

IISER THIRUVANANTHAPURAM

PLACEMENT BROCHURE

2024-25



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FROM THE **DIRECTOR'S DESK**

Prof. J. N. Moorthy

The Indian Institute of Science Education and Research Thiruvananthapuram (IISER TVM) was founded in 2008. Within the last fourteen years since its inception, it has risen to establish itself as one of the premier institutes in our country. IISER TVM is dedicated to scientific research and science education, at par with the best national and global institutions. At present, it has well over 1700 students enrolled in the BS-MS dual degree, M.Sc., PhD and Integrated PhD programs. Every year, about 200 students graduate with our flagship BS-MS degrees, in addition to several graduating with M.Sc. and PhD degrees.

Our students receive hands-on training in state-of-the-art labs and research facilities established on our campus. They are taught by faculty with several years of wide-ranging experience in advanced research and are recipients of prestigious international and national awards. Through our global research networks and collaborations, our students remain connected with recent advances and trends in their fields of study and are abreast of developments across the globe. The structured curriculum and comprehensive training that our students receive prepare them for the ever-evolving complexities and challenges of the 21st century.

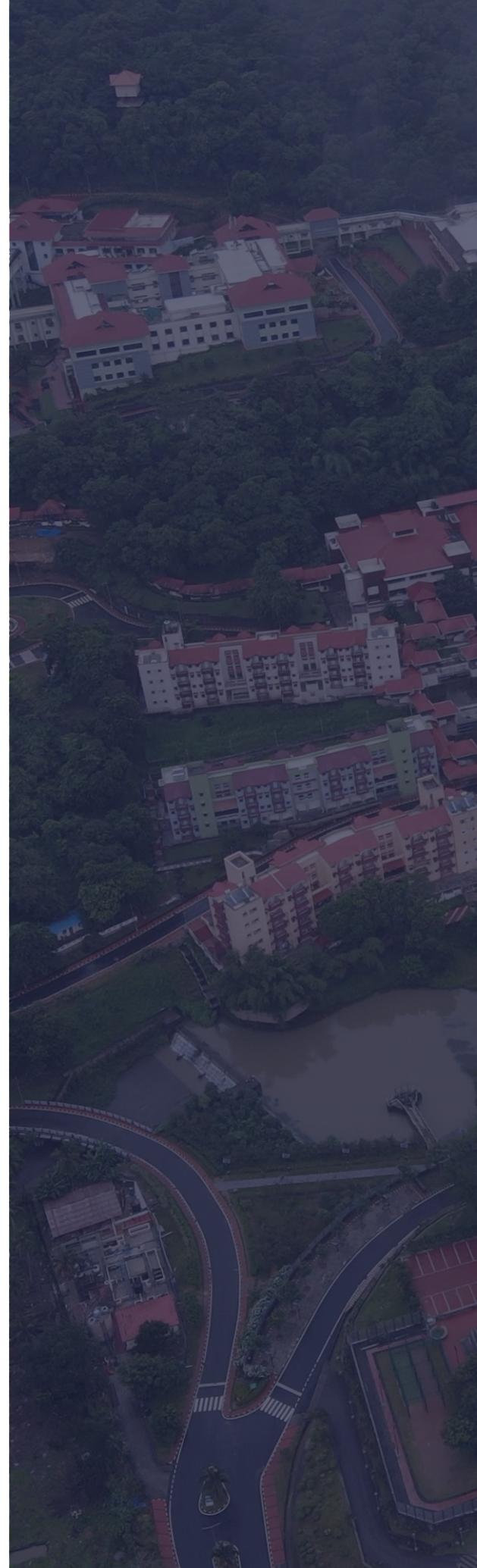
It is true that a significant percentage of our students stay in academics, pursuing advanced academic research in the best universities spread across the United States of America and much of Europe. The institute is blessed with a large pool of talented young, enthusiastic and well-trained graduate students who are eager and committed to accepting opportunities that the corporate world, industry, commercial research organizations, start-ups, and others have on offer. This Brochure provides an overview of our academic programs, research at IISER TVM, our research facilities, student and faculty achievements and information about placement procedures. I invite you to our campus to experience our research and teaching facilities first-hand and interact with our faculty and students. IISER TVM is nestled in the foothills of the Ponmudi hills and is by far one of the most picturesque campuses in India. We will be pleased to host you and provide the necessary logistic support for pre-placement talks/meetings/interactions with our students during the placement process.

THE INSTITUTE

The Indian Institute of Science Education and Research Thiruvananthapuram (IISER TVM) – established in 2008 as an autonomous academic institute under the Ministry of Education, Government of India – belongs to the elite cluster of “Institutes of National Importance” established by the Government of India. IISER TVM was founded in the Kerala state of Southern India with a vision to impart higher quality education integrated with outstanding research at the undergraduate level itself. The state-of-the-art research facilities provide an excellent research environment in pure and interdisciplinary sciences, developing a spirit of inquiry across disciplines.

In the span of 15 years, the Institute has grown in prominence and has constantly endeavoured to set higher benchmarks for excellence in teaching and research. The highly competent faculties are engaged in research collaborations with national and international academic institutes, creating opportunities for students to interact with and learn from leading researchers and scientists.

Admission to the Institute is highly competitive and is based on a rigorous selection procedure (national-level competitive examinations and interviews). The institute admits the crème de la crème to its programs. The brightest of India’s young talent work their way into our campus and go through a highly rigorous and future-ready curriculum. The students capitalize on the various opportunities offered (seminars, internships, lectures and talks by eminent faculty, peer-group interactions) to hone their talents and skills and emerge as placement-worthy, enthusiastic, and committed individuals ready to meet the ever-growing diversity of the academic and non-academic job market.





WHY RECRUIT FROM US ?

Academic Excellence:

Graduates with exceptional calibre, equipped with a comprehensive understanding of core scientific principles and methodologies.

Cutting-Edge Research Environment:

The state-of-the-art facilities and distinguished faculty members engage in pioneering research across a spectrum of disciplines, providing students with unparalleled opportunities to delve into frontier areas of science.

Interdisciplinary Ingenuity:

We foster interdisciplinary collaboration and thinking among our students, encouraging them to transcend disciplinary boundaries and approach complex challenges from diverse perspectives.

Proven Track Record:

Many of our alums have made significant contributions to academia, industry, research institutions, and government bodies, serving as exemplary ambassadors of our institution's excellence.

Industry Engagement and Collaboration:

We actively foster partnerships and collaborations with industry stakeholders, providing students with exposure to real-world challenges and opportunities for industry-relevant projects and internships.

Leadership and Soft Skills Development:

We prioritize the holistic development of our students, nurturing their leadership potential and enhancing their soft skills such as communication, teamwork, and adaptability.

Ethical Integrity and Social Responsibility:

We instil in our students a strong sense of ethical integrity and a commitment to using their knowledge and skills for the betterment of society, thus fostering responsible citizenship and contributing positively to the communities they serve.

