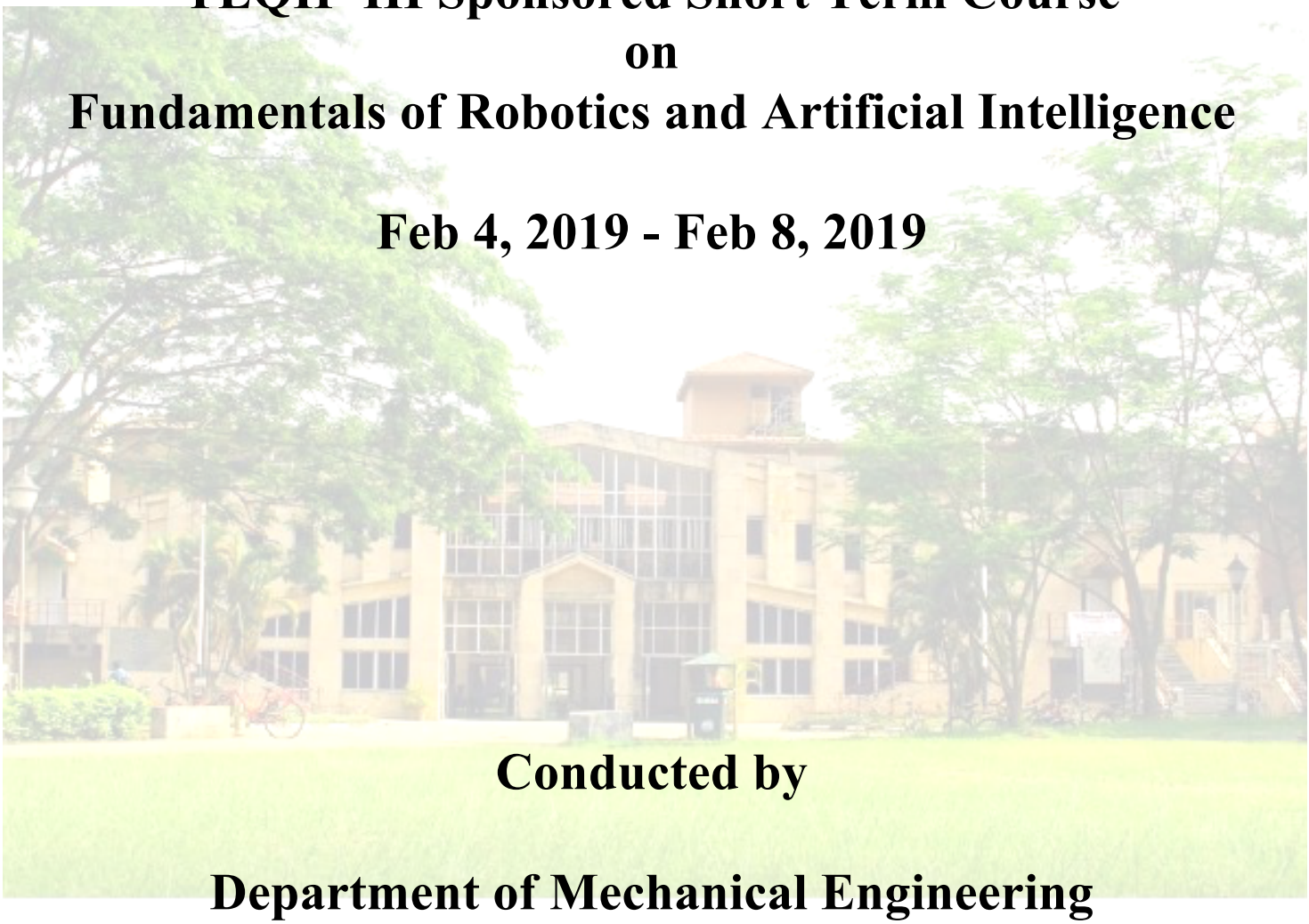
भारतीय प्रौद्योगिकी संस्थान गुवाहाटी
INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

