Parul® University | NAAC A++ ACCREDITED UNIVERSITY

Centre for Continuing Education and Online Learning

DIPLOMA PROGRAM IN ROBOTICS & AUTOMATION

Program Code:
2275913

Course Duration:
1 Year

Course Fees:
Rs. 25,000/- & $450
For Indian and International Candidates
Parul University students can avail a scholarship of 30%.

PARUL UNIVERSITY

Parul University is an intellectual and a creative quest for all its stakeholders viz. Indian and International Students, Parents, Alumni, Faculties, Industry & Academic partners as well as society at large. We believe in proliferating our efforts towards quality education and environment. Every year we advance our targets to make headway to our scholarly endeavors.

Our University brings to everyone the best of all worlds. Be it its ethics, global exposure, contemporary educational practices, innovation and growth, PU outshines in all of these. We aim to make successful academic pursuits through entrepreneurship, research, modernization and partnerships with educationally inclined organizations, thus enhancing our position as the finest education destination.

We have been pioneers in accepting various interdisciplinary programs and have included them to our ideal and promising higher education curriculum. Starting with this decade it's our collective effort to empower more youth towards the pursuit to continuously learn, enhance skills, generate better employment opportunities and become competent entrepreneurs. For this very purpose, we are initiating a plurality of short term courses.

CENTRE FOR CONTINUING EDUCATION & ONLINE LEARNING

In this present day world, each year creates a generation gap which leads to change in the demand of job skills by the employers. Parul University has embarked on filling this gap by enlightening students and working professionals with the most updated skill based education and to transform them into adept industry professionals and talented entrepreneurs.

Parul University is introducing multiple programs under Centre for Continuing Education & Online Learning which are developed as per industry requirements and in compliance with the changing market needs.

DUAL DEGREE PROGRAM - LETS YOU EARN TWO CREDENTIALS IN DISTINCT DOMAINS

With the ever increasing knowledge and skills in today's competitive world, Parul University's Dual Degree opportunities allow you to pursue two degrees at the same time. Pursuing dual degrees will provide you with the most competitive advantage, and will give you diverse knowledge in multiple fields and disciplines. Undergraduate and Postgraduate students can undergo two degree programs in distinct fields. All programs offered by Parul University under Dual Degree are designed in line with NEP 2020 and guidelines suggested by University Grants Commission (UGC).

Surprising Benefits of Graduating with a Dual Degree

- Enhancing Employability and Entrepreneurship Skills
- Increase in Knowledge Base
- Diverse Career Options
- Enhancement of Multi-disciplinary Talent
- Saving of Time and Money

PREAMBLE

Robotics & Automation is a blend of engineering and science that includes mechanical, electrical and computer science engineering. The robotics sector is constantly expanding and can lead to potential career opportunities in agriculture, transportation, environment, defense, manufacturing, medicine, space and underwater exploration and service industries. This program is designed to meet the growing need of engineers in these various fields. This course helps the student to basic idea of Robotics & Automation. Participants will get exposure to the basic design consideration and programming of robots. Concepts like the basics of sensors, trajectory planning, obstacle avoidance, automation system design and kinematics of robots are integral topics of the program. Discussion on various mobile robots and robotic manipulators are also included as part of the course to get an overall idea on robotics.

Program Name: Diploma Program in Robotics & Automation

Program Type: Diploma

Program Duration: 1 year

For Whom: Individuals with 10+2 education or relevant education

PROGRAM HIGHLIGHTS

- Diploma Program in Robotics and Automation
- Hands-on Practice in Robotics Field.
- Hands-on practice in programming language for robot
- Project Work using Sensor/ Transducer/ Robot Design.

CAREER OPPORTUNITIES

A candidate by undergoing this program shall have the following career opportunities:

1. Robotics Engineer
2. Electromechanical and Robotics Technician
3. Industrial Automation Engineer
4. Manufacturing Automation Engineer
5. Transportation and logistics Manager
6. Automation Engineer in Defense, Military, Automobile, Aerospace Manufacturing, Process Industries, Space Research Organizations etc.

PROGRAM OBJECTIVES AND OUTCOMES

Program Objectives	Program Outcomes
Define basic principles of sensors and instrumentation, programming fundamentals and professional practice in Robotic system design.	Recall fundamental concepts of robotics to become a professional automation engineer.
Discuss the concept integration of basic robot configurations, sensors, actuators and fundamentals of programming.	Recognize the need for concept integration to resolve various practical issues involved in robotic system design.
Apply the knowledge and skills to design and develop the robotic manipulator according to the social need.	Demonstrate skill sets related to the use of robotic simulation software for generating innovative conceptual robotic designs.
Examine industry related automation problems to offer appropriate solutions looking at the need of users considering the various constraints.	Distinguish various automation problems specific to the industry to propose customized solutions.
Evaluate solutions of automation system designs in terms of uncertainty, disturbance rejection, feasibility, manufacturability, functionality, optimization, and robustness.	Justify communication protocols in robotic and automation systems for industrial or Social applications.
Design robotic automation system considering the various constraints for industrial applications.	Create a portfolio of robotic and automation system to showcase skills and abilities as robotic and automation engineer.

COURSE CURRICULUM:

Semester – I					
Sr. No.	Subject Name	Teaching Scheme (Contact hrs/week)			Credit Assigned
		Theory	Practical/Tutorial	Total	
1	Principles of Robotics	3	2	5	4
2	Problem Solving and Python Programming	3	2	5	4
3	Control Engineering	3	2	5	4
4	Sensors and Instrumentation	3	2	5	4
5	Project: I	0	8	8	4
				TOTAL	**20**

Semester – II					
Sr. No.	Subject Name	Teaching Scheme (Contact hrs/week)			Credit Assigned
		Theory	Practical/Tutorial	Total	
1	Internet of Things	2	4	6	4
2	Automation System Design	3	2	5	4
3	Communication Protocols for Robotics	3	2	5	4
4	Design and Modelling of Robotic Systems	0	8	8	4
5	Project: II	0	8	8	4
				TOTAL	**20**