ACADEMIC PROGRAMS

BS-MS Dual Degree

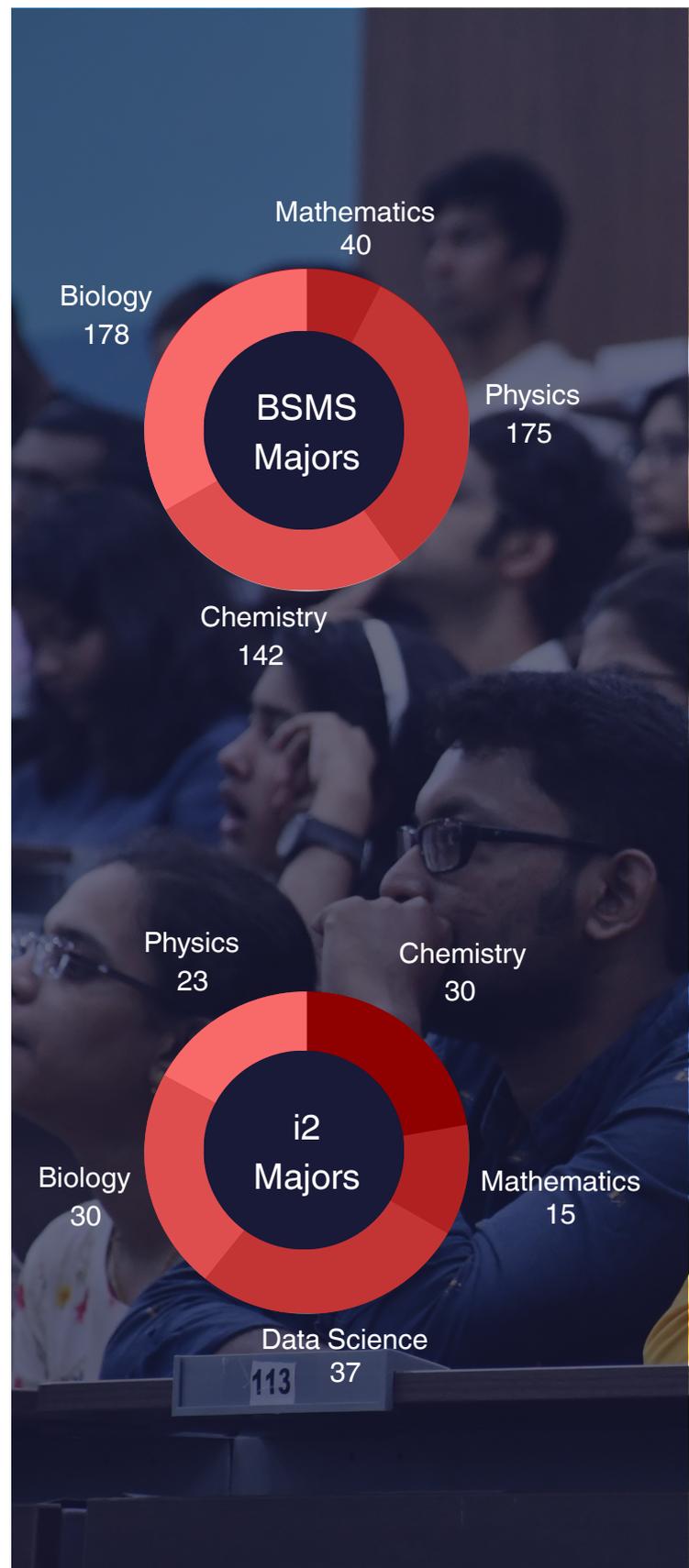
BS-MS is a five-year program aiming to integrate the conventional bachelor's and master's degrees with research. The first two years of the BS-MS programme consist of foundation courses common to all students. Third and fourth-year courses specialize in a major (Biology, Chemistry, Mathematics or Physics) and one or more minors OR in i^2 Sc disciplines (Biology, Chemistry, Mathematics, Physics or Data Science). The fifth year is devoted to thesis research.

The Integrated and Interdisciplinary Sciences (i^2 Sc) programme is the first in India and was launched by IISER TVM. The course structure is designed with courses specific to industrial relevance and promoting students to do projects in industries, R&D laboratories, and academia.

