

Introduction

The present proposal is for a **one week** training program for the faculty/research scholars/working professionals of DTU and nearby Engg. Institutes working in the field of Robotics and Artificial Intelligence. Last decade has witnessed a tremendous surge in the application of Robotics in Automation of Indian Industries partly as a means to reduce the cost of production and partly to improve the quality of their products so that they become competitive in the international market and to follow the norms of Industry 4.0. This has become necessary after opening up our economy to the global market. Robotics and Artificial Intelligence requires knowledge in drives and controls, which in turn requires insight in Industrial Robots, Aerial Robots and Perception based robotics. Full benefit of Robotics and AI can only be realized when fundamental principles governing these areas of study are properly understood. The course aims at giving a brief introduction of the Robotics, introduction to machine learning, artificial intelligence, robot hardware, their control and computer vision.

Course Contents

1. Introduction to Robotics

- Some basic concepts and its kinematics, dynamics and control
- Robot Vision

2. Introduction to Python

- Variables, Data Types, Numbers, Comments, Casting, Strings, Booleans, Operators, List, Tuple, Set, Dictionary, Decision making, Looping, Function, Array

3. Introduction to R Programming

- Comments, Variables, Data Types, Number, Math, Strings, Boolean, Operators, Decision Making, Looping, Functions, Data Structures, Graphics, Statistics

4. Introduction to Artificial Intelligence/ Machine Learning

- Applications Area, History, Mathematics (Linear Algebra, Vector, Matrix), Statistics, Probability, Algorithms (Theory and hands-on)

5. Tools for Machine Learning

- Numpy, Pandas, Scipy, Matplotlib

The deliberations of “Short Term Training Program” are expected to be useful for the industries as well as institutions. Surely there is a pressing need for the collaborative efforts by both industry and institutes to solve the engineering problems through real life case studies. The lectures/deliberations will highlight the importance of Robotics and Artificial Intelligence.

Resource Persons

Experts from reputed IIT Delhi, IIT Roorkee and leading IT company personnels will be invited to deliver the lecture/talk and conduct hands on training. Besides this, faculty members of the department will deliver the talk.

Participants

The programme is open to the faculty of AICTE/UGC approved engineering Institute/ University, Research scholars, and the persons from industries working in the area of robotics, mechatronics, automation and artificial intelligence.

Registration

Registration form in the prescribed format should reach the Co-ordinators on or before 14th May 2022, **or** the applicants may also fill the google forms at <https://forms.gle/rVRU2psf7z28xBAG7> up to 13th may, 2022. The selection letter will be sent through e-mail only on or before 15th May, 2022.

APPLICATION FORM

Short Term Training Programme on Robotics and Artificial Intelligence (RAI-2022) May 17 – May 21, 2022

1. Name:
2. Date of Birth:
3. Designation
4. Institution:
5. Whether the institution has AICTE/UGC approval
Yes/ No
6. Address for correspondance :

Phone:

E-mail:

Mobile:

7. Educational qualifications:

8. Experience (in years)

Teaching

Industry

Research

Declaration

The information provided is true to the best of my knowledge. If, selected, I agree to abide by the rules and regulations of the course and shall attend the course for the entire duration. I also undertake the responsibility to inform the Coordinator in case, I am unable to attend the course.

Place:

Date:

Signature

SPONSORSHIP CERTIFICATE (Outside DTU Only)

*Dr/Mr/Mrs/Ms-----
----- is an
employee of our institute/University and is
hereby sponsored to participate in the Short
Term Training Programme on Robotics and
Artificial Intelligence (RAI-2022) during
May 17 – May 21, 2022.*

Place:

Date: Signature of Head of Institution

Mail the Registration form to:

Prof. S. K. Garg (HOD)/ Prof. Vikas Rastogi
Course Coordinators
Department of Mechanical Engineering,
Delhi Technological University,
Shahbad Daultapur, Delhi-110042
Email Address: vikasrastogi@dtu.ac.in
Fax: +91-11-27871023
Cell: +91-9871620892

Organising Committee

Patron: Prof. J.P. Saini, Vice chancellor, DTU
Co-Patron: Prof. Madhusudan Registrar, DTU
Co-ordinators: Prof. S.K. Garg, HOD (Mech.)
Prof. Vikas Rastogi, DTU
Prof. Atul K. Agarwal, DTU

For further details visit institute Website.
www.dtu.ac.in. Brochure can be downloaded by
the link provided.

Accommodation and Travel

The outstation delegates will have to arrange their accommodation themselves and bear the expenses. No TA/DA of the participant will not be permitted. However, official lunch/tea will be provided during the course.

About DTU, Delhi

Delhi Technological University (DTU) was established in 1941 as Delhi Polytechnic, and was under the control of the Government of India. Later on, called Delhi College of Engineering (DCE), the college was under the government of the National Capital Territory of Delhi since 1963 and was affiliated to the University of Delhi during 1952-2009. In July 2009, DCE was upgraded to a state university and renamed Delhi Technological University. It offers courses towards Bachelor of Technology (B.Tech), Master of Technology (M.Tech.), Master of Science (M.Sc.), Doctor of Philosophy (Ph.D.) and Master of Business Administration (M.B.A), B. Des, M. Des. BBA, B.A. (Hons) and contains 15 academic departments with a strong emphasis on scientific and technological education and research.

About Mechanical Engineering Department

The department of Mechanical Engineering is the biggest department of the University. It offers three UG and five PG programs and more than 200 research scholars are currently registered in Ph.D. program. All the laboratories of the department are equipped with the latest state of art equipments.

A
**Short Term Training Programme
on
Robotics and Artificial Intelligence
(RAI-2022)
May 17 – May 21, 2022**

*Funded by
Delhi Technological University, Delhi*



Course Coordinators
Prof. S.K. Garg, HoD (Mech.) DTU
Prof. Vikas Rastogi, DTU
Prof. Atul K Agarwal, DTU

Organized by
**Department of Mechanical, Production and
Industrial & Automobile Engineering
Delhi Technological University**
(University Estd. by Govt. of N.C.T. of Delhi)
Shahbad Daultapur, Main Bawana Road, Delhi-110042