

POST GRADUATE DEPARTMENT

Department Name: Mathematics

- **Eligibility:** Bachelor of Science in Mathematics
- **Syllabus/ Course Content:**
 - Semester I:** Research Methodology and IPR, Real Analysis, Advanced Abstract Algebra, Complex Analysis, Advanced Discrete Mathematics- I, Differential Geometry, Introduction to LaTeX, Internship.
 - Semester II:** Advanced Linear Algebra and Field Theory, Topology, Integral Equations, Advanced Discrete Mathematics- II, Riemannian Geometry, Programming with Scilab, Internship.
 - Semester III:** Contemporary Applied Technological Advancements in Research, Functional Analysis- I, Operations Research, Difference Equations- I, General Relativity, Fluid Dynamics, Practical On DSC- VIII (Operations Research), Programming with Mathematica, Research Project Phase – I.
 - Semester IV:** Partial Differential Equations, Numerical Analysis, Advanced Mechanics, Relativistic Cosmology, Functional Analysis- II, Difference Equations- II, Practical On DSC- X (Numerical Analysis), Programming on Python, Research Project Phase – II.
- **Activities:**
 - Inauguration of Mathematical Society
 - Mathematical Model Competition
 - Mathematical Rangoli Competition
 - Poster Presentation Competition
 - Mathomania Magazine Competition
 - Extension Activities for Blind Students and Other School Students
 - Field Visit
 - Field Experienced Enrichment Activity under MoU
 - Seminar and Group Discussion
 - Workshops
 - Guest Lectures
 - Internship
- **Facilities:** Nil
- **Opportunities:**

After completing M.Sc. in Mathematics, career will be more stable and successful. The private and government sectors both have thousands of job options available. The government sector also wants a good mathematician, who can manage the data and

business mode. Every business requires financial activity and data management for better improvement and success. Various companies have a position like numerical operator and as a accountant. So career after M.Sc. Mathematics is very fruitful. The job profile option after completing the M.Sc. Mathematics as follows:

1. Assistant Professor in Mathematics: Many of the colleges and Universities/Institutes can offer job as a Assistant professor after clearing SLET/ CSIRNET examination or Ph.D. degree.

2. Junior Research Fellow: Junior research fellow exam is now conducted by NTA. Normally only top candidates acquire the JRF post after clearing the NET/GATE exam.

3. Scientific Officer: Students can apply for a scientific office job in the industry such as ISRO (the Indian Space research Organization), DRDO (Defense Research and Development Organization), TIFR (Tata Institute of Fundamental Research) and NAL (National Aeronautics Limited).

4. Operational Research: Students can also become operational researcher if they are good at mathematics. Under this profession basically, they have to solve the business profitability, improve efficiency, and complex organization problems. Also have to understand the assigned assignment in deep. And they have to use mathematical programming, analyst techniques, optimization, and so on for enhancing the project planning and skills.

5. Statistical Research: A career in statistical research is very interesting. It presents the company's statistical businesses at a modest and technical level. Under this profession, students will get the chance of analyzing, researching, using mathematical tools, algorithms, and theories, and become a professor.

6. ICT: Information and communication technology is playing a big role in this platform. ICT always offer a new role for Mathematics Post Graduate students. Such as the development of ICT, Regular Maintenance, Manufacturing and design part, general part, and so on.

7. Data Science Modelers: The demand for data science specialists is huge because every company wants to convert its data into the required information. Making good information sheet help company decision-maker to take the best decision for the company.

8. Banking: Investment Banking. Many famous investment banks provide financial advice to the customer. These professions help to increase the equity and debt market. A career in investment banking is a very high-profile post along with good stability. In this profession, students have to deal with the clients and the market. Some basic skills required for an investment banker. Integrity, knowledge of finance and the markets, interpersonal skills, communication, etc. Job opportunity comes from various areas such as finance, Wells Fargo, American Express, Deutsche bank, CIGNA, Barclay's bank, AIG, JP Morgan, Goldman Sachs, etc.

➤ **Success Stories:**

Sr. No.	Name	Organization
1.	Roshan Soyam	Arogya Sevak, Maharashtra Health Department
2.	Nalini Warhate	Executive Assistant, BMC
3.	Achal Gulhane	Arogya Sevak, Maharashtra Health Department
4.	Mamta Pimpaljale	Teacher, Vijaya Convent & Vijaya CBSE School, Amravati
5.	Manisha Shambharkar	Teacher, Matoshri Krushnabai Deshmukh Vidyalaya, Amravati