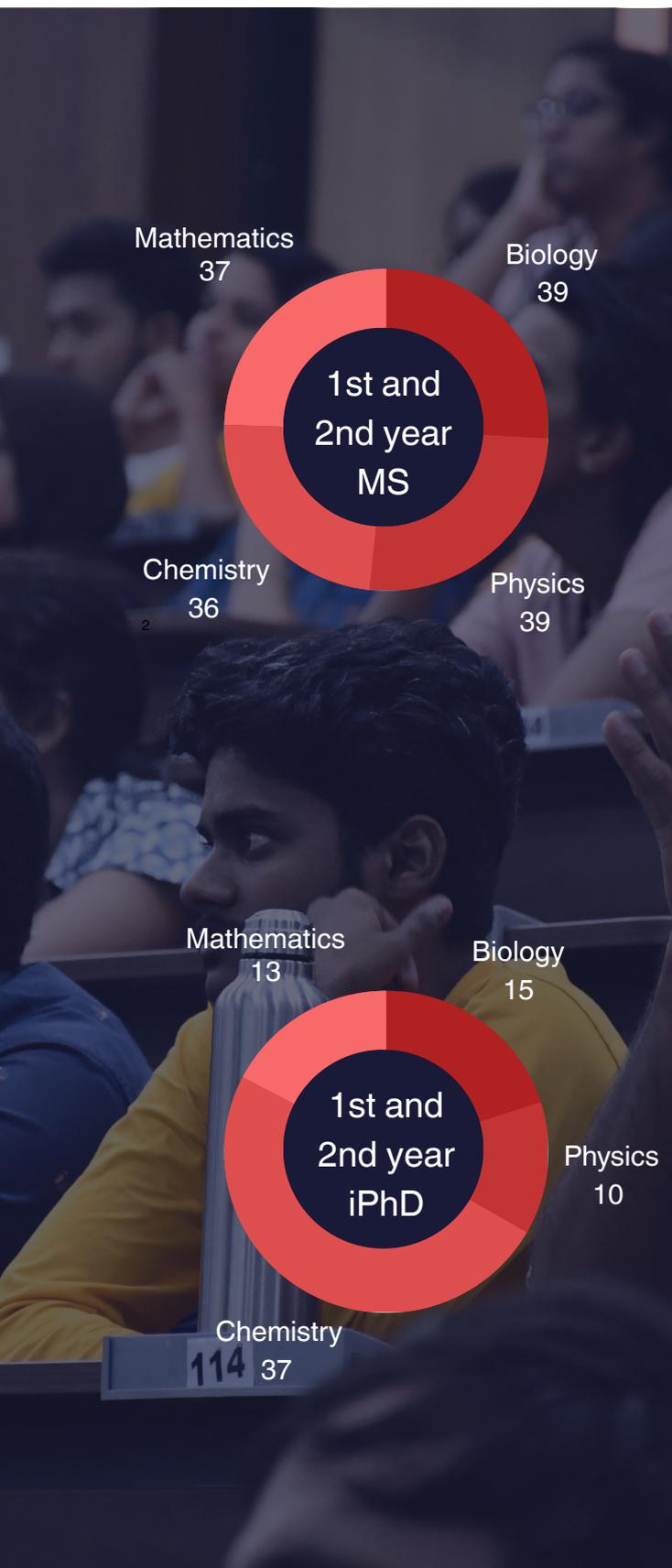
PhD Degree

The PhD program at IISER TVM is in Biological Sciences, Chemical Sciences, Mathematical Sciences, Physical Sciences and Interdisciplinary areas. The Institute admitted its first batch of doctoral students in August 2009 and currently has over 300 PhD researchers on its rolls. The Institute hosts modern research facilities necessary to conduct scientific research in the 21st Century.

PhD scholars are supported by various scholarships and schemes to conduct their research. Around 40 scholars are currently the recipients of the coveted PMRF.



ACADEMIC PROGRAMS



MS Degree

Master of Science (MS) is a two-year program positioned in a manner that bridges the flagship, five-year BS-MS program of the Institute with the PhD programme. The MS program extends the training in science set in a vibrant research environment that is the signature of IISERs to bright undergraduate students selected competitively from across the country. Master of Science (MS) is awarded in one subject (Biology, Chemistry, Mathematics or Physics).

