

Important Dates

Last date for registration : November 6, 2023

*Only limited participants are allowed;
No registration fee.*

Registration



For registration, scan me

Contact :

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Email : vasudevan.r@vit.ac.in



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Prof. Devendranath Ramkumar K, Dean-SMEC, VIT, Vellore

Co-Convenor

Prof. Benedict Thomas,
HOD, Design & Automation, SMEC, VIT, Vellore

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HOD, Manufacturing Engineering, SMEC, VIT, Vellore

Prof. Ashok B,
HOD, Automotive Engineering, SMEC, VIT, Vellore

Prof. Asokan M A,
HOD, Thermal & Energy Engineering, SMEC, VIT, Vellore

Co-ordinators

Prof. R. Vasudevan, SMEC, VIT, Vellore

Prof. B. Ashok, SMEC, VIT, Vellore

Prof. S. Denis Ashok, SMEC, VIT, Vellore

Prof. Bibin John, SMEC, VIT, Vellore

Prof. S. Sreeja, SMEC, VIT, Vellore

A Short Course on Design for Additive Manufacturing

November 8, 2023
VIT, Vellore

Resource Persons

Ms. Akshatha Hulmani Dayananda
Mr. Sai Rakesh Kandagatla
Wipro3D, Bangalore

Supported by Royal Academy of Engineering, UK



Organised by
School of Mechanical Engineering
Vellore Institute of Technology, Vellore, India

in association with
Mapúa University, Philippines; Wipro3D, Bangalore;
EOS GmbH, India.

Vellore Institute of Technology (VIT)

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

Vellore Institute of Technology (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 240th best in the World and the 9th best in India, and eight subjects of VIT are within the top 500 in the world (as per QS World University Rankings by Subject 2023)
- ❖ The 8th best University, the 11th best research institution and the 11th best engineering institution in India (NIRF Ranking, Govt. of India 2023)
- ❖ Ranked among the top 600-800 universities of the world (THE World University Ranking 2024)
- ❖ NAAC Accreditation with A++ grade (3.66 out of 4)
- ❖ The 173rd best Institution in Asia (QS - Asia University Rankings 2023)

School of Mechanical Engineering (SMEC)

The School of Mechanical Engineering is one of the oldest and most prestigious schools of VIT. This school started functioning right from 1984, the year in which our institution began. The School of Mechanical Engineering offers 3 undergraduate and 6 post-graduate programs. The school has a team of highly qualified faculty members, many holding PhDs from elite institutes across the globe, to teach and train this country's best minds. The pride of the school lies in the significant research funding received from several National and International agencies such as DST, DRDO, MNRE, CSIT, CVRDE, CPDO, IE, AR&DB, BRNS, ISRO, UGC, NRB, Royal Academy of Engineering etc. The Department of Science and Technology, Govt. of India has recognized the school for its research activities and supported it in 2003, 2010 and 2022 under the FIST scheme. The school has modern facilities, enabling cutting-edge research in a wide spectrum of niche technological areas. The school is ranked 501-600 in the World as per THE World University Subject Ranking in 2021. Mechanical and Manufacturing Engineering is ranked within the top 10 in India and top 251-300 in the world as per QS World University Rankings by Subject 2023.

About the short course

The recent widespread adaptation of additive manufacturing has raised concerns on occupational safety and health implications of workers due to emissions, volatile organic compounds, unexpected system failure and breakdowns. The safe deployment of additive manufacturing technologies requires a comprehensive tools and techniques for assessment of safety and develop appropriate mitigation strategies or requirements. In vivo and in vitro simulation models, model-based analysis and digital twins using artificial intelligence and machine learning techniques will allow us to predict the systemic failures and their underlying causes in additive manufacturing process. However, there is a greater challenge in maintaining the safety of the additive manufacturing process as the engineers often lack the tools and methods to undertake sufficient analytical work on additive manufacturing process due to variety of AM processes and material compositions, nonlinear interaction of process parameters, uncertainty of material behavior, which limits generalizability of system models. In order to ensure safety and resilience in additive manufacturing process, there is a need for enhancing the engineering skills to reduce the emerging socio-technical knowledge gaps which can support us to develop an integrated and complementary technique that compensate for deficiencies or limitations in the current methods and practices of additive manufacturing. The knowledge needed ranges from basic understanding of the technology to selecting components for production, design and engineering, scaling and validating production. Few courses have focused only on technical aspect. However, some topics such as IP, liability, safety, quality assurance, sustainability and business models related to AM is not yet covered. This short-term course will address the aforementioned aspects of AM. Participants will have the opportunity to get hands-on experience in the operation of FDM printers. Further, design methodology and topology optimization, case studies on Laser Powder Bed Fusion Process and guidelines for Design for Additive Manufacturing will be covered. A hands-on training in "Netfabb" will be provided during the lecture.

