

Master of Science (MSc) Program (2021 - 2022)



About IISER TVM

Founded in 2008, the Indian Institute of Science Education and Research Thiruvananthapuram (IISER TVM) is dedicated to scientific research and science education. Traditionally, teaching has been segregated from research in undergraduate science curricula in India, and the IISERs were established by the Government of India, to bridge this dichotomy. The Institute aims to provide high quality education in modern science, integrating it with outstanding research and to develop a spirit of enquiry cutting across disciplines. IISER TVM is an autonomous institution offering five-year BS-MS, \mathcal{I}^2 Sciences, Integrated Ph. D. and Ph.D. programmes.

Situated in a lush green campus cradled by the mighty Western Ghats, the Institute presents itself as an ideal platform with an awesome ambience for innovation and cross pollination of ideas and knowledge. The faculty members of the Institute are the alumni of the most prestigious institutions across the world, who are devoted to research and dedicated to educate as well as train students in the frontier areas of basic and applied sciences. The reputed faculty fraternity and the vibrant student community are supported by a team of constructive administrative staff, ensuring that the Institute makes significant advancements in research and education.

Master of Science (MSc) Program

Introduction

The newly-conceptualized 2-Year Master of Science (MSc) program is positioned in a manner that it bridges the Institute's flagship, 5-Year BS-MS programs and the PhD program. It has been curated in the spirit of the National Education Policy (NEP 2020) that envisages flexible and diverse academic programs in higher education, allowing students to enter and exit each program at various levels with commensurate credentials. The MSc program is envisaged to impart training in basic and applied sciences, in the vibrant research environment of IISER TVM, to bright undergraduate students selected competitively from across the country. The MSc program is also expected to feed into the PhD program of the Institute while encouraging the students to take up further studies that lead to a career in scientific research, development, innovation, and teaching.

The MSc program is offered in the 4 basic sciences, with ample scope of both diversification and specialization via a wide array of available electives, integrated with a research project in the second year. Each of the four streams offers a unique, yet integrated paradigm to gain analytic and cognitive skills based on an interdisciplinary curriculum and training in research.

MSc Biological Sciences

MSc Chemical Sciences

MSc Mathematical Sciences

MSc Physical Sciences






National Eligibility Tests

The curriculum covers adequate material to prepare the students for national eligibility tests such as CSIR-NET, UGC-NET, JGEEBILS, JEST, NBHM, etc. to pursue doctoral programs in India and worldwide.

Internships and Research Projects

Internships and research projects constitute an integral part of the program. The final year research project may be conducted in partnership with national and international R&D laboratories.

Overall, the program offers each individual ample scope for tailoring one's interests to pursue education aligned towards one's own career goals. It will allow one to integrate and sharpen one's skills through interactions and experimentation, and showcase capability for innovation and creativity.

	Course Code	MSQ
	Duration	2 Years
	Entrance	National Level Eligibility Tests IISER TVM Entrance Test
	Contact	+91 471 277 8007
	Number of Seats	20 (in each discipline)

Overall Course Structure

The curriculum of the MSc programs at IISER - TVM provides training in the fundamentals of natural science. The first two semesters are devoted for courses to train oneself in a core discipline. Progressively, students are encouraged to choose electives both within their discipline and outside to engineer their specialisation as well as gain knowledge in interdisciplinary topics to broaden their subject knowledge and skill sets. MSc students can choose from many electives which are on offer; which run in parallel with the general and \neq Sciences BS-MS programs of the Institute.

Each student undertakes a research project as a part of his/her course during their third and/or fourth semester to get hands-on experience of research.

Semesters 1 & 2	
Core Courses	Courses in the core discipline
Elective Courses	Elective courses in core discipline and associated areas The elective courses are uniquely designed to impart advanced level education with interdisciplinary content and practical training.

Semesters 3 & 4	
Core Courses	Courses in the core discipline
Elective Courses	Courses allied to the core disciplines and open electives to gain interdisciplinary or multidisciplinary knowledge
Research	Independent research project that may be optionally spread over 2 semesters

Each academic year at IISER TVM is divided into 2 semesters (Varsha and Vasant) interspersed by the summer and winter breaks. Semesters 1 and 2 primarily comprise **Core Courses** in the core discipline, i.e. biology, chemistry, mathematics or physics and **Elective Courses**. Ample opportunities are offered in 2nd, 3rd and 4th semesters to personalize one's own unique learning experience by way of elective courses, which provide further expertise in niche areas.

Each student will have the option of accumulating the 12 mandatory project credits in two ways:

1. Register for a 3 credit project course (Phase I) during the 3rd semester and then follow it up by registering for a 9 credit project course (Phase II) during the 4th (even) semester. This option is conditional upon a faculty member from the respective school agreeing to guide the student for the year-long project.

2. Register for the 12-credit project course during the 4th semester leading to a short (one semester-long) project.

The year-long project option involves registering for the 3rd semester project course replacing an elective. The elective credits not registered for in the 3rd semester must be earned back in the 4th semester. Each designated project course that the student registers for will be evaluated independently. This independent research project, optionally spread over semesters 3 and 4 allows one to apply one's training to tackle real problems in basic and applied science. Beyond the academic and technical expertise, opportunities exist to gain essential experience in communication and presentation skills, and teamwork.

Degree requirements

1. Each student must acquire a minimum of 66 credits with a cumulative grade point average (CGPA) of 5.0 or higher for graduating from the MSc program.
2. All courses designated as CORE by the respective schools must be successfully completed.
3. Successful completion of 12 research project credits.
4. No disciplinary action must be pending against the student.

General Credit Structure

Courses/Project	Credits
Core Courses	42 - 48
Elective Courses	12 - 16
Research Project	12
Total	66 - 70

Note: Minimum credit requirement and semester-wise division of courses between Core and Electives vary between the four streams. Each stream requires up to two electives to be mandatorily taken from the same subject while the remaining may be chosen from among the open electives offered by the other schools, bringing in flexibility and interdisciplinarity into the MSc course structure.