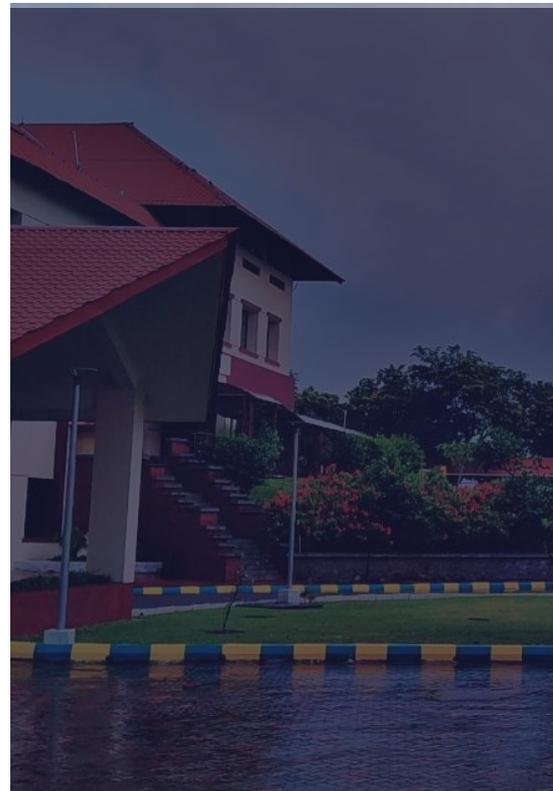
The program consists of three semesters of coursework with core and elective courses in the subject of choice, along with thesis research in the fourth semester. Since its inception in 2021, over 150 candidates have enrolled in the programme.

IPhD Degree

The Integrated PhD program is a research program. At the end of the successful completion, Master of Science and PhD degrees are awarded. The first three semesters consist of core and elective courses specialized in one subject (Biology, Chemistry, Mathematics or Physics). The fourth semester will consist of advanced courses and project work. After the successful completion of comprehensive and project work, the student will continue with research leading to the PhD degree. The Institute currently has over 190 PhD students on its rolls.

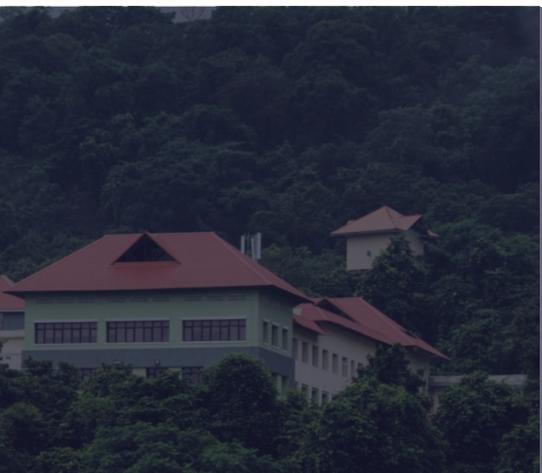
SCHOOL OF CHEMISTRY

The School of Chemistry at IISER Thiruvananthapuram fosters a dynamic academic and research environment, attracting a diverse group of undergraduate, postgraduate, PhD, and short-term project students. Research encompasses a broad spectrum of Chemistry, including Inorganic, Organic, Physical, and Theoretical areas. Faculty actively pursue research in various new fields, such as Inorganic and Organometallic chemistry, Synthetic Organic Chemistry, and DNA Nanotechnology. The department boasts state-of-the-art experimental facilities, including high-field NMR Spectrometers, X-ray Diffractometers, Electron Microscopes, Spectrometers, Femtosecond Transient Absorption and Fluorescence, Nanosecond Transient Absorption, Picosecond Fluorescence, Differential Scanning Calorimetry, Thermogravimetric Analyser, and many more Advanced Analytical Instruments. Additionally, robust computational resources support theoretical and computational chemistry endeavours. This exceptional combination of academic expertise, cutting-edge equipment, and computational power positions the School of Chemistry of IISER Thiruvananthapuram as a leading centre for groundbreaking research and intellectual exploration.



