Ministry of Human Resource Development
Government of India

सत्यमेव जयते

Robotics systems: design, analysis and fabrication

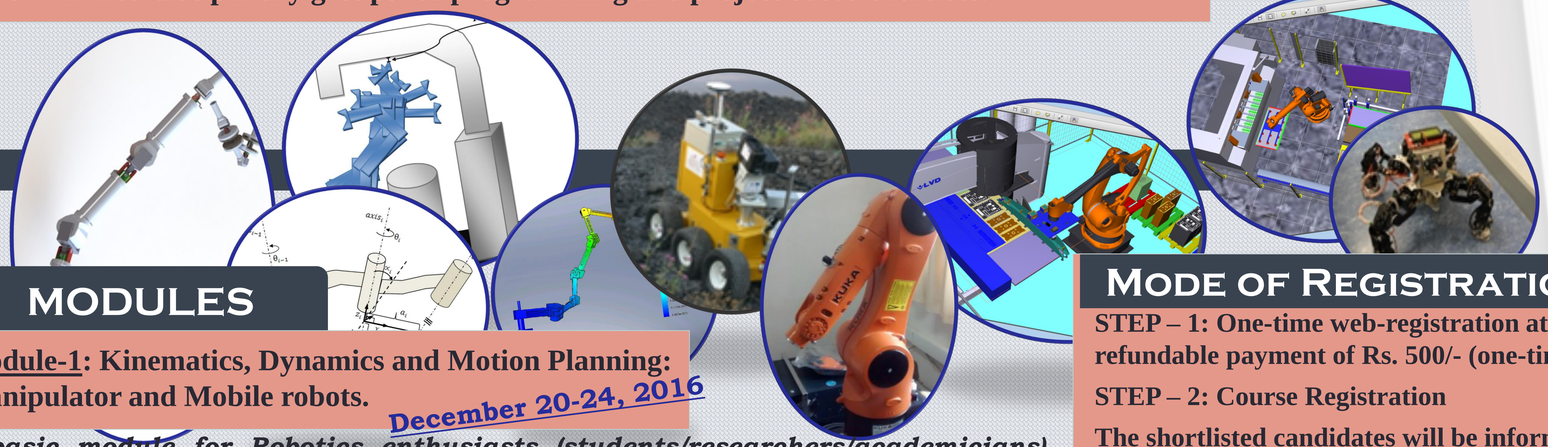
A TWO-WEEK WINTER-TERM COURSE

GLOBAL INITIATIVE OF ACADEMIC NETWORKS

INDIAN INSTITUTE OF TECHNOLOGY ROPAR, DECEMBER 20 – 30, 2016

OVERVIEW

The Robotics course includes mechanical, electronics and computing aspects for designing and building robot systems. Different robot applications will be considered for explanation of kinematics and dynamics and also for the controller design, robot mobility, robot-safety and performance benchmarking. Design and fabrication of some robotic systems via experimental assignments are included in the practical hands-on sessions. The participants will be encouraged to work in interdisciplinary groups for programming and project based exercises.



MODULES

Module-1: Kinematics, Dynamics and Motion Planning: Manipulator and Mobile robots.

December 20-24, 2016

A basic module for Robotics enthusiasts (students/researchers/academicians) from different streams – Mechanical, Electrical, Electronics Engineering and Computer Sciences. A common practice at international Robotic courses.

Module 2: Robot Design Measures, Safety, Benchmarking and assessment.

December 26-30, 2016

To reinforce international emerging safety requirements in Robotic design and utilization in different application, through training of the measures used in practice.

FACULTY

Professor Gurvinder Singh Virk
Professor of Robotics, University of Gävle &
KTH Royal Institute of Technology, SWEDEN

A technical and engineering expert with extensive experience of international research collaboration in a wide areas of mobile robotics (walking and climbing), personal care robots (including exoskeletons for medical and non-medical applications), intelligent controllers, robot safety and robot modularity. Professor Virk was the coordinator of the highly successful EC funded Network of Excellence on Climbing and walking robots (CLAWAR). Prof Virk is a leading actor in international robot standardization and is Convener of three work groups on robot safety and robot modularity as well as member of several other robot standardization projects.

MODE OF REGISTRATION

STEP – 1: One-time web-registration at GIAN portal (http://www.gian.iitkgp.ac.in/GREGN/index) through a non-refundable payment of Rs. 500/- (one-time). ***[A copy of enrolment form to be sent to course coordinator]***

STEP – 2: Course Registration

The shortlisted candidates will be informed by email. They need to make full payment of the course registration fee.

- **either by NEFT (Account holder name: The Registrar, IIT Ropar; Account no: 30836125653; IFSC Code: SBIN0013181; Bank: SBI; Branch Name: IIT Ropar)**
- **or by sending a demand draft in favour of "Registrar, IIT Ropar" payable at Rupnagar-140001, Punjab before the last date of registration.** ***Email the copy of demand draft and registration form to the course coordinator.***

For any query, please email at: ekta@iitrpr.ac.in

YOU CAN ATTEND IF ...

You are an engineer/researcher from manufacturing, service or government organization including R&D laboratories,

a faculty member from reputed academic/technical Institution,

a student at any level (BTech/MSc/MTech/PhD).

REGISTRATION FEES

	Industry/ Research Organizations	Academic Institutions	Students
Any one modules:	Rs. 6500/	Rs. 3000/-	Rs. 800
Both modules:	Rs. 10000/-	Rs. 5000/-	Rs. 1500

Foreign Partcipants: $ 500 for both modules

The above fees includes all instructional materials, computer usage for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility.

The participants will be provided with accommodation on payment basis

CONTACT HOURS

Lectures per day	4 hours
Practice Session per day	1:15 hours
Total contact hours: 60 (for two modules)	

Dr Ekta Singla
Mechanical Engineering Department, IIT Ropar

Ekta Singla is an assistance professor at IIT Ropar. Prior to this, she was a research associate at ISIR, University of Pierre and Marie Curie, Paris, and worked for an evolutionary design of a robotic arm for cluttered environments. Recipient of National Doctoral Fellowship (AICTE) during her PhD from IIT Kanpur, she has contributed in the kinematic synthesis, motion planning and development of redundant robotic arms for constrained workspaces.

Her current research interests inclined towards the task-oriented designs of robots for maintenance and service applications and realization of the designs using modular approach.

Course Coordinator: Dr Ekta Singla, Assistant Professor, Mechanical Engineering Department, IIT Ropar, Roopnagar – 140001 (PUNJAB) INDIA, www.iitrpr.ac.in, Phone: +91 1881 242160
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