



VIT[®]

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



Value-added course on Hands on Training on Sophisticated Techniques (VAC1836)

8th December 2025 to 13th February 2026

Organized by
**Department of Chemistry,
School of Advanced Sciences
VIT, Vellore-632 014**

Advisory Committee

Dr. K. Karthikeyan
Dean, School of Advanced Sciences
VIT-Vellore, Tamilnadu – 632 014

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Coordinators

Dr. A. Sheela
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Registration details

Important Dates

Registration Ends: 1st December 2025

Workshop Duration: 8th December 2025 to
13th February 2026 (30 hours)

Registration Fee: ₹500
(inclusive of tax)

**“E-certificates will be provided for the
registered participants”**



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About VIT

VIT was established with the aim of providing quality higher education on par with international standards. It persistently seeks and adopts innovative methods to improve the quality of higher education on a consistent basis. The campus has a cosmopolitan atmosphere with students from all corners of the globe. Experienced and learned teachers are strongly encouraged to nurture the students. In fact, it has become a way of life for us. The highly motivated youngsters on the campus are a constant source of pride. Our Memoranda of Understanding with various international universities are our major strength. They provide for an exchange of students and faculty and encourage joint research projects for the mutual benefit of these universities. Many of our students, who pursue their research projects in foreign universities, bring high quality to their work and esteem to India and have done us proud. With steady steps, we continue our march forward. The path breaking record includes - Engineering and Technology: 142nd in the World and 9th in India (QS Rankings by Subject 2025); Data Science and AI subject areas are within the Top 100 in the world. Computer Science, Information Systems, Electrical, Electronics, Material Science subject areas are within the top 200 in the world (QS 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); 396th in the world and 8th in India (QS Rankings: Sustainability 2025)

About SAS

School of Advanced Sciences (SAS), which was established in the year 1984, comprises Mathematics, Physics, and Chemistry departments. The vision of the school is to provide quality teaching and research that Would make an impact on a global level. The school Consists of a total of 281 experienced and enthusiastic Faculty, which includes 137 in Mathematics, 67 in Physics, and 77 in Chemistry. The global standards set at VIT in the field of teaching and research spur us on in our relentless pursuit of excellence. The school offers the following 2-year MSc programs: MSc Chemistry (Organic / Inorganic / Analytical / Pharma); M.Sc. Physics; M.Sc. Data Science; M.Sc. Business Statistics. It also offers 5-Year Integrated MSc Chemistry; Integrated MSc Physics; Integrated MSc Mathematics; Integrated MSc Computational Statistics and Data Analytics. All three departments of the school have been recognized by DST-FIST and procured a grant for establishing state-of-the-art, sophisticated instrumentation facility. The school offers PhD programs in frontier research areas in physics, chemistry and mathematics. The school has 1174 PhD Scholars, as of 1 September 2025. In addition, the school has well-equipped teaching and research laboratories. The school periodically conducts various events such as conferences, workshops, seminars and symposia on the topics of current relevance.

About Department of Chemistry

The department of chemistry was established during 1984. The vision is to provide quality teaching and research which would make an impact at a global level. It consists of a total of 77 faculty expertise who excel in their chosen field of research, evident from their impactful publications, funded projects, industry consultancy, and patents. It offers 2-year MSc Chemistry program, accredited by Royal Society of Chemistry (RSC-UK), with specialization in Analytical/Inorganic/Organic/General/Pharmaceutical Chemistry and 5-year Integrated MSc Chemistry program. The subject of Chemistry is ranked within the top 10 in India and top 301-350 in the world as per QS World University Rankings, 2025. The Curriculum for Applied Learning (CAL) integrates various project components, such as, outcome-based SET project, study project to aid experiential learning, apart from laboratory training and final semester capstone project. The Department is recognized by DST-FIST and have established Single crystal X-ray diffraction (SC-XRD) facility, in addition to the existing high-end state-of-the-art sophisticated instrumentation facility, necessary to carry out research.

About the course (VAC1836)

In today's fast-paced technology ecosystem, it is essential for students to stay updated with the latest advancements in instrumentation methods. This value added course can provide necessary skills and knowledge in this specific domain. The primary objectives of this course are to provide hands-on training on sophisticated instruments, enabling participants to gain theoretical and practical experience. This can make participants familiarize with the principles, operations, data interpretation, and applications of various instruments. The students will learn how to use various sophisticated instruments such as UV-Visible, NMR, FTIR, SEM, TEM, GC-MS, XRD, HPLC TGA-DSC, Mass Spectroscopy. Faculty expertise from Chemistry Department, VIT Vellore will cover the topics and demonstration. Course outcomes are to enhance skills in operating sophisticated instruments. The course will also add to the employability of participants in various industries. Participants will also be equipped to pursue research as their career path

Topics to be covered

- ☐ UV-Visible Spectroscopy
- ☐ FT-IR Spectroscopy
- ☐ NMR spectroscopy
- ☐ Atomic Absorption Spectroscopy
- ☐ High Performance Liquid Chromatography(HPLC)
- ☐ HRMS/GC-MS
- ☐ X Ray Diffraction (p-XRD/SCXRD)
- ☐ Thermal analysis (TGA/DTA)
- ☐ Electron Microscopy (SEM/TEM)