SCHOOL OF BIOLOGY

At the School of Biology, IISER Thiruvananthapuram, we conduct state-of-the-art research across all levels of biological organization—from molecules to ecosystems. Twenty-first-century Biology is interdisciplinary and often involves other stem disciplines. Our rigorous academic program trains students to perform interdisciplinary and independent research transcending the boundaries of traditional biology. With our excellent faculty harbouring a deep commitment towards education and state-of-the-art research facilities, we provide a world-class education to our students that facilitates them with biological lab training, communication skills, critical thinking and scientific knowledge.



SCHOOL OF PHYSICS



Explore the dynamic landscape of scientific inquiry at the School of Physics, IISER Thiruvananthapuram. With a diverse array of research directions encompassing Condensed Matter Theory and Experiment, Light-Matter interaction, Optics, High-Energy Physics, Gravitational Physics, String theory, Complex systems, Quantum Technologies, Energy Storage and production, and Astronomy and astrophysics, our esteemed faculty drives innovation at every turn. Through cutting-edge projects and international collaborations, students delve into multidisciplinary realms. Equipped with state-of-the-art laboratories and a commitment to excellence, our school nurtures the next generation of physicists poised to contribute profoundly to fundamental understanding and technological advancement.

The school attracts many national and international extramural grants and has benefited from founding world-class laboratories to do frontline research in fundamental and applied Physics. International collaborations have been established through various funding agencies or by entering a memorandum of understanding.

SCHOOL OF MATHEMATICS

Discover a vibrant hub of mathematical exploration at our School of Mathematics. Our esteemed faculty are engaged in cutting-edge research across diverse realms like Algebra, Analysis, Computational and Applied Mathematics and Mathematical Finance. Through international collaborations and advanced facilities, including those for imaging and biochemical experiments, our students delve into practical applications of the subject. Students are trained in Mathematical Modelling, Scientific Computing, High-Performance Computing and Machine Learning, among other core subjects like Linear Algebra, PDE, Probability and Statistics. This equips them to handle complex real-world problems with confidence.



SCHOOL OF **DATA SCIENCE**

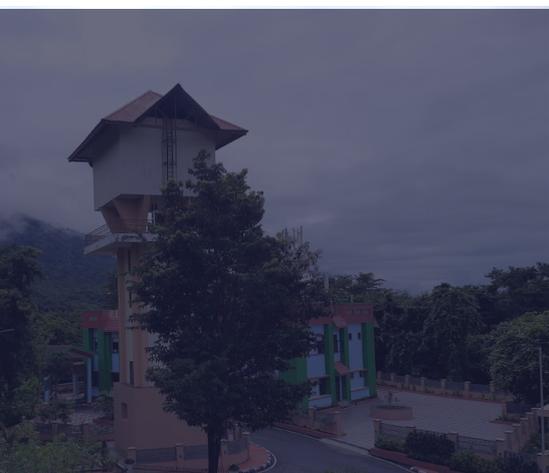
Embark on a transformative journey into the dynamic field of data science at our institution. Our 5-Year Data Sciences Program is meticulously designed to cultivate professionals with the skills to decipher the intricacies of natural sciences through data analytics. The program shapes competent, creative, and imaginative data scientists. With a focus on hands-on training in real-time projects, the curriculum spans core areas such as Mathematics, Data Science, and Computer Science. From Mathematical Statistics and Machine Learning to Advanced Data Structures and Artificial Intelligence, our courses equip graduates to comprehend and analyze large datasets.

In an era where science, technology, and social dynamics are increasingly data-driven, our graduates emerge well-prepared to unravel complexities and push scientific frontiers. Join us in shaping the future of data sciences, where mathematical precision and computational expertise converge to create a lasting impact.



