

**INDIRA GANDHI DELHI TECHNICAL UNIVERSITY FOR WOMEN**  
**Centre of Excellence - Advanced Mechatronics systems**

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**CoE-AMS**

**Funded by**  
**Delhi- Knowledge Development Foundation**  
**(DKDF)**

***PAVING WAY FOR - SKILL INDIA TO MAKE IN INDIA***



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## ***FROM THE VICE CHANCELLORS DESK***



Indira Gandhi Delhi Technical University for Women, Delhi (IGDTUW) has evolved as one of the fastest emerging centres for Excellence engaged in teaching and research fields in Engineering, Technology, Applied Sciences and Management. The University promotes inter-disciplinary education and research to enhance the professional and technical passion and skill of the students to cater to the needs of the Industry.

The Centre of Excellence- Advanced Mechatronics Systems (CoE-AMS) is supported by Delhi Knowledge Development Foundation Government of NCT of Delhi to contribute its best for skill development of students and of IGDTUW and Universities / Colleges /Polytechnics / ITI's under DTTE and make students industry ready.

We are working very close to the National Education Policy – 2020 and fostering a strong research culture and building research capacity across IGDTUW. The CoE-AMS provides the necessary software and hardware and faculty in area of Mechanical and Automation Engineering to help students and faculty in this pursuit.

**Dr. (Mrs.) Amita Dev**  
**Hon'ble Vice Chancellor**

## ***FROM THE NODAL OFFICER'S DESK***



The Centre of Excellence- Advanced Mechatronics Systems (CoE-AMS) is working with an aim to “Skill India To Make In India”. ‘Make in India’ is an initiative of Government of India to make and encourage companies to develop, manufacture and assemble products made in India. For this initiative, there is need to foster research, innovations, enhance skill development and create best in class manufacturing infrastructure in India.

At the outset, I would personally extend my gratitude to the Hon’ble Vice Chancellor and DKDF for their continuous vital support to nurture this centre of Excellence.

Today, Industry is employing ‘Industry-4.0 technologies’ and ‘Advanced Mechatronics’ is an area which is expected to witness a major requirement of trained manpower in near future and without this knowledge, mechanical engineers will become unfit for employment in production houses.

The CoE- AMS provides the necessary infrastructure, faculty and trainings to students and is also helping researchers in these technologies.

Students who are inclined to learn Industry 4.0 Technologies are welcome to interact with us.

Together we will contribute to “Make in India” Initiative of Government of India and skill India for productive employment and research in the sector.

With best wishes,

**Prof Manoj Soni**  
**Nodal Officer- CoE AMS**

# IGDTUW



## OUR VISION

To make India a Knowledge Society and Knowledge Economy by empowering the women of our country through education in Engineering, Science, Management and Technology.

To become one of the top technical Universities in the country known for its value based, quality technical education supported with industry relevant research, with focus on environmental and social issues.

## OUR MISSION

- To foster an environment for excellence in professional education and ensure active participation of women in the field of Engineering, Science, Management and Technology, while striking out a work-life balance.
- To start new professional courses for women in sun-rise disciplines and forge alliances with industry to impart industry relevant education.
- To emancipate women through pursuit of knowledge enabling them to gain equal status in society through realization of their rights and responsibilities.
- To develop sustainable systems and state-of-the-art infrastructure to enable the Indian women to become the future leaders, managers, researchers and productive team players in the field of science, technology and management

# About CoE – AMS

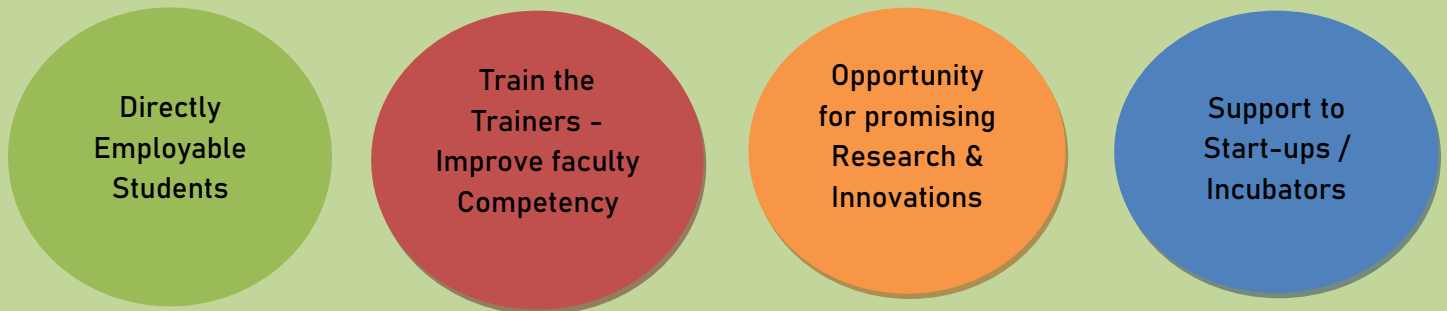


Inspired by the demands of Industrial Automation, the Centre of Excellence (CoE) in Advanced Mechatronics System has been setup at the University with support from Delhi Knowledge Development Foundation (DKDF). The CoE is aimed to provide the state-of-the-Art high speed computation facility for sophisticated Laboratories for CAD- Computer Aided Design for Mechatronic Concept Design, Robotics Virtual Programming, Virtual Commissioning (virtual PLC controller) and integration with equipment's for Mechatronics Hardware Design for Industry Automation, Digital Twin, Industrial Internet of things, Rapid Prototyping, CNC and Robot Programming to train and prepare students as per Industry 4.0 expectations and also to provide an opportunity for promising research and innovations .

