

# How to do internships in your BSc & MSc?

In this blog we will explore:

1. What is an internship?
2. Why should you start internships in college 1st year?
3. Top Research Institutes for internships
4. Internship Timeline and Process
5. Internship opportunities
6. What is the application process for:

BSc-1st year

BSc- 2nd year

BSc- 3rd year

MSc- 1st year

MSc- 2nd year

## **What is an internship:**

The internship is a work experience mainly to train students or trainees. Internships are various: paid-unpaid/partially paid, long term-short term, etc. Internships usually last a few weeks, three months, six months, or even a year. One of the essential internship benefits is that college students gain much experience in their field of interest. And this helps them in jobs and further studies. There are two main purposes why I recommend people for internships:

1. To gain experience in the field you want to build your career.
2. To explore different fields when you are not sure about your career options.

## **Why should you start internships from 1st year?**

Nowadays industries as well as academic fields prefer experience and skills over your qualifications. It's a very good idea to start working on these things as soon as possible. Getting an internship in the first year builds a strong CV and increases the chance of getting an even higher internship next year. Even doing proper research on internship opportunities from the first year helps in the future when you have a lot of opportunities.

Some people might say that in the first year you should have fun, and from second year you can do the internships but that will only put you behind others. You can still

have fun while doing the internship because in the first year nobody expects too much from you. And when you can have both fun as well as gain experience, why should you waste such an opportunity?

### **Top Research Institutes providing Internships:**

Here are the names of few research institutes which are known to provide excellent internship opportunities:

- IISERs (Indian Institute of Science Education and Research)
- NISER (National Institute of Science Education and Research)
- IISc (Indian Institute of Science)
- IITs & NITs
- ISI (Indian Statistical Institute)
- CEBS (Centre for Excellence in Basic Sciences)
- CMI (Chennai Mathematical Institute)
- PRL Ahmedabad (Physical Research Laboratory)
- IUCAA (Inter-University Centre for Astronomy and Astrophysics)
- TIFR (Tata Institute of Fundamental Research)
- IACS (Indian Association for Cultivation of Sciences)
- IIST (Indian Institute of Space Science and Technology)

### **Internship Timeline and Process:**

If you aspire to be a researcher, then internships will definitely help you build connections with professors so that you can ask for recommendations for your masters or PhD applications in future. Regular courses are already hectic. That's why students don't get much time and opportunities to explore the reality of their field. Hence it's a good idea to look for internship options starting from the first year of your degree.

There are usually two types of internship : summer internships of 2-3 months and winter schools (which are of shorter duration than the former). These opportunities are perfect for utilising the breaks given during summers and winters.

There are few ways to get an internship:

- **Applying for Fellowship Programs:** Application processes usually start a few months in advance. Depending on your eligibility, you can apply to any college in India or other countries. There are specific requirements while filling out application forms, such as a Letter of Recommendation, Statement of Purpose, Resume, English proficiency tests (if you wish to apply for foreign nations), etc. These programs usually cover the travel and accommodation charges of the selected applicants.

- Direct mail to professor: Mail any professor in the world under whom you are interested in doing an internship. For this, you need to write an appealing letter.
- Direct Referral: This way is the least common among others. You can ask a referee ,who knows you, to refer your name to a professor of your choice, given that the professor knows your referee.

Most of the time, professors don't reply to requests or the application gets rejected. There is no need to get disheartened. You can get a good internship by practising an efficient methodology of writing emails and submitting applications. Usually, students apply to many programs to increase their chances of getting any one of them.

Most of the internships are unpaid. However, some internship programs provide some stipends (a kind of compensation money). There are virtual internships, too, which let students get experience from their comfort zone. Virtual internships may be helpful in theoretical fields but can't provide many experiences for experimental fields. You can also approach any professor for reading projects. In reading projects, a professor gives you their research paper (already published most of the time), and you have to understand it and submit your report of whatever you inferred.

So far we have only talked about academia, if you want to look for industrial internships the best way is to keep an updated and active LinkedIn profile. Increasing the network on linkedin will help in convenient communication between you and the experts.

### **Internship Opportunities:**

- **For BSc I Year**

Since students don't have much experience in their first year, there are very few opportunities for them. But the opportunities increase as the level increases.

The easiest way to get an internship in the first year is to request the professors taking your courses. They may give any kind of opportunity depending on your familiarity with them and your sincerity toward the research field.

Other opportunities are:

- 1) NIUS Program: National Initiative on Undergraduate Science is organised by Homi Bhabha Centre for Science Education (HBCSE), TIFR, Mumbai. It was designed to give exposure and guidance to undergraduates in Basic Sciences (Physics,Astronomy,Chemistry and Biology). Selected students work on research topics under scientists and researchers for about two years(during summer and winter breaks). Only 50-60 participants are selected every year. The

application form is usually released in February or March for Physics and Astronomy. While in September or October for Chemistry and Biology. Letter of Recommendation as well as Statement of Purpose both are required while submission of the application.

- 2) JNCASR Summer Internship Program: Jawaharlal Nehru Centre for Advanced Scientific Research conducts two months training in the Life Sciences, Chemical Sciences, Physical Sciences, Mathematics and Engineering. About 150 fellowships are offered each year. The admitted students are given a fellowship of Rs. 10,000/- per month. The application form is usually released in January.
- 3) Internships Programs by IITs: IIT-Roorkee conducts SPARK every year and application form releases in January. IIT-Gandhinagar conducts SRIP and IIT-Ropar conducts Summer Internship Program for first year undergraduates.

