

INDIAN INSTITUTE OF TECHNOLOGY GOA



Siemens Digitalization Centre of Excellence

A Summer School on Industrial Automation
Manufacturing Fundamentals

Venue : IIT Goa

Industry Partners

SIEMENS
Ingenuity for life

CoreEL
Technologies
Enabling Excellence

Training Program - NX Manufacturing Fundamentals

Program Schedule

	9.00 AM - 11.00 AM	11.30 AM - 1.30 PM	3.00 PM - 5.00 PM
Day 1	Basic Manufacturing Concepts	Analyzing a manufacturing part	Operation Navigator
Day 2	Parent groups	Cavity milling	Machining with T-Cutters
Day 3	Machining with T-Cutters	Coordinate systems	Visualization
Day 4	Planar milling	Floor and wall milling	Manual drilling, Engraving text

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For participation, please submit the google form available in the website. <https://www.iitgoa.ac.in/>

"Siemens Digitalization Centre of Excellence" is an interdisciplinary, industry backed, centre focused on developing skill excellence across domains. Through the training and implementation of industry-relevant technology and processes, the centre aims to facilitate a multi-disciplinary learning environment across Technology, Engineering, Science and Management faculties. It is designed to meet the demands of the industries' ever changing processes and help build skills around collaboration and innovation. The centre will leverage Siemens' integrated platform to draw upon the expertise from various areas to provide its partners with knowledge and tools.

The broad objectives of Siemens Digitalization Centre of Excellence

- Promote industry partnerships to guide, support & validate industry relevant learning activities
- Assist exploratory research projects to foster relevant industry innovation
- Assist integration of technology into college curricula
- Facilitate graduates to compete for better opportunities
- Enable technology adoption by industry

Student Learning Program

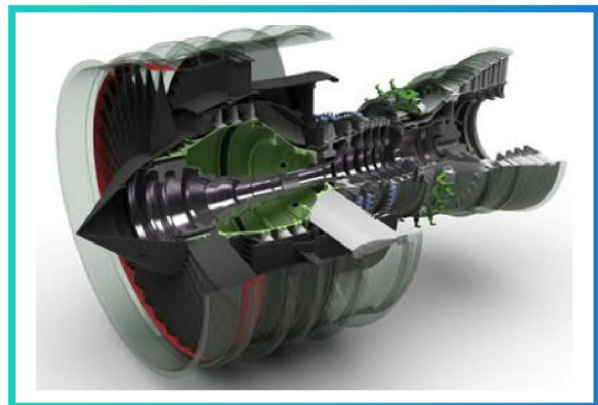
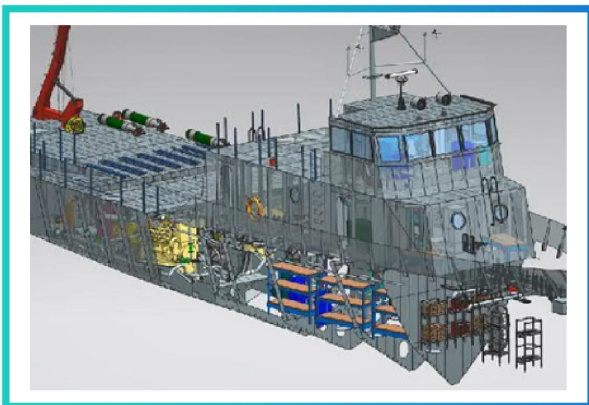
The program leverages Siemens technology to develop and cultivate future professionals, utilizing essentials for engineering, technology, manufacturing, industrial design, analysis and detail design.

The program involves continuous training, monitoring and assessment of students.