Manufacturing Industry is witnessing rapid changes in control technology and there is buzz about artificially intelligent systems that can be monitored and controlled from far remote locations. Industry has requirement for trained personnel specialized in Industry 4.0 technologies. Advanced Mechatronics is an area which is expected to witness a major requirement of trained manpower in near future and without this knowledge, mechanical engineers will become unfit for employment in production houses.

This Skill Development Initiative proposes a complete learning solution to build specific skills and equip students with employable skills in engineering and manufacturing sector.

## Objectives and Outcomes :



The core component of AMS includes Software for Advanced Mechatronics Systems for simulating Mechatronics Systems, Programming PLCs and designing SCADA systems, with integration into IOT platforms, Robotic and CNC programming and projects to implement Artificial Intelligence for Industrial applications.

COE-AMS at IGDTUW aims to train and prepare students as per Industry 4.0 expectations and will also provide an opportunity for promising innovations. It will also offer skill development courses, Internships, Research and Development assistance to faculty and students of colleges who have signed MOU with IGDTUW and to collaborating industry.





## Benefits of CoE to Various stakeholders:



Stakeholders	Outcomes
Central and State Governments	<ul style="list-style-type: none"> <li>• Larger skilled and employable persons in the sector</li> <li>• Create industry friendly environment to setup and expand</li> </ul>
IGDTUW (Academic Institutes in the vicinity, Polytechnics and Engineering Colleges)	<ul style="list-style-type: none"> <li>• Attract more industries</li> <li>• Attract better faculty and improved quality of education</li> <li>• Setting-up of ultra-modern teaching/research facilities to foster and promote cutting edge research.</li> <li>• Continuous refinement of the curriculum content for Skill Excellence to meet industrial demands.</li> <li>• Creation of robust technical education eco-system through best practices.</li> <li>• Continuous up-gradation/modernization of existing laboratories to reflect industries' ever changing processes.</li> <li>• To perform capacity building activities and networking with other Institutes.</li> <li>• To motivate faculty and students towards promising innovations.</li> </ul>
Industry	<ul style="list-style-type: none"> <li>• Shorter employee enablement time period</li> <li>• Increased competitiveness due to more productive employee</li> <li>• Skill enhancement of existing employees on latest technology</li> </ul>

	<ul style="list-style-type: none"> <li>• Innovation projects with academia</li> </ul>
Students	<ul style="list-style-type: none"> <li>• Innovative projects can be performed leading to new product development.</li> <li>• Enhanced opportunity for placement.</li> <li>• Improvement in employable skills widely accepted by Industry</li> <li>• Opportunity to work on Innovation projects with the Industry</li> </ul>
Faculty	<ul style="list-style-type: none"> <li>• Providing real-world experience and skills to the students through active training in state of the art facilities</li> <li>• Creating Skill awareness among students of IGDTUW and nearby technical institutes through organization of skill development program</li> <li>• Engaging in consultancy for enhanced industrial participation and collaboration</li> <li>• Avenues for introduction of new courses/electives</li> <li>• Support for value added research themes in cutting-edge technologies</li> <li>• Attainment of improvement in the standards of publication</li> </ul>



# Awards and Accolades

The University under the able and visionary guidance of Hon'ble Vice Chancellor- Dr.(Mrs.) Amita Dev, IGDTUW has achieved several milestones in a short span.



2nd Rank In Innovation Among Higher Education Institutes Exclusively For Women.



Stree Shakti Samaan Award



University Of The Year Award By FICCI



E-Learning Excellence Award

The list goes on.