SCHOOL OF **EARTH, ENVIRONMENT & SUSTAINIBILITY SCIENCES**

The School of Earth, Environmental, and Sustainability Sciences is an academic institution dedicated to studying and understanding the complex interactions between the Earth's systems and the human environment, focusing on promoting sustainability. Through interdisciplinary research and education, the school explores topics such as climate change, natural resource management, environmental conservation, sustainable development, and the impacts of human activities on the planet. Its mission is to train future leaders and professionals equipped with the knowledge and skills needed to address the environmental challenges facing our world today and in the future.



CAMRIE

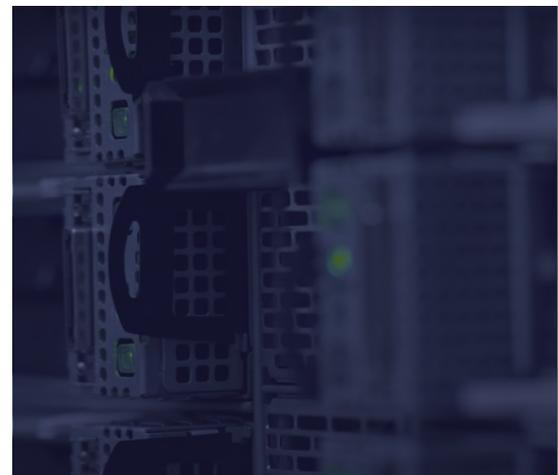


The Centre for Advanced Materials Research with International Engagement, CAMRIE, at IISER Thiruvananthapuram is one among its many initiatives to leverage the expertise and knowledge of the existing faculty members across the disciplines for solving emerging scientific challenges of a bigger nature in advanced materials research, in collaboration with global researchers. Stationed at IISER TVM, the Centre is meant to foster international engagement and networking for cutting-edge interdisciplinary research. Currently, 21 faculty members from various disciplines are associated with the Centre. PhD students with different backgrounds – including science, engineering, medicine, etc.- with a true sense of interdisciplinary nature are planned to be admitted. The PhD students registered in the Centre will be engaged in exchange visits with the international partnering institutes to allow for a broad research perspective, an immersive research experience and exposure to different cultures. The Centre shall be committed to cutting-edge research in the frontier areas of advanced materials, leading to high-impact research papers and technology translation.

CENTRE FOR HIGH PERFORMANCE COMPUTING

The Center for High-Performance Computing (Center for HPC) is an interdisciplinary core facility for scientific computing and research on parallel algorithms at IISER-TVM. It is a multi-disciplinary research centre based on High Performance Computing (HPC), and the main aim is to pursue cutting-edge research in all areas of science and technology.

The Padmanabha cluster comprises a CPU cluster with over 88 nodes and 3 GPU nodes. The total system memory per node is 128 GB. Students are trained to use parallel programming to solve complex problems effectively.



STUDENT ACTIVITIES

Most of the cultural activities on the campus are hosted by the **Cultural Council** of IISER Thiruvananthapuram, a student-run club where all culture, arts and humanities enthusiasts come together to share ideas, host competitions, organize performances and talks and much more. Alongside the **Students' Welfare Council**, the Cultural Council organizes many charitable events to benefit the local community.

Our teams also participate in cultural fests organized by other institutes in India, such as the **Inter IISER Cultural Meet (IICM)**, when all the leading research institutes of India come together. IISER TVM hosted the 2019 editions of IICM.

ISHYA, the cultural fest of IISER TVM, is hosted once a year in the Vasanth semester. The whole campus comes alive with music, dance and drama, fashion shows, poetry recitation, debating competitions, and many more such activities.



We have a **Science and Technology Council** run by students which organizes many exciting activities such as hackathons, stargazing sessions (under astronomy club-**PARSEC**), bird-watching sessions (by the **Ecological Society of IISER**) and many more such thrilling activities.

Also, there are four departmental clubs under each of the schools, namely, **PSIT** (Physics Society of IISER TVM), **CSIT** (Chemical Society of IISER TVM), **CMIT** (Club of Mathematics IISER TVM) and **Proteus** (Biology Club of IISER TVM). The students take part as active volunteers and help host workshops, seminars and competitions.