TEQIP-III Sponsored Short Term Course
on
Fundamentals of Robotics and Artificial Intelligence

Feb 4, 2019 - Feb 8, 2019



Conducted by

Department of Mechanical Engineering
Indian Institute of Technology Guwahati

Organized by:
Knowledge Incubation for TEQIP
Centre for Educational Technology
Indian Institute of Technology Guwahati

ABOUT THE COURSE

Fundamentals of Robotics and Artificial Intelligence is proposed as a short introduction to the field of Robotics and Artificial Intelligence to take up teaching and research in the area. The course would not only cover the basics of robotics and Artificial Intelligence but also introduce advanced and trending topics in the area. Robotics is often viewed from three perspectives: a. perception (sensing) b. manipulation (affecting changes in the world) and c. cognition (intelligence). Robotic systems integrate aspects of all three areas; the third perspective brings in Artificial Intelligence in a big way! As a fundamental course in robotics the STC would provide an introduction to the theory of robotics including kinematics, control and sensing, vision and intelligence. The STC would cover fundamentals of AI including search, learning and reasoning.

The objective of the STC is to give the participants a broad overview of the field of Robotics and Artificial Intelligence through numerous lectures and laboratory sessions. The STC would introduce the fundamental concepts of Artificial Intelligence and Robotics to Engineering Teachers (across relevant disciplines such as Computer Sc. & Engineering, Electrical Engineering, Electronics Engineering, and Mechanical Engineering). The STC envisages developing the Learner's knowledge in various robot structures and their workspace; spatial transformations associated with rigid body motions; appreciate kinematics analysis of robot systems; and introduce robot dynamics and control. Concurrently, the STC would give the learner enough exposure to the techniques of Artificial Intelligence and AI Problem Solving. The aim is to make the learner not only understand Artificial Intelligence but also appreciate the role of AI in Robotics. Robotics and Artificial Intelligence in Robotics cannot be appreciated unless one observes practical intelligent systems which work! The STC would have enough hands-on sessions so as to make the learner not only aware of how such systems work but also confident to put such a system together.

ELIGIBILITY

- The course is open to Faculty members / Research Scholars from TEQIP mapped Institutions / Engineering Colleges / ATUs. No course fee is charged. TA & DA for the eligible participants will be reimbursed from their respective institutions.
  List of TEQIP institutes is available at NPIU http://www.npiu.nic.in/ under the menu **Institution List** and sub menu **TEQIP III**.
- Faculty members / Research Scholars from non-TEQIP Institutions / Industry may also apply. Positions would be allotted to them after allocation of applicants from TEQIP mapped Institutions.

REGISTRATION FEES

Category I	Faculty and Research Scholars from TEQIP Institutes	Rs 2500*
Category II	Other Participants from Academic Institutes (Non TEQIP)	Rs 2500**
Category III	Other Participants (Industry and R&D Organisations)	Rs 5000**

Registration Fee includes registration kit, light refreshments and a working lunch.

* Refundable Registration Fee; Participants will be provided accommodation.

** Accommodation may be available on paid basis. Write to Coordinator for availability.

BOARDING AND LODGING

Boarding and lodging facilities will be provided for the participants from TEQIP mapped institutions free of cost in the Institute Guest House inside IITG campus. Participants from non-TEQIP institutes should make their own arrangements for boarding and lodging. Kindly contact Coordinator for boarding and lodging on paid basis in the Institute Guest House.

HOW TO APPLY

Duly filled **Application Form** and **Endorsement Form** approved by the respective Head of the Institute along with the **Registration Fee Demand Draft** drawn in favour of *Registrar, IIT Guwahati* payable at *Guwahati* should be sent to the course coordinator by speed post.

The registration fee for participants from TEQIP mapped institutions would be refunded after participation in the course. Registration fee will not be refunded if the candidate fails to attend the course.

IMPORTANT DATES

Expression of Interest and scanned copy of application by e-mail: ASAP

Last date for the receipt of completed application by Speed Post: 15/01/2019

Intimation of selection: 20/01/2019

SELECTION CRITERIA

Selection will be based on first come first served basis.

