

IITK-RISE Winter Internship 2025

Application Guide for Students

Program Overview

RISE @ IITK is a research internship program aimed at giving meritorious foreign students an opportunity to work closely with an IITK faculty.

The program has two modules – a 4-week virtual winter internship starting December 2025 and a 6-8 week in-person summer internship between May-July 2026.

For the virtual winter internship, a list of available projects from IITK faculty (along with eligibility criteria and other details) can be seen at the end of this guide. Students can apply to the projects aligning with their interest by filling the application form.

Students who successfully complete the winter virtual internship 2025 will be given preference for the summer offline internship selection in 2026.

Duration of the IITK-RISE Winter Internship 2025: For 4 weeks, starting December 2025

Support

For this online internship, students will not receive a stipend. Students will have to make sure that they have access to high-speed internet to enable virtual meetings with the IITK faculty.

Eligibility

- Applicants should be non-Indian nationals
- Must be enrolled in a bachelors or masters program at their Home University
- Students should have at least one semester left in their study after the internship at IITK
- Have a strong academic record and an interest in research
- Meet the requirements of the chosen project, as mentioned in the project list
- Should be comfortable with the English language

Application Procedure

Students will apply to this program only through the online application form (<https://forms.gle/EkaepArGkW7mZiAB8>). Once the form is submitted, no changes can be made, so make sure to review carefully before submitting.

Please note that each student should only apply once. Multiple applications will be rejected.

Students can apply to a maximum of two (2) projects.

Documents Students will Submit During Application

1. Statement of Purpose (400 words max) that mentions your research interests and your motivation for participating in this internship
2. Updated CV (in no particular format)
3. Official academic records/transcripts from Home University (translated into English, if applicable)

4. Proof of nationality
5. Letter of recommendation (LOR) from a faculty/supervisor at the Home Institution/University. Should the faculty wish to email the LOR directly to us, they may do so by sending an email to oir@iitk.ac.in
6. Passport size photo

Students will be selected by the faculty based on the documents submitted (see list under ‘Application Procedure’). Faculty may also choose to schedule video interviews or any additional screening method.

After the completion of the winter internship, based on the feedback (satisfactory/unsatisfactory) from the faculty, students will be given certificates of completion by the Office of International Relations at IITK.

Key Dates

Application Opens: 1 October 2025

Application Deadline: 19 October 2025 (5 p.m. IST)

Notification of Result: By the second week of November

Contact

For any queries, please reach out to Ms. Perna Gupta at oir@iitk.ac.in

Important Links

IIT Kanpur website: <https://iitk.ac.in/>

Office of International Relations, IITK website: <https://iitk.ac.in/oir/>

IITK-RISE Internship Program: <https://www.iitk.ac.in/oir/iitk-rise>

IITK-RISE Winter Internship Application Form: <https://forms.gle/EkaepArGkW7mZiAB8>

