Vellore Institute of Technology (VIT)

VIT was founded in 1984 as Vellore Engineering College by the Founder and Chancellor Dr. G. Viswanathan. Deemed to be University status was conferred in 2001 by MHRD Govt. of India in recognition of its excellence in academics, research, and extracurricular initiatives. 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: 142nd in the World and 9th best in India (QS World University Rankings by Subject 2025)
- Data Science and AI subject areas are within the Top 100 in the world. Computer Science, Information Systems, Electrical, Electronics, and Materials Science subject areas are within the top 200 in the world (QS World University Rankings by Subject 2025)
- Within the top 2 in India and top 600 in the world (Shanghai ARWU ranking 2025)
- NAAC Accreditation with A++ grade (3.66 out of 4)
- Within the top 20 in University, Research and Engineering categories in India (NIRF Ranking, Govt. of India 2025)
- 352nd in the world and 7th in India (QS World University Rankings: Sustainability 2026)

School of Mechanical Engineering (SMEC)

Established in 1984, SMEC is one of VIT's oldest and most prestigious schools. It offers **3 undergraduate** and **6 postgraduate programs**, supported by a highly qualified faculty, many with PhDs from leading global institutions. The school has earned significant research funding from national and international agencies such as **DST, DRDO, MNRE, CSIR, ISRO, UGC, Royal Academy of Engineering**, among others. Recognized by the **Department of Science and Technology** under the **FIST scheme** in 2003, 2010, and 2022, SMEC is equipped with state-of-the-art infrastructure that supports advanced research in specialized technological domains.

- Ranked **501–600 globally** in THE World University Subject Rankings (2024).
- **Mechanical & Manufacturing Engineering** is among the **top 10 in India** and **201–250 globally** as per QS Subject Rankings (2024).
- Achieved **NBA accreditation in 2025 for 6 years**, affirming its academic excellence and industry relevance.

Chief Patron

Dr. G. Viswanathan, Chancellor, VIT

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

40 YEARS OF TRANSFORMING LIVES
VIT - A place to learn; A chance to grow

A Value Added Program

on

Product Design & Development

(Hybrid Mode)

Total Program Duration: **30 Hours**

Schedule: **Dec 2025 – Mar 2026**

Offered by

Boeing India Private Limited, Chennai

Organised by

School of Mechanical Engineering (SMEC)

Vellore Institute of Technology, Vellore

Course Objectives:

This course offers comprehensive knowledge and practical insights into aerospace engineering fundamentals and research methodologies. Co-created with leading universities and Boeing, it prepares 3rd and 4th year students for entry level roles in the aerospace sector by focusing on design principles, innovation strategies, and industry standards. Emphasizing real-world applications and collaborative problem-solving, learners can contribute effectively to engineering and R&D projects, fostering readiness for global aerospace challenges and opportunities.

Course Outcomes:

At the end of the course, students will be able to:

1. **Demonstrate industry readiness** by applying engineering principles and practices relevant to aerospace product design and development.
2. **Exhibit problem-solving ability, learning agility, and effective communication skills** essential for professional success in engineering and R&D roles.
3. **Apply product, process, and tool (PPT) knowledge** to design, develop, and evaluate mechanical components and systems with a strong job orientation.

Course Syllabus:

Product Development Process & Systems Engineering Overview	
	• Overview of current industry trends, MBE and significance of digital Twin • Fundamentals of systems engineering, Common Technical Processes • Overview of the general design and development process, Release processes, Configuration Management, Change Management • Overview of System Safety Assessment
Requirements Management & System Safety Assessment	
	• Need for requirements, Writing good requirements, , Kano model, Context Diagram, Mind Map • Industry Standards, General requirements, Functional requirements, Design specific requirements, Performance requirements • Requirement Tier, Validation & Verification, Compliance Matrix • System Safety Assessment - FHA, FTA, FMEA, PRA, CMA
Design & Development	
	• Design conceptualization, Preparation of conceptual layouts, Guidelines from Industrial standards pertaining to the design requirements • Finalizing a layout design, Sizing of components from the finalized layout design, Material Selection, heat treatment and finishes, Types of fits • Preparation of detail and assembly drawings, GD&T, Tolerance stack up • Design review, Uploading in PLM database, Release of drawings for production
Structural Analysis	
	• Understanding the Structure and Its Design Requirements, Structural Reduction, Understanding Material • Structural Parameters, Load Calculations and Load Path, Analysis Requirements, Initial Sizing, Performing Detailed Analysis Process, Structural Changes Using Analysis Outputs • Structural Analysis Reports/ Strength Check Notes, Structural Tests / Analysis Validation
Verification, Certification & Configuration Management	
	• Qualification Plan, Qualification Procedure, Analysis & Significance, Qualification Report – Test, Similarity, Analysis, Inspection • Certification and its significance • In-service Issues

Eligible Participants:

UG/ PG Students and Research Scholars

Session Speakers:

Subject Matter Experts from Boeing India Private Limited, Chennai and Bengaluru.

Important Dates:

Start date for registration:	04.12.2025
Last date for registration:	09.12.2025
Confirmation of registration:	10.12.2025

Registration:

- The registration fee for the VIT students is **Rs. 2500 (including 18% GST).**
- Students with 75% class attendance (registered students will be granted On-Duty) will be eligible for the module-wise quizzes and Final Assessment Test.
- Boeing will certify the candidates who successfully clear the tests.
- The course registration is strictly on a first-come, first-serve basis.
- Interested Students are required to register for the VAP through the web link: **https://events.vit.ac.in/**

Contact:

Dr. K V Mohankumar,
Assistant Professor - SG2,
MB-110, Engineering Simulation Lab,
School of Mechanical Engineering
Mobile: +91 9176670700
Email: mohankumar.kv@vit.ac.in