



AICTE – Training And Learning
(ATAL) Academy



Sponsored Programme on

ROBOTICS

December 2-6, 2019



Organized by

**Department of Mechanical Engineering,
IIT(BHU) Varanasi (UP) India 221005**

About AICTE's ATAL Programme :

AICTE Training And Learning (ATAL) Programme is an initiative by AICTE which aims at empowering faculty to achieve goals of Higher Education such as access, equity and quality. This programme is designed to fulfill the need to train the young generation in skill sector and having faculty & technicians to be trained in their respective disciplines. It was felt that Training with latest tools and technologies is vital to keeping an institute competitive and more productive. Training is required for increasing the knowledge and skills of students to make them more employable to acquire global competencies. It also transforms them to harmonize with society and most importantly to make them a good citizen of the country.

Objective of ATAL Academy:

- To set up an Academy which will plan and help in imparting quality technical education in the country
- To support technical institutions in fostering research, innovation and entrepreneurship through training
- To stress upon empowering technical teachers & technicians using Information & Communication Technology
- To utilize SWAYAM platform and other resource for the delivery of trainings.
- To provide a variety of opportunities for training and exchange of experiences. Such as workshops, Orientations, learning communities, peer mentoring and other faculty development programs.
- To support policy makers for incorporating training as per requirements

Course Content:

Session -1	Session-2	Session - 3
Introduction to Robotics	Robot Kinematics	Inverse Kinematics
Robot Dynamics	Robot Modelling & Simulation	Lab Session on Robot Components & Assembly
Robot Sensors & Actuators	Robot Vision	Lab Session on Robot Control using Teach Pendant
Intelligent Control	Pick & Place application	Lab session on Robot Programming
Reconfigurable Robot	Medical Application of Robots	Valediction

Target Audience : AICTE approved Institutions-Faculty Members, Research Scholars, Master Research Students and Industry Professionals (on payment basis only @Rs. 10000 pp). **Students & faculty must send form certified by your Institution Head.**

Venue : Additive Manufacturing Laboratory, Department of Mechanical engineering, IIT(BHU) Varanasi

How to Register: No registration fee will be charged from the participants. Registration in the program is on **First Come First Serve** basis. To register visit & fill: <https://forms.gle/vakQgJeurvUYiriAA>

Accommodation:

Accommodation to outstation participations may be provided in IIT-BHU Alumni -Guest House on nominal charges (subject to availability) on prior request. However participants can use online hotel bookings in Varanasi.

Speakers:

Subject experts will be drawn from premier institution like IITs, NITs, IISc and other reputed research institutes /DRDO-CSIR Laboratory etc.

About Varanasi:

The holy city of Varanasi is the oldest living city in the world which is also known as the Capital of the Spiritualistic world. The city has a great historical and cultural importance. This religious and cultural capital of India is situated at the bank of the holy river Ganges and is famous for temples of Lord Shiva, Buddha (Sarnath) and Sankat Mochan etc. Varanasi is the premiere & mostly place of oriental learning and simultaneously keeping pace with modern advanced knowledge. The vibrant city with its multiple dimensions of knowledge and liberation has a magnetic attraction for people all over the world.

About Institute:

The Indian Institute of Technology (Banaras Hindu University) owes its existence to Mahamana Pandit Madan Mohan Malviya, Bharat Ratna-the founder of the first residential university of modern India, the Banaras Hindu University. The three of the erstwhile engineering colleges of BHU, namely BENCO, MINMET and TECHNO, were merged to form the Institute of Technology (IT-BHU) in 1968 to provide an integrated educational base. The IT-BHU has been admitting students through the JEE conducted by the IIT's since 1972, and has been consistently ranked amongst the top few engineering institutions of the country. IT-BHU became IIT (BHU) in June 29, 2012 by an Act of Parliament. The Institute has maintained high academic standard since its inception. It has turned out luminary engineers and administrators who served the nation with great distinction. ME department is oldest one which started in 1919.

How to Reach:

The city of Varanasi is well connected by road, rail and air with all the important cities of India. Regular flights are there from Varanasi to Delhi, Mumbai, Chennai, Hyderabad, Bangalore, Kolkata, Khajuraho and Lucknow. The IIT (BHU) campus is about 12Km from Varanasi Cantt and 20Km from Mughalsarai railway station and 38 Km from the Babatpur (Varanasi) airport.

*Course schedule:

Dates	10:00 AM to 11:30 AM	11:30 AM to 12.00 PM	12.00 PM to 1.30PM	1.30 PM to 2:30 PM	2:30 PM to 4.00 PM	4:15 PM to 4:45 PM
Monday Dec 2, 19	Registration, Inauguration & Over view: Robotics Prof. S Kumar	High Tea	Session 1 Robot Kinematics and Dynamics -1 By IIT(BHU) Faculty	Lunch	Session 2 Robot Kinematics and Dynamics -2 By IIT(BHU) Faculty	Tea
Tuesday Dec 3, 19	Session 3 Sensors and Vision System-1 By IIT(BHU) Faculty	Tea	Session 4 Sensors and Vision System-2 By IIT Faculty	Lunch	Session 5 Sensors and Vision System-3 By IIT Faculty	Tea
Wed Dec 4, 19	Session 6 Robot Control-1 By IIT(BHU) Faculty	Tea	Session 7 Robot Control-2 By IIT(BHU) Faculty	Lunch	Session 8 Robot Control-3 By IIT(BHU) Faculty	Tea
Thur Dec 5, 19	Session 9 Robotics Laboratory By IIT Faculty	Tea	Session 10 Robot Control-4 By IIT Faculty	Lunch	Session 11 Robot Actuation Systems-1 By IIT Faculty	Tea
Friday Dec 6, 19	Session 12 Control Hardware and Interfacing-1 By IIT Kanpur Faculty	Tea	Session 13 Control Hardware and Interfacing-2 By IIT(BHU) Faculty	Lunch	Session 14 Interaction session	Valediction

Faculty from IIT(BHU): Prof. Kripashaker, Prof. N. Mallik, Prof. SK Sinha, Prof. A K Jha, Prof. S Kumar, Prof. RB Mishra, Prof. AK Tripathi, Prof. R Srivastava etc. *may change

Patron:

Prof. Pramod Kumar Jain, Director
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