Number of seats: 35.

Selected participants will be informed by e-mail.

ABOUT TEQIP

TEQIP conceived in pursuance of the NPE-1986 (revised in 1992) by Govt. of India as a long-term program to be implemented in different phases. After successful execution of TEQIP II, TEQIP III starts from 2017-18 as Central Sector Scheme with a focus on the Low-Income States, Northeast, Hill States and Islands. The third phase of TEQIP is also special in a way that it incorporates twinning arrangements between mentee & mentor institutions with an emphasis on Focused Training (PT) and Focused Interventions from IITs in terms of deliverables and accountability. KIT established at IIT Guwahati under 2nd phase of TEQIP is a focal point for training Faculty, Staff and students from TEQIP-III institutions in Knowledge Engineering, Content Creation, Improving Teaching, Pedagogy & administrative skills in identified niche areas/disciplines.

ABOUT KIT

KIT (**K**nowledge **I**ncubation Cell for **T**EQIP) at IIT Guwahati functions as a multi-disciplinary / interdisciplinary Innovation Incubation Centre. Its activities are in the area of improving Quality of Technical Education, incubation of Innovative Ideas; implementation of contemporary Pedagogy Practices and development of Learning Content in Technical Institutions.

ABOUT IIT GUWAHATI

IIT Guwahati campus is spread over a sprawling 785 hectares plot of green land on the north bank of the river Brahmaputra around 25 km from the heart of the city. With hills and vast open spaces, the campus provides an ideal setting for training. Details on how to reach IITG Campus are available on the institute website http://www.iitg.ac.in

ADDRESS FOR CORRESPONDENCE

Course Coordinator:

Prof. Shyamanta M Hazarika
Department of Mechanical Engineering
Indian Institute of Technology Guwahati
Guwahati- 781 039

http://www.iitg.ac.in/s.m.hazarika
Email: s.m.hazarika@iitg.ac.in
Phone: 0361 258 3437 (O); 9435084468 (M)

APPLICATION FORM

1. Name (in block letters): _____

2. Sex: ☐ Male ☐ Female

3. Category: ☐ General ☐ SC / ST / OBC

4. Highest Academic Qualification: _____

5. Specialization: _____

6. Designation _____
   Pay Scale _____

7. Name of the organization: _____

8. Details of Bank Draft: Amount _____
   No. _____

9. Experience (in number of years): _____
   Teaching: _____
   Industrial: _____

10. Address for communication: _____
    _____
    _____
    Pin code: _____

    Mobile No.: _____ E-mail: _____

11. Accommodation Required: ☐ Yes ☐ No

Please register me for the course on ***Fundamentals of Robotics and Artificial Intelligence*** to be held at IIT Guwahati during Feb 4 – 8, 2019. I am sending an advance copy of this application by email to the coordinator of the course. I undertake to send the hard copy signed by the Head of my Institution along with the Draft No. _____ for Rs _____.

Place:

Date: *Signature of the applicant*

SPONSORSHIP / NOMINATION CERTIFICATE

Prof/Dr./Mr./Ms./Mrs./.....
is a Faculty / Research Scholar of our institute. His/her application is hereby sponsored / nominated. The applicant is permitted to attend the short-term course **Fundamentals of Robotics and Artificial Intelligence** at IIT Guwahati during 04/02/2019 to 08/02/2019 if selected.

I also certify that our institute / college is under the *Institution List* of 3rd Phase of TEQIP Project of MHRD.
(Strike out if not applicable)

Date

Signature of Authority

Name
Designation

Official Seal

The duly filled-in sponsored/nominated application form should be mailed to:

Prof. Shyamanta M Hazarika
Department of Mechanical Engineering
Indian Institute of Technology Guwahati
Guwahati-781039, Assam
Ph. No. 0361-2583437(O), 9435084468 (M)
Email: s.m.hazarika@iitg.ac.in