

ABOUT THE INSTITUTE

Vellore Institute of Technology (VIT) was founded in 1984 by Chancellor Dr. G. Viswanathan as Vellore Engineering College. Students from all around India and more than 60 countries come to VIT because of its stellar academic reputation. The Ministry of Human Resource Development (MHRD), Government of India, awarded the institution university status in 2001 in appreciation of its accomplishments in research, academics, and extracurricular activities. VIT has multiple campuses in India, including Vellore, Chennai (Tamil Nadu), Amravati (AP), Bhopal (MP) and Bengaluru (Karnataka), and an international campus in Mauritius. National Institutional Ranking Framework (NIRF) ranked VIT at 21st in the Overall category, 14th in the Research category, 16th in Engineering, and 14th in the University category in 2025, as announced by the Ministry of Education, Government of India. The institution adheres to world-class academic standards and is accredited by NAAC (India), IET (UK), and ABET (USA). VIT is ranked 691 among the top universities worldwide by the QS World University Rankings in 2026, ranked 352nd worldwide and 7th in India by the QS World University Rankings: Sustainability 2026, placed 9th in Engineering and Technology in India by the QS World University Rankings by subject 2025, and is among top 600 universities in world by the Shanghai ARWU Ranking 2025.

VIT offers a dynamic academic environment enriched by strong industry engagement, research culture, and initiatives such as Hack-a-thon, Make-a-thon, Math-a-thon, and Stat-a-thon, fostering problem-solving skills and experiential learning.

ABOUT THE SCHOOL

The School of Advanced Sciences (SAS) houses the Departments of Mathematics, Physics, and Chemistry, with 281 faculty members dedicated to high-quality teaching and research. The school offers 2-year M.Sc. programs in Chemistry, Physics, Data Science, and Business Statistics, and 5-year Integrated M.Sc. programs in Mathematics, Physics, Chemistry, and Computational Statistics & Data Analytics.

All departments are supported by DST-FIST, enabling advanced laboratory and research facilities. SAS hosts 1174 Ph.D. scholars, and faculty members hold several national and international research grants from agencies such as NBHM, CSIR, UGC, DRDO, and DST.

ABOUT THE DEPARTMENT

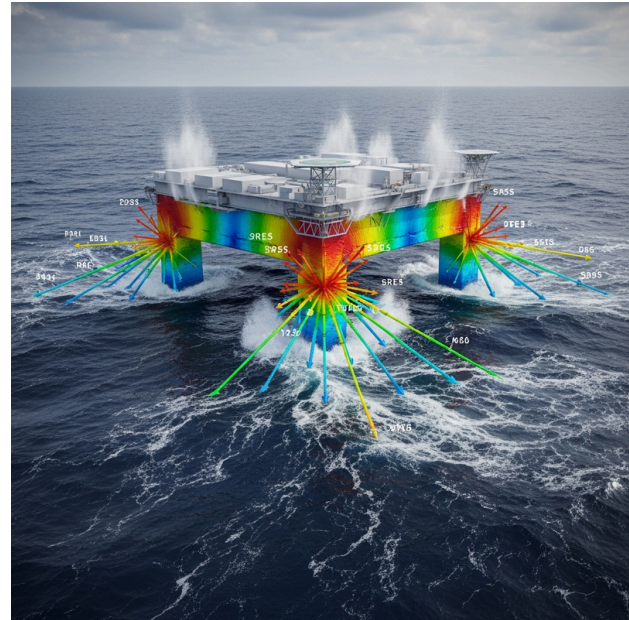
The Department of Mathematics at VIT holds a strong academic standing, with the QS Subject Ranking 2025 placing Mathematics in the 201–250 global band. The department recently secured DST-FIST support to boost research infrastructure.

Faculty research covers algebra, analysis, differential equations, applied mathematics, optimization, statistics, data science, computational sciences, and theoretical physics. The department offers Ph.D. programmes in Mathematics, Statistics, and Data Science, along with M.Sc. (Data Science), M.Sc. (Business Statistics), Integrated M.Sc. (Computational Statistics & Data Analytics), and Integrated M.Sc. (Mathematics).

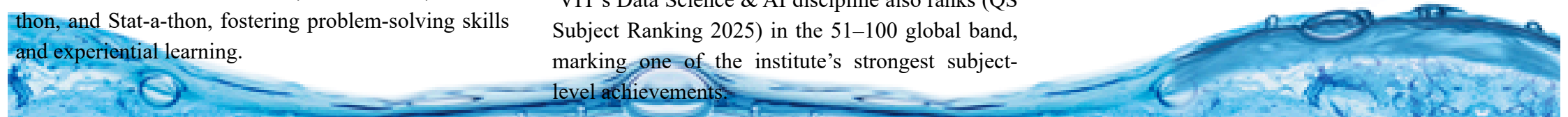
VIT’s Data Science & AI discipline also ranks (QS Subject Ranking 2025) in the 51–100 global band, marking one of the institute’s strongest subject-level achievements.

