Next-Gen Smart Factory Makeathon Challenge

on
Sep 07 – 10, 2025

Theme: Combine VR, AI, and simulation tools to design next-gen smart factory layouts and workflows.

The Challenge will be held at the conclusion of the VAP course.

Experts

Mr. Vinayak
Senior Engineer, EDS Technologies

Mr. Suraboopathy
Application Engineer, EDS Technologies

Mr. Rohan
Application Engineer, EDS Technologies

Mr. Sanjeev
Senior Engineer, EDS Technologies

Targeted Audience

UG, PG, and Research Scholars

Registration Details

Last Date for Registration:
VAP Registration Fee: INR 500
Payment Link: https://events.vit.ac.in/
VAP Certificates will be issued jointly by VIT and EDS

ORGANIZING COMMITTEE

CHIEF PATRON

Dr. Viswanathan G, Chancellor

PATRONS

Shri. Sankar Viswanathan, Vice-President
Dr. Sekar Viswanathan, Vice-President
Dr. G.V. Selvam, Vice-President
Dr. Sandhya Pentareddy, Executive Director
Ms. Kadhambari S. Viswanathan, Assistant Vice-President

CO-PATRON

Dr. Kanchana Bhaaskaran V. S., Vice Chancellor
Dr. Partha Sharathi Mallick, Pro-Vice Chancellor
Dr. Jayabarathi T. , Registrar

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Dr. Kuppan P, Dean, SMEC, VIT

CO-CHAIRPERSONS

Dr. Nandha Gopal, Associate Dean, SMEC, VIT
Dr. Manikandan M, HoD-DDA, SMEC, VIT

CO-ORDINATOR (s)

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VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

School of Mechanical Engineering

Invites You for

VALUE ADDED PROGRAM

ON

Hands-On Immersive Mechatronics for Industry 4.0 with Virtual Reality, Generative AI & Digital Twin

Session 1: **Aug 08 – 10, 2025**

Session 2: **Sept 05 – 06, 2025**

DASSAULT SYSTEMES

EDS TECHNOLOGIES
www.edstechnologies.com

Vellore Institute of Technology

Vellore Institute of Technology was founded in 1984 as Vellore Engineering College by the Founder and Chancellor Dr. G. Viswanathan. University status was conferred in 2001 by MHRD Govt. of India in recognition of its excellence in academics, research and extracurricular initiatives.

Ranking & Accreditation

VIT has emerged as one of the best institutes of India and is aspiring to become a global leader. Quality in teaching learning, research and innovation makes VIT unique.

- ❖ Engineering and Technology subject areas of VIT are the 142th best in the World and the 9th best in India, and eight subjects of VIT are within the top 200 in the world (as per QS World University Rankings by Subject 2025)
- ❖ The 10th best University, the 13th best research institution and the 11th best engineering institution in India (NIRF Ranking, Govt. of India 2024).
- ❖ 2nd in India and 501-600 in the world (Shanghai ARWU Ranking 2024).
- ❖ NAAC Accreditation with A++ grade (3.66 out of 4).
- ❖ 396th in the world and 8th in India (QS World University Rankings: Sustainability 2025)

School of Mechanical Engineering

The School of Mechanical Engineering is amongst the premier schools of VIT started functioning right from 1984. The school has got a team of highly qualified faculty members, many holding PhDs from the elite institutes across the globe, to teach and train the best minds of this country.

The pride of the school lies in the significant research funding received from several Government agencies such as DST, DRDO, MNRE, CSIR, CVRDE, CPDO, IE, AR&DB, CVRDE, BRNS, ISRO, UGC, NRB, AICTE etc.,

Memoranda of Understanding (MoUs) with various Industry Research Organisations and leading Universities. The Department of Science and Technology, Govt. of India has recognized the school for its research activities and supported in 2003 and 2010 under FIST scheme.

The School has modern facilities, enabling cutting edge research in a wide spectrum of technological areas. The school actively assists local industries in product design, complex-part manufacturing and Computational Fluid Dynamics. The courses offered cater to the needs of Aerospace, Defense, Manufacturing, Energy and Automotive industries. This has enabled the students to pursue higher studies in leading Universities in India and abroad.

Three of the Bachelors Degree Programmes offered by the School, B. Tech. Mechanical Engineering, B.Tech. Mechanical with Specialisation in Automotive Engineering and B.Tech. Mechanical with Specialisation in Energy Engineering are accredited by the Engineering Accreditation Commission of ABET. Mechanical and Manufacturing Engineering are ranked in the top 8-10 in India and top 201-250 worldwide as per QS World University Rankings by Subject 2024. In Engineering and Technology "Mechanical Engineering" Specialisations are ranked within the top 501-600 in the world as per THE World University Ranking by Subject 2024.

Course Objectives

- To provide experiential knowledge of immersive mechatronics systems through hands-on virtual simulations and control applications in VR environments.
- To enable participants to apply AI-driven generative design principles for conceptual and performance-optimized product design.
- To equip learners with knowledge of digital/virtual twin tools for simulating smart manufacturing and assembly operations.

Course Outcomes

- To provide experiential knowledge of immersive mechatronics systems through hands-on virtual simulations and control applications in VR environments.
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Topics to be discussed

- Designing and Simulating a Virtual Mechatronics System
- VR-based Robot Arm Control
- Virtual Simulation of a Pick-and-Place System
- Virtual Simulation of a Motor Assembly and Visualization of Parts
- Exploring the VR based Drone Assembly and Visualization of Parts
- Exploring the VR based two-wheeler assembly and visualization of parts
- AI-Based Generative Design
- Design Space Creation & Configuration (AI)
- Set up the Analysis Model and Setup Validation (AI)
- Optimize the Concept Shape (AI)
- Generate and Validate the Concept Shape (AI)
- Generative Design for Additive Manufacturing (AI)
- Develop a Digital/Virtual Twin
- Virtual Factory Creation & Flow Analysis
- Machine & Equipment Layout Simulation
- Projection-Based Assembly Execution