- **For BSc II Year**

There are many internship opportunities for BSc 2nd year. The most popular among them are:

- 1) JNCASR Summer Internship Program: Jawaharlal Nehru Centre for Advanced Scientific Research conducts two months training in the Life Sciences, Chemical Sciences, Physical Sciences, Mathematics and Engineering. About 150 fellowships are offered each year. The admitted students are given a fellowship of Rs. 10,000/- per month. The application form is usually released in January.
- 2) ICTS S.N. Bhatt Memorial Excellence Program: This is a fellowship program by the International Centre for Excellence in Theoretical Sciences (TIFR) Bangalore. Selected applicants are trained in theoretical physics and mathematics for a period of two months in summer. Application portal usually closes in the first week of January.
- 3) SREFP: Summer Research Fellowship Program is conducted by Indian Academy of Sciences, Bangalore during summers. Application process requires a letter of recommendation and it usually closes by December.
- 4) IITK-SURGE: Research internship conducted by IIT Kanpur and its application process starts late in January.
- 5) Internships programs by IISER Pune/Kolkata/Mohali/Bhopal: Every summer these institutes provide internships. It's better to keep an eye on their websites from February as the application process starts around the same time.
- 6) Internships Programs by IITs: IIT-Roorkee conducts SPARK every year and application form releases in January. IIT-Gandhinagar conducts SRIP and IIT-Ropar conducts Summer Internship Program for undergraduates.
- 7) Mailing a professor

- **For BSc III Year**

Opportunities for 3rd year students:

- 1) JNCASR Summer Internship Program: Jawaharlal Nehru Centre for Advanced Scientific Research conducts two months training in the Life Sciences, Chemical Sciences, Physical Sciences, Mathematics and Engineering. About 150 fellowships are offered each year. The admitted students are given a fellowship of Rs. 10,000/- per month. The application form is usually released in January.
- 2) ICTS S.N Bhatt Memorial Excellence Program : This is a fellowship program by the International Centre for Excellence in Theoretical Sciences(TIFR) Bangalore. Selected applicants are trained in theoretical physics and mathematics for a period of two months in summer. Application portal usually closes in the first week of January.
- 3) SRFP: Summer Research Fellowship Program is conducted by Indian Academy of Sciences, Bangalore during summers. Application process requires a letter of recommendation and it usually closes by December.
- 4) IITK-SURGE: Research internship conducted by IIT Kanpur and it's application process starts late in January.
- 5) Internships programs by IISERs and IITs: Every summer these institutes provide internships. It's better to keep an eye on their websites from February as the application process starts around the same time. IIT-Roorkee conducts SPARK every year and application form releases in January. IIT-Gandhinagar conducts SRIP and IIT-Ropar conducts Summer Internship Program for undergraduates.
- 6) Foreign Internships : CalTech SURF by California Institute of Technology, WISE-DAAD (The programme targets Indian students pursuing a science degree who wish to do a research internship at a publicly-funded German research institute), Summer Internships by Max Planck Institute, etc. Different countries have different terms and requirements for their application process.
- 7) Mailing a professor

- **For MSc I Year**

Opportunities for 1st year M.Sc. students:

- 1) Visiting BARC programme: The undergraduate and postgraduate science and engineering students are welcome to visit BARC campus at Trombay to get a glimpse of its world class facilities. The project usually lasts for 3-6 months.
- 2) JNCASR Summer Internship Program: Jawaharlal Nehru Centre for Advanced Scientific Research conducts two months training in the Life

Sciences, Chemical Sciences, Physical Sciences, Mathematics and Engineering. About 150 fellowships are offered each year. The admitted students are given a fellowship of Rs. 10,000/- per month. The application form is usually released in January.

- 3) ICTS S.N Bhatt Memorial Excellence Program : This is a fellowship program by the International Centre for Excellence in Theoretical Sciences(TIFR) Bangalore. Selected applicants are trained in theoretical physics and mathematics for a period of two months in summer. Application portal usually closes in the first week of January.
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- 7) Foreign Internships : CalTech SURF by California Institute of Technology, WISE-DAAD (The programme targets Indian students pursuing a science degree who wish to do a research internship at a publicly-funded German research institute), Summer Internships by Max Planck Institute, etc. Different countries have different terms and requirements for their application process.
- 8) Kupcinet-Getz International Summer School: This is conducted by Weizman Institute of Science in fields of Physics, Chemistry, Biology and Mathematics. The school usually lasts for 2 months. The application process starts in December and ends by January end.
- 9) Mailing a professor

- **For MSc II Year**

Opportunities for 2nd year M.Sc. students:

- 1) Visiting BARC programme: The undergraduate and postgraduate science and engineering students are welcome to visit BARC campus at Trombay to get a glimpse of its world class facilities. The project usually lasts for 3-6 months.
- 2) JNCASR Summer Internship Program: Jawaharlal Nehru Centre for Advanced Scientific Research conducts two months training in the Life Sciences, Chemical Sciences, Physical Sciences, Mathematics and Engineering. About 150 fellowships are

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### **Conclusion:**

Internship is an important part of college life. It's always fun to interact and learn from others. We will explore more on application procedures like writing SOP (Statement of Purpose), getting LORs (Letter of Recommendation), etc. in the next blog.

If you are wondering 'How to write emails to professors asking for internships,' visit our [website](#) and check the other blogs to check the free materials out.