Department of Chemistry

Department of Chemistry offers M.Sc. Chemistry and Ph.D. Chemistry programmes that provide students and scholars ample opportunities to choose courses or research from a broad spectrum of fundamental and application-oriented topics across all areas of Chemistry, along with offering 11 courses for the UG and PG programmes from other Schools. The chemistry laboratories have advanced analytical instruments and process equipment for project-based hands-on training to the students in fresh water and effluent water analysis, soil testing methods, air pollution studies, etc. This exposure from doing live experiments would enhance the students' understanding about environmental aspects. The department engages research in Organic synthesis, Supramolecular Chemistry, Spectroscopy, Coordination Chemistry, Organometallics, Catalysis, Materials, Nanoscience, Mechanochemistry, Biofuels, Molecular Machines, among many other areas.

Facilities : SAS has well equipped labs with state of the art equipment and facilities that are essential for research and learning in the advancement of the sciences.

Physics Laboratories: The laboratories under the department provides practical experience to students through experiments on fundamental concepts and current technological applications such as Solar cells, Light Emitting Diodes, Optical fibres etc.

Chemistry Laboratories: The chemistry laboratories are equipped with modern analytical instruments, advanced process equipment, a range of special glassware and chemicals. They provide hands-on skill training with systematic analytical competence for the budding engineers, chemists and research scholars. Also, the laboratories support students and research scholars for their chemical testing and analytical needs in research or engineering project works.

Events

SAS is well known for conducting a variety of academic and co-curricular programmes that benefit not just the student community but our faculty and research scholars, and academia at large.

- International Conference : IEEE International Conference on Artificial intelligence and Signal processing(AISP 2020)
- 66th Congress of the Indian Society of Theoretical and Applied Mechanics (ISTAM 2021)
- Workshop/seminar: 22
- Faculty Development Programme: 12
- Industry Guest Lectures : 16
- National/International Guest Lectures: 22

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VIT-AP UNIVERSITY

Apply Knowledge. Improve Life!®

School of Advanced Sciences

http://vitap.ac.in/school-of-advanced-sciences/

About us

The School of Advanced Sciences (SAS) is one of the seven Schools of VIT-AP University and it houses the Departments of Mathematics, Physics, and Chemistry. Here students are taught how to think critically through project-based learning (PBL) and not merely what to think. Students are encouraged to question, explore, and research throughout their studies, ranging across the various discipline of sciences. Our school aims at providing a solid foundation in natural Sciences, projecting the recent scientific and technological developments to the graduate, postgraduate, and PhD students. We aspire to be a valuable contributor towards the nation's growth and development by producing highly skilled professionals and by engaging in cutting-edge research. SAS earnestly pursues a vision of providing local, regional, national and International leadership in the research and technology development. We believe in quality of education and research with ethical and professional standards for better tomorrow. Here, students make their choices based on their preferences and requirements that equips them with a balance of logical-thinking and problem-solving skills which are essential to tackle today & tomorrow's professional challenges.

Programmes Offered:

Dual Degree Programme

B.Sc. & M.Sc. Data Science
(with exit option B.Sc. Data Science)

PG Programme

M. Sc. Data Science
M. Sc. Physics
M. Sc. Chemistry

Ph.D. Programme

Mathematics, Statistics, Physics, Chemistry

http://vitap.ac.in/school-of-advanced-sciences/

Research

Research is at the heart of SAS's vision towards becoming an internationally recognized center of knowledge and learning. The spectrum of research activities at SAS is extensive and distinct. Our faculty and scholars are keen not just to find technological solutions to problems but also to expand human knowledge and understanding.

Currently, the school has over 65 Research Scholars pursuing a Ph.D. degree along with monthly financial assistance. The faculty members have contributed to academic research publishing and have successfully published research papers in over 123 journals and book chapters. SAS encourages faculties for collaborative research with faculties from foreign universities and presents their findings on international platforms.

The school has 28 registered faculties under the Research Grant in Engineering, Management, and Science (RGEMS), an initiative to motivate research that can lead to R&D projects. Undergraduate Research (URE) pursuits are encouraged by the school as well. In collaboration with the faculty, undergraduate students pursue active interdisciplinary research to make intellectual or creative contribution towards advancing Science.

SAS Highlights:

1. **SAS inks Academic & Research MoU with CSIR-IICT**
2. **SAS inks Industrial MoU with Mitsui Kinzoku Components India Private Limited (MKCI)**
3. **Ongoing 2 External Funded Projects by DST, India**
4. **14 Indian Patents publications by faculty and students of SAS**
5. **123 research publications by faculty and students of SAS**
6. **UG/PG students are working on many innovative projects/research**
7. **Reputed faculty members with Ph.D./Post.Doc qualification.**

Invited Lectures by The School Faculty

More than 15 faculty from SAS have delivered invited lectures at international venues such as: University of Mons, Belgium; University of Split, Croatia; TESOL Asia, Kyoto, Japan; University of Malta, Greece; HELICS Group Scientific Networks, San Diego, CA, USA; ALLIED Academics, Bangkok, Thailand; University of Belgrade, Belgrade; University of London; Women's University, Seoul; University Catholic de , Louvain, Belgium; IMPACT, Dubai, UAE; Max Plank Institute, Germany etc.

Department of Mathematics

Department of Mathematics offers two programmes: Dual Degree Programme B.Sc. & M.Sc. Data Science (with exit option B.Sc. Data Science) and M.Sc. Data Science. The department further offers, more than 40 different courses for UG and PG programmes from other Schools. Courses in Mathematics are taught by incorporating technology into classroom teaching using a right blend of traditional teaching tools and computer algebra systems (CAS) such as MATLAB and R Programming. Use of MATLAB in teaching-learning process establishes Student-centric learning environment where the students are taught Mathematics through experimentation, visualisation and discovery. Further, the department specializes in the following research areas:

Nonlinear Dynamical System, Modelling of Memory Devices, Integral Transform, Operator Theory, Hydrodynamics Stability, Thermal Convection, Elasto Hydrodynamic, Algebraic Coding Theory, Cryptography, Fractal, MHD Boundary Layers, Perturbation Methods, Stochastic Differential Equation, Approximation Using Linear Positive Operators, Fluid Dynamics, Nonlinear Mathematical Programming Problem, Solute Transport Modelling, Cosmology, Optimization Techniques, Graph Theory, Numerical Analysis, Number Theory, Statistics, Mathematical control theory, Natural language processing, Machine Learning, WEB-Spline based mesh free method, fractional order partial differential equations and more.

Department of Physics

Department of Physics offers an M.Sc. programme with specialization in frontline areas of modern day technology. Further, the department provides more than 15 different courses for UG and PG programmes from other Schools. The passion for basic and engineering sciences that stem from Physics are favoured by the students. The students devote practical hours at the labs sedimenting their basics in physics, and upgrading their knowledge on latest technologies.

The department is actively engaged in research in the following fields: Nanomaterials, Transparent Conducting Materials for Optoelectronic Applications, Photovoltaics, Sensors, Composite Materials, Coatings, Condensed Matter and Biological Physics, Quantum Transport in Nano system, Magnetic materials, Multiferroics.