

Indian Institute of Space Science and Technology

Trivandrum

Best Practice: **ISRO – the live laboratory of IIST students.**

Objectives Enhance Practical skills and knowledge in cutting-edge technologies at ISRO, complementing their theoretical knowledge.

Research and Innovation: Equip students with research skills in innovative research and development activities contributing to the space missions of ISRO.

Collaborative network with ISRO scientists and engineers

Development of problem-solving abilities and working with complex and multidisciplinary problems related to space activities

Cultivating professional ethics and standards at a younger age. Talent nurturing: helps identify and nurture talents through the mentorship of ISRO scientists and develop their potential to become future leaders of the space industry .

The context that required the initiation of the practice:

As a premier institution dedicated to nurturing the next generation of space scientists and engineers, IIST emphasizes the importance of practical experience and theoretical knowledge. Being an autonomous body under the Department of Space, IIST has unique access to ISRO entities. The various entities in ISRO, India's apex space research organization, serve as perfect laboratories for enhancing practical knowledge. Taking full advantage of this opportunity, IIST initiated internships and projects for IIST students in ISRO entities. This practical experience bridges the gap between academic knowledge and industrial application, preparing students for a successful professional career.

The Practice

The UG internship program offers diverse interdisciplinary topics sourced from all departments and ISRO centres through the Internship Planning and Coordination Committee. Students select available topics based on their interests and collaborate with faculty members. They work in real-time laboratories for the execution of the projects/ internships. Each student is assigned an industry supervisor and an internal supervisor from their department. Students work closely with both supervisors to develop a solution methodology, maintaining continuous communication throughout the internship. Students must summarize their findings and present the outcomes before the assessment panel; their grades are assigned based on their performance. This process ensures that

students gain practical experience, understand industrial challenges, and apply their theoretical knowledge, preparing them for successful careers in their respective fields.

Evidence of Success- Impact of the Practice

These internships and projects of IIST students in ISRO entities have yielded significant success and positive impact. The students who have done internships and projects have been associated with innovative research and recognized through publications in reputed journals and conferences. Their work has addressed critical areas such as propulsion systems, satellite communication, remote sensing, and space exploration technologies. This unique experience has significantly enhanced the employability of IIST graduates who have secured prominent positions within ISRO and other leading aerospace organizations in India and internationally. Their ability to apply practical skills and knowledge gained through ISRO internships and projects have made them highly sought-after graduates by the industries. Most graduates can join as Scientists/engineers in their areas of interest. Around 1316 IIST graduates have been absorbed into ISRO centers/Units till the reporting period