IITK-RISE WINTER INTERNSHIP 2025 - List of Available Projects

Faculty Name	Department Affiliation	Faculty Webpage	Research Project/Area/Group	Description of research project/area/group	Who can apply	Additional requirements for applicants (degree/knowledge/skill)
Prof. Dipak kumar Giri	Aerospace Engineering	https://www.iitk.ac.in/new/dipak-kumar-giri	Spacecraft/Satellite/Robotics Dynamics and Control	Design and development control synthesis for aerospace vehicles: satellite-space robotics	Both Bachelors and Masters students	
Prof. Anurag Gupta	Mechanical Engineering	https://www.iitk.ac.in/new/anurag-gupta	Vibro-acoustics of musical instruments	We are interested in studying how unique designs of certain musical instruments are central to their ability to produce distinguished sound. I will be open to work with variety of instruments. Our aim will be to construct simple mathematical models and computational frameworks, and eventually experiments, which will help us understand the acoustical nature of the instrument.	Both Bachelors and Masters students	It will be desirable if the student knows how to play the instrument.
Prof. Somnath Bhowmick	Materials Science and Engineering	https://www.iitk.ac.in/new/somnath-bhowmick	Application of AI/ML in materials science	The project aims to explore accelerated materials discovery using AI/ML. Data will be collected from materials databases or will be generated using physics based models. Materials properties will be predicted using suitable descriptors, with an aim to accelerate property prediction by avoiding computationally expensive simulations.	Both Bachelors and Masters students	Fundamental knowledge of materials science/condensed matter physics and python programming.
Prof. P K Panigrahi	Mechanical Engineering	https://home.iitk.ac.in/~panig/	Energy	(1) Plasma actuator for wind turbine performance enhancement, (2) Hydrate based Gas storage and recovery and (3) Battery thermal management system	Both Bachelors and Masters students	
Prof. Arvind	Mechanical Engineering	https://home.iitk.ac.in/~arvindkr/	Metal additive manufacturing	1. A complex-shaped aerospace or automotive metal component is to be designed using design tools and topology optimization for 3D printing. FEA analysis of the design has to be conducted for assessing the mechanical behaviour. 2. A compact heat exchanger with integrated cooling channels is to be designed using design tools and topology optimization for 3D printing. Thermal performance analysis of the design using Ansys has to be conducted for assessing the heat transfer behaviour.	Both Bachelors and Masters students	FEA, Ansys, and Design tools
Prof. Preeti Malakar	Computer Science & Engineering	https://www.iitk.ac.in/preeti-malakar	High performance computing	1. Machine learning based data analysis and visualization of performance data from large-scale parallel programs. 2. Parallel data analysis of large cosmological simulations.	Both Bachelors and Masters students	Required: C/C++ programming, Linux shell commands. Desirable: ML, Parallel programming
Prof. Raju Kumar Gupta	Chemical Engineering	https://www.iitk.ac.in/che/rkg.htm	Desalination	Develop membrane to reduce fouling during desalination.	Both Bachelors and Masters students	
Prof. Supratik Banerjee	Physics	https://www.iitk.ac.in/new/supratik-banerjee	Turbulence in fluids and space plasmas	Turbulence in binary fluids, properties of solar wind turbulence	Only Masters students	
Prof. Nivedita Bhaktha	Management Sciences	https://www.iitk.ac.in/new/nivedita-bhaktha	Statistics - survey research and psychometrics		Both Bachelors and Masters students	Should have basic knowledge of statistical inference.
Prof. Tanmay Mathur	Aerospace Engineering	https://www.iitk.ac.in/new/tanmay-mathur	Gearboxes for aerospace applications	Recruiting for: 1-D dynamic modeling of geared drive systems.	Only Bachelors students	Must have taken a course a rigid body mechanics and vibrations. Bachelors students from AE and ME departments welcome to apply.
Prof. Sarvesh Mishra	Mechanical Engineering	https://www.iitk.ac.in/new/sarvesh-mishra	Metal Additive Manufacturing	Metal additive manufacturing (SS316, Ti64, IN718) for aerospace and defense manufacturing.	Only Masters students	CAD, FEM, CFD analysis
Prof. Swagata Mukherjee	Physics	https://www.iitk.ac.in/new/swagata-mukherjee	High energy physics, Collider physics	This exploratory project will focus on harnessing GEANT 4, a robust simulation software widely used in high-energy physics experiments like CMS and ATLAS at CERN-LHC. While fast simulation tools like DELPHES are common in phenomenology studies, they fall short when it comes to long-lived particle (LLP) searches. Our goal is to apply GEANT 4 to LLP searches in the context of dedicated detectors proposed for the High-Luminosity LHC and future colliders. If time permits, we can also explore the potential of GEANT 4 in simulating non-collider experimental setups for dark matter searches, broadening the scope of this project.	Both Bachelors and Masters students	Strong coding skill is necessary (C++ and python)
Prof. Vivek Verma	SEE	https://www.iitk.ac.in/new/vivek-verma	electronic / battery waste recycling	Critical metals are crucial for enabling a lot of clean energy technology. This project will involve extraction of critical metals from battery waste	Both Bachelors and Masters students	Basic degree in chemistry/materials science. Inorganic chemistry/basic wet chemistry knowledge will be preferred.
Prof. Mugundhan Vijayaraghavan	Space, Planetary, Astronomical Sciences and Engineering		Radio Astronomy, Space Sciences	The project will be in an interdisciplinary area where electronics, electromagnetics, mechanics, and astronomy will merge to unravel the mysteries of the cosmos. The project will involve development of antennas, electronics and data analysis routines to study radio emission from the Sun, and Jupiter.	Both Bachelors and Masters students	Python programming skills essential, some PCB design knowledge is desirable, but not essential.
Prof. Shyam Sunder Gopalakrishnan	Mechanical Engineering	https://www.iitk.ac.in/shyam-sunder-gopalakrishnan	Fluid Dynamics	Hydrodynamic stability, biological fluid mechanics, aerodynamics, porous media flows	Both Bachelors and Masters students	Basic programming skills; basic knowledge on fluid mechanics

Prof. Mousami Prasad	Management Sciences	https://www.iitk.ac.in/new/mousami-prasad	Energy and climate change	I undertake studies on energy and climate change. Currently three projects are underway. First, on the role of solar energy: this project explores techno economic social policy and governance aspects of solar energy. Second, on the role of biofuels: this project is the biofuels in selected countries like ethanol in India and biodiesel in Malaysia, Indonesia and Columbia. The objective is to understand both the demand and supply side factors affecting the adoption of biofuels. Third, green steel: this project is examining the decarbonization of the steel sector in India.	Both Bachelors and Masters students	Some familiarity with the solar, steel and biofuel sector will be helpful.
Prof. Raiesh Ranjan	Aerospace Engineering	https://www.iitk.ac.in/new/raiesh-ranjan	https://home.iitk.ac.in/~raieshr/	Physics-informed Machine Learning (e.g. PINN) approaches for Complex Turbulent Flows	Both Bachelors and Masters students	PvTorch, Fluid Mechanics, Machine Learning
Prof. Nagaditya Poluri	Electrical Engineering	https://iitk.ac.in/new/nagaditya-poluri	RF active circuits	RF LNA/PA design	Both Bachelors and Masters students	Background in RF
Prof. Bishakh Bhattacharya	Mechanical Engineering	https://www.iitk.ac.in/new/bishakh-bhattacharya	AI and Robotics	Design and Development of Intelligent Robotic Systems	Masters students	Skill in AI and ROS
Prof. Abhishek Gupta	Electrical Engineering	https://www.iitk.ac.in/new/abhishek-k-gupta	Wireless Communications, 5G, Molecular Communications		Both Bachelors and Masters students	ECE students with knowledge of digital communication, MATLAB, probability
Prof. Kantesh Balani	Materials Science and Engineering	https://home.iitk.ac.in/~kbalani/	Biomaterials / Coatings		Only Masters students	Applicants should have working knowledge on materials.
Prof. Gowdham Prabhakar	Design	https://home.iitk.ac.in/~gowdhampe/	Human Machine Interaction - HIVE Lab	HIVE investigates how people interact with technology across domains like HCI, Music Technology, creative technology, Robotics, Automotive UI, Assistive technology and New Media, with a focus on designing intuitive and expressive systems and interactive arts installations.	Both Bachelors and Masters students	Skill in Engineering or Design or Arts

