measurement, Portable physiological monitoring system, Kinect V2 IR Cameras, Whole body and Hand arm vibrations analysis kit, Electronic dynamometer, Electronic pinchmeter, Pressure mapping system (seat and back), Delmia Human software, Anthropometric kit, Oxygen analyser, EEG-EMG system, Jack Software and Portable Gait System

The prototyping laboratory has equipments for additive manufacturing based on extrusion and polyjet technologies. It also has facilities for conversion of CT scan images to 3D models, measurement of physiological parameter monitoring and design and fabrication of PCBs. The facilities in this laboratory are being used for development of products for medical applications, assembly tools and workplace organisational aids. Equipment in the laboratory includes 3D scanning system and software, MIMICS Innovation suite (Mimics, 3-matic and Magics RP software), Fused Deposition Modeling (FDM) : Fortus 400 MC (Small), Polyjet Prototyping Machine : EDEN 260V, NI Simulator, NI DAQ cards and Data logger cards, Lab VIEW, Controllers, sensors and actuators, Altium software and PCB prototyping machine

The Embedded system laboratory has equipments for development of embedded systems based on Intel atom boards. The facilities in this laboratory are being used for development of products for medical applications and workplace organisational aids. Equipment in the laboratory includes Intel Atom Boards and Sensors.

Detailed admission schedule is available at www.pec.ac.in

Master of Technology (Industrial Design) Structure

Semester-I	**Semester-II**
1. Creative Engineering Design 2. Product Form and Aesthetics 3. Advanced Mathematics 4. Elective I 5. Elective- II 6. Program Lab - I (Industrial Design Lab)	1. Product Design and Development 2. Applied Ergonomics 3. Design of Experiments and Research Methodology 4. Elective III 5. Open Elective 6. Program Lab – II (Human Engineering Lab)
Semester-III	**Semester-IV:**
1.Case Histories and Industry Experiences 2.Seminar and Technical writing 3.Project/Industry-based Project – I	1.Project/Industry-based Project – II

List of Electives

1. Material Manufacturing and Design
2. Finite Element Analysis
3. Designs and Manufacture of Mechanical Assemblies
4. Mechatronics System Design
5. Design Management
6. Mechanism Design
7. Modeling and Simulation
8. Interaction Design
9. Usability Engineering
10. Plastics Engineering
11. Non Conventional Machining Processes
12. Advanced CAD for Medical Applications
13. Physiological Signals Acquisition and Processing