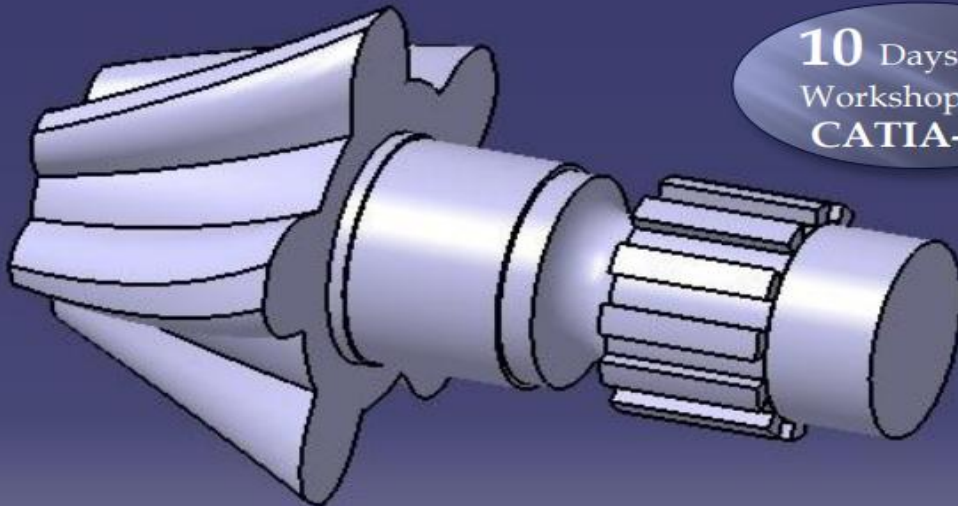
Please Visit: [www.igdtuw.ac.in](http://www.igdtuw.ac.in)

# Events at CoE-AMS:

## Workshops:



Indira Gandhi Delhi Technical University for Woman  
CoE-AMS



**10** Days Free  
Workshop on  
CATIA- V5

April 2022: A 10 hours workshop organized for the students of IGDTUW on Introduction to CATIA-V-5 in hybrid mode. Nearly 100 students of 1<sup>st</sup> year, 2<sup>nd</sup> Year and 3<sup>rd</sup> year Dept of MAE, participated in batches.

## Internships:



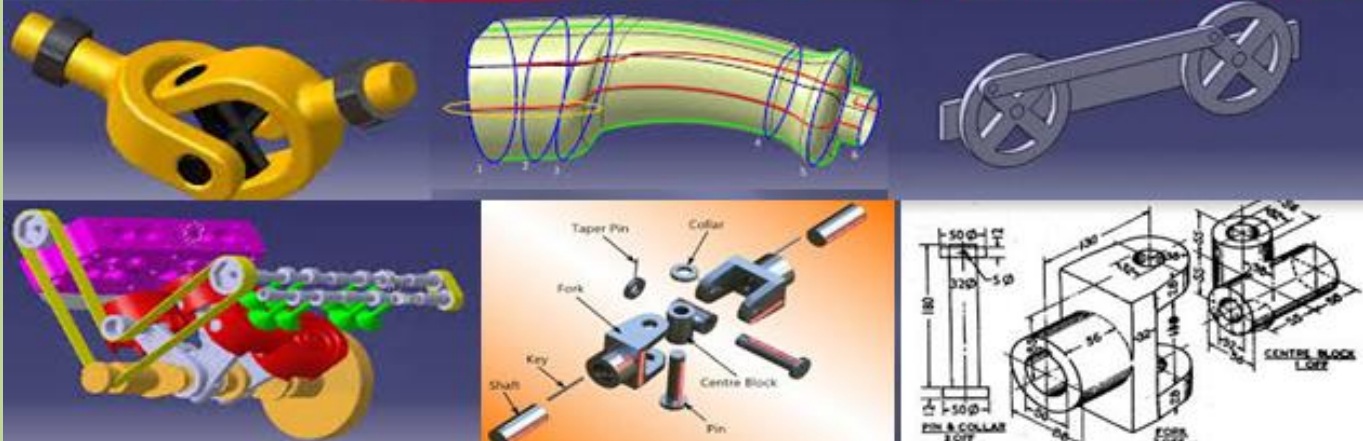
Indira Gandhi Delhi Technical University for Woman  
**CoE-AMS**



**120 HRS**

**SUMMER INTERNSHIP IN HYBRID MODE (1/6/22 - 31/7/22)**  
**TOPIC: CATIA-V5, FUNDAMENTAL & STRUCTURE**

**For Students only of:**  
**IGDTUW &**  
**Universities / Colleges /**  
**Polytechnics under DTE**



June – July 2022: A 120 Hour Internship on CATIA V5, R21 on fundamental and Structure Analysis in Hybrid Mode. Total of 71 participants (Male and Female) from IGDTUW, DITE, GGSIPU & DSEU have registered.



# Research at CoE-AMS:



The Following Research Oriented Student Projects are undergoing in CoE:

Oxygen Concentrator Project- By Ms Vedangani, 2<sup>nd</sup> MAE, under guidance of Prof Manoj Soni.



Artificial hand project by Ms Aparna Jha, PhD Scholar, Under Guidance of Prof Manoj Soni.



Study on Composites using Sesal fibre, by Ms Farheen Jahan, PhD Scholar Under Guidance of Prof Manoj Soni.



## Upcoming Labs:



**Digital Twin Lab**  
**Mechatronics Lab**  
**Factory Automation Lab**  
**Internet of Things lab**  
**Robotics Lab**  
**CNC Machine Lab**  
**Additive Manufacturing Lab**

## Contact Us:



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<https://sites.google.com/view/advanced-mechatronics/home>