**VALUE ADDED COURSE
ON
VAC2508 - MATHEMATICAL
MODELS IN OCEAN
ENGINEERING
(ONLINE MODE)**

**ORGANIZED BY
DEPARTMENT OF MATHEMATICS,
SCHOOL OF ADVANCED SCIENCES,
VIT VELLORE**



Date: 19th - 23rd January 2026



ABOUT THE VALUE-ADDED COURSE

This course delves into the fascinating world of fluid motion, equipping students with essential mathematical tools and computational techniques to analyze and solve complex fluid dynamics problems. Beginning with an overview of fluid motion, the course progresses to explore special functions crucial for representing solutions in various coordinate systems.

VAC CONTENTS

- Overview of fluid motion
- Special Functions
- Perturbation techniques
- Theory of Water waves
- Eigenfunction Matching Method (EMM)
- Scattering problem using EMM (MATLAB)
- Finite Difference Methods: Boundary and Interior Layer Problems
- Finite Element Method: Theory, Formulation, and Implementation

COURSE OUTCOMES

- Understand and apply fundamental principles of fluid motion and governing equations.
- Analyse the generation, propagation, and behaviour of water waves using theoretical models.
- Apply EMM to solve scattering problems related to fluid-structure interaction.
- Develop and implement MATLAB code to simulate and analyse fluid dynamic phenomena, including water wave propagation and scattering.
- Interpret numerical results and draw meaningful conclusions about fluid flow behaviour.

ORGANIZING COMMITTEE

Honorable Patron

Dr. G. Viswanathan, Founder & Chancellor

Chief Patrons

Mr. 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

Patrons

Dr. V. S. Kanchana Bhaaskaran
Vice Chancellor

Dr. Partha Sharathi Mallick,
Pro-Vice Chancellor

Dr. T. Jayabarathi, Registrar

Chairman

Dr. K. Karthikeyan, Dean, School of Advanced Sciences

Dr. Khadar Babu SK, HoD, Department of Mathematics

Coordinators:

Dr. T. Poornima, Department of Mathematics, SAS

Dr. Abhishek Das, Department of Mathematics, SAS

Dr. Sunanda Saha, Centre for Clean Environment

WHO CAN APPLY?

The course is open to all undergraduates, postgraduates, research scholars, faculty members and representatives from industry.

COURSE FEE

Registration Fee: Rs.200/- (including GST)

E-Certificates, Course material, and project ideas will be provided.

ONLINE REGISTRATION & PAYMENT LINK

Link: <https://events.vit.ac.in/>

or
Scan the QR code



LAST DATE FOR REGISTRATION:

18 January 2026

CONTACT:

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Dr. Abhishek Das - 9864103203,

email: abhishek.das@vit.ac.in

INVITED SPEAKERS



Prof. Yury Stepanyants
University of Southern
Queensland, Australia



Dr Sivaraj R
Dr B R Ambedkar National
Institute of Technology Jalandhar,
India



Dr. Anirban Majumdar
Indian Institute Of Information
Technology, Design &
Manufacturing, Kurnool, India

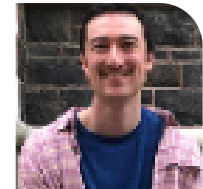
Prof. Chia-Cheng Tsai
National Taiwan Ocean University,
Taiwan



Dr. Santu Das
Institute of Advanced Study in
Science and Technology
Guwahati, India



Dr. Gautam Singh
National Institute of Technology,
Tiruchirappalli, India



Dr. Ben Wilks
University of South Australia,
Australia



Dr. Santanu Koley
Birla Institute of Technology &
Science, Pilani Hyderabad, India



Dr. Kottala Panduranga
Vellore Institute of Technology,
Andhra Pradesh, India

Dr. Harekrushna Behera
National Taiwan Ocean University,
Taiwan



Dr.Sathish Kumar A
Indian Institute of Technology
Madras, India



Dr. Ayan Chanda
Birla Institute of Technology
Mesra, India



Prof. Soumen De
University of Calcutta, India



Dr. Koushik Kanti Barman
Zhejiang University, China



Dr. Kshma Trivedi
Vellore Institute of Technology,
Chennai, India