Labs Under Siemens Centre of Excellence

PRODUCT DESIGN LAB

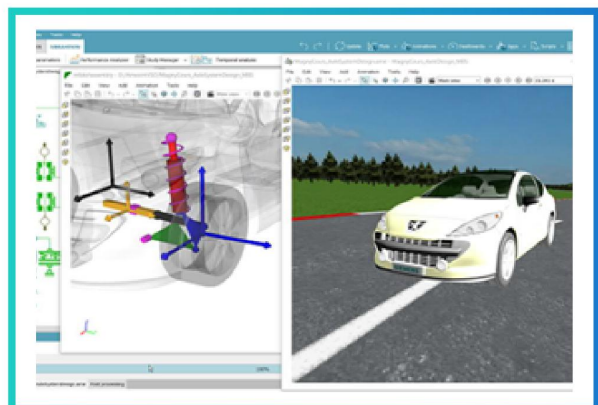
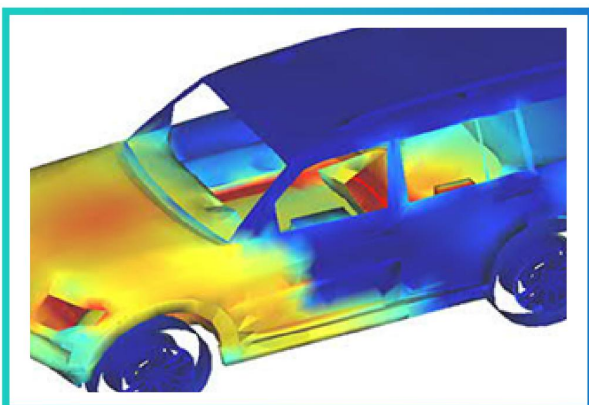
PRODUCT DESIGN LAB: Digital twins can be used to virtually validate product performance, while also showing how products are currently acting in the physical world. This “product digital twin” provides a virtual-physical connection that allows to analyze how a product performs under various conditions and make adjustments in the virtual world to ensure that the next physical product will perform exactly as planned in the field. It doesn't matter if there is complex systems and materials – product digital twins helps to navigate that complexity to make the best possible decisions. All of this eliminates the need for multiple prototypes, reduces total development time, improves quality of the final manufactured product, and enables faster iterations in response to customer feedback.



ADVANCED SIMULATION LAB

The Advanced Simulation Lab addresses complex engineering challenges safeguarding the balance between technological design options and functional performance. From testing and mechanical simulation to model-based systems engineering it enables engineers to understand the functional performance engineering of mechatronic systems to solve noise, vibration and harshness (NVH), acoustics, durability, dynamics, performance, fuel economy and controls development issues.

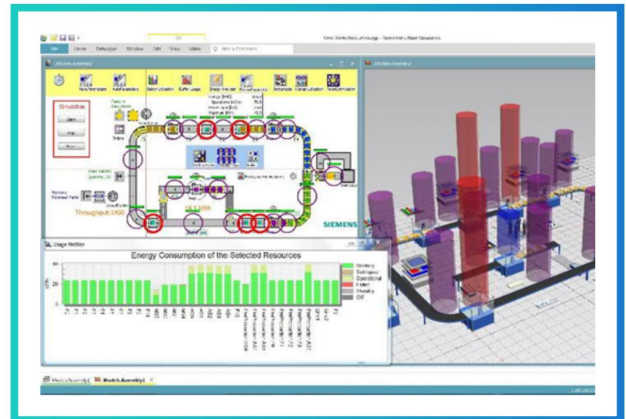
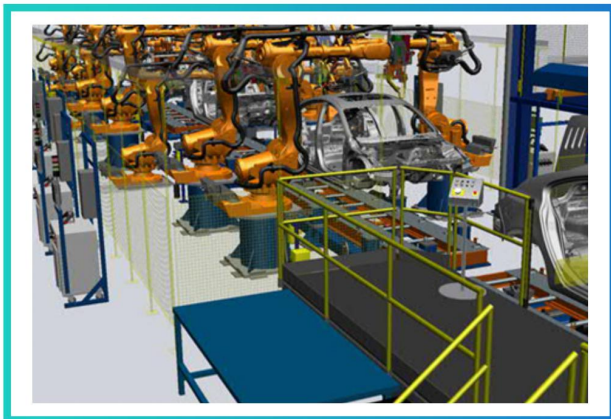
The system simulation, 3D CAE and test to help students and industry predict performance across all critical attributes earlier and throughout the entire product lifecycle. By combining physics-based simulations with insights gained from data analytics, the centre helps students & industry optimize design and deliver innovations faster.



DIGITAL MANUFACTURING -ROBOTICS & AUTOMATION LAB

A production digital twin can help validate how well a manufacturing process will work on the shop floor before anything goes into production. By simulating the process using a digital twin and analyzing why things are happening using the digital thread, companies can create a production methodology that stays efficient under a variety of conditions.

The production can be optimized even further by creating product digital twins of all the manufacturing equipment. Using the data from the product and production digital twins, businesses can prevent costly downtime to equipment – and even predict when preventive maintenance will be necessary. This constant stream of accurate information enables manufacturing operations that are faster, more efficient, and more reliable.



ADDITIVE MANUFACTURING & CAM LAB

Siemens NX provides all of the necessary capabilities, from design to print to post-print validation, in a single integrated system. Siemens NX is industrializing additive manufacturing not only prototype, but also manufacture ground-breaking products with this exciting new technology. This allows to re-imagine products, reinvent manufacturing and even rethink business models with additive manufacturing technology