Anvesha, the official Science Fest of the Institute, is an elaborate event that includes not just the IISER Community but students from schools and colleges across the district and its neighbouring districts. It's the place to experience science and participate in the Science Expo and exciting science games and competitions, which include crime scene investigation, treasure hunt, scientific writing, coding, quizzes, etc.

STUDENT ACTIVITIES



The Sports Council of IISER Thiruvananthapuram hosts and organizes all the sports-related activities on the campus, from maintaining the sports facilities to organizing the **Annual Sports Fest of the Institute (ITSAV)**. The **Inter IISER Sports Meet (IISM)** brings all sports enthusiasts onto the field to compete, have fun and play good sports. The excitement, frenzy, adrenalin rush, sense of belonging and team spirit that these two sporting events evoke are overwhelming. IISER TVM hosted the 2023 editions of IISM.

Sports facilities for athletics, badminton, basketball, cricket, football, volleyball, kho-kho, futsal, carom, chess, and table tennis dot the campus. They are tuned for recreational and competitive sports and sporting events.

The athletics team of IISER TVM has always been its core strength. Our athletes have won many medals in various marathons organized in the Thiruvananthapuram district and IISM.

The Student Welfare Council of IISER TVM is a student-run organization that helps maintain discipline on the campus and provides interested volunteers for all outreach and charitable activities. Initiatives like **Karuna** (welfare for the animals on the campus) and **Prayati** (blood donation camps).

The Students' Co-operative Mess of IISER TVM is a student-run non-profit organization, functioning for over 10 years, which aims to ensure healthy and hygienic food is served to the student community at affordable student-friendly rates, along with the plan menus, hiring staff, supervise the dining halls and the i-cafes, take care of the expenses (planning and storage), and maintain hygiene.

IISER TVM implements several social outreach activities through **IISER TVM CARE** (Collective Action for Rural Empowerment), in alignment with the **Unnat Bharat Abhiyan** program of the Government of India and welfare activities under the banner of **Ek Bharat Shreshth Bharat** with the help from the student community.



PLACEMENT PROCEDURE

1

PCPC sends out the invitations.

Interested companies register on the PCPC website.

2

3

Verified student **CV** submission, accessible to recruiting.

Campus Engagement through Pre-placement meetings, talks, & workshops.

4

5

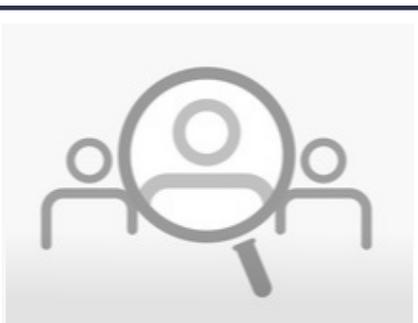
Screening through Online or Written tests and Interviews.

Final Placement

6

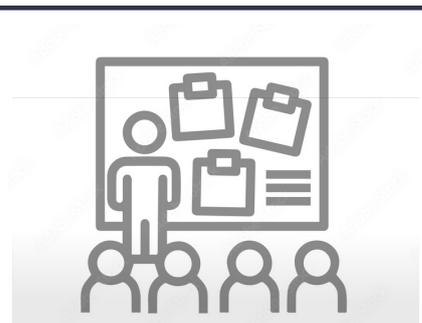


ENGAGING WITH **STUDENTS**



Recruitment Drives

Facilitating on-campus or virtual recruitment drives.



Lectures or Workshops

Organizing sessions for industry professionals to deliver focused lectures.



Internship Programs

Offering opportunities for summer internships and final-year project internships.



Scholarships

Support and motivation for meritorious and deserving students of the Institute.



MoUs

IISER TVM promotes R&D and the exchange of scientific knowledge through formal agreements and relationships with paramount institutes and corporations around the world, aiming to benefit both signatories.



ALUMNI REACH



CONTACT US

Mr Ashkar K.

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