



Hindi Vidya Prachar Samiti's  
**Ramniranjan Jhunjhunwala College**  
**of Arts, Science & Commerce**  
**(Empowered Autonomous Status)**

**Affiliated to**  
**UNIVERSITY OF MUMBAI**  
**Syllabus for the T.Y.B.Sc. (under NEP)**  
**Program: B.Sc. Mathematics**  
**Program Code: RJSUMAT**  
**Course: Community Engagement Programme**  
**Course Code: RJCEPMAT**

**(REVISED in 2024-2025 in alignment with the NEP 2020 facilitating the inter-and  
multidisciplinary learning and multiple entry and exit of the students)**  
**(CBCS 2025-2026)**

## THE PREAMBLE

### *Why Mathematics?*

Mathematics is the language of all Science, Engineering, and Technology. Mathematics is considered the queen of sciences. Without Mathematics, there can be neither science nor engineering. Mathematics occupies a crucial and unique role in human societies and represents a strategic key in the development of the whole of mankind. Mathematics is around us. It is present in different forms; the list is just endless if one goes on to note down the situations when our computational skill or more specifically, simple mathematics comes to play a role, almost every next moment we do the simple calculations at the back of our mind. Of course, these are all done pretty unconsciously without a thought being spared for the use of mathematics on all such occasions. Mathematics helps the man to give exact interpretation to his ideas and conclusions. It is the numerical and calculation part of man's life and knowledge. It plays a predominant role in our everyday life and it has become an indispensable factor for the progress of our present-day world. Further, in modern times, the adoption of mathematical methods in the social, medical and physical sciences has expanded rapidly, confirming mathematics as an indispensable part of undergraduate curricula and creating a great demand for mathematical training. Much of the demand stems directly from the need for mathematical modeling of phenomena. Such modeling is basic to all engineering, plays a vital role in all physical sciences and contributes significantly to the biological sciences, medicine, psychology, economics and commerce. The numerous applications of the subject in almost every field makes mathematics the most versatile subject choice.

### *Why Mathematics at R J College?*

The department of Mathematics of R J College is the department as old as the college itself. It started in 1963, the inception year of the college and since then has remained as the center of academic activities for the subject. With a legacy of more than 6 decades, today the department offers undergraduate programs in the subject of mathematics with more than one discipline-specific elective paper and is affiliated to, and recognized by the University of Mumbai. As an applied component in the final year, mathematics students learn computer programming languages like Java, SQL, and python along with system analysis. Series of guest lectures, Problem-solving sessions, lecture-based learning, bridge courses, institute visits etc. motivate students to explore more in terms of applications of the subject. Under autonomy, the department has made the curriculum more robust by incorporating skill-based learning and value-added course that imparts practical knowledge of the subject to the students. Every year the department organizes a seminar competition on the theme 'Applications of Mathematics' in various areas. Department of Mathematics also runs a value-added course in a year and is able to attract students from other disciplines of science enrolling for these courses. Department of mathematics has received funding from the Department of Biotechnology (DBT), New Delhi to further strengthen

our hands in being able to provide hands-on training to the students to satisfy their curiosity and inculcate research aptitude.

### ***Our Curriculum, Your Strength***

The syllabus for mathematics for the total six semesters is meticulously designed so as to make students understand the diversity of subject. From learning elementary calculus and basic algebra, students move on to applied aspects of the subject in terms of Real analysis, multivariable calculus, Complex analysis, abstract algebra. Specialized training in differential equations, numerical methods is a part of the learning process. The teaching staffs of the department of mathematics are highly qualified and are dedicated to their subjects giving a friendly environment for the students. The department always aims to develop skills, ideas and overall progress of the students. Many of our students participate and get awards in various activities like MTTS program, Madhava Mathematics competition and other competitive exams. The environment of the department is very friendly which is useful for the students coming from other colleges also.

**CREDIT STRUCTURE FOR SEMESTER V**

| Course                                | Nomenclature                   | Credits | Topics      |
|---------------------------------------|--------------------------------|---------|-------------|
| <b>COMMUNITY ENGAGEMENT PROGRAMME</b> |                                |         |             |
| RJCEPMAT351                           | Community Engagement Programme | 02      | Mathematics |

## **T.Y.B.Sc. Semester V Mathematics (Major)**

### **Community Engagement Programme (CEP)**

**Title: Community Engagement Programme**

**Course code: RJCEPMAT351**

**Credits: 02**

#### **Guidelines for Undergraduate Students for the activities under Community Engagement Programme**

The following guidelines for CEP of TYBSc (Mathematics) align with the requirement that each teacher supervises a batch of 10-15 students.

- 1. Scope:** The Community Engagement Programme (CEP) is typically spans 4-6 weeks, requiring a minimum of 60 hours of physical presence for their CEP activities. Students are encouraged to perform their CEP activities, with support and guidance available from the department. CEP is expected to take place outside the academic institution to expose students to real-world work environments.
- 2. Objective:** The CEP aims to achieve several objectives to provide a comprehensive understanding of community engagement.
  1. To understand the social, economic, and cultural dynamics within various communities in fostering social change and improving quality of life.
  2. To promote principles of social justice, equity, and inclusion in community development practice.
  3. To recognize and respect cultural diversity within communities.
  4. To understand the principles of sustainable development.
- 3. Course Outcome:** After studying the course CEP, the students will be able to
  1. analyze and articulate the social, economic, and cultural dynamics within various communities.
  2. demonstrate an understanding of ethical principles in community engagement, respecting diversity and promoting inclusivity.
  3. to integrate sustainable development principles into community engagement process to ensure long-term benefits.

**4. Suggested Activities:** The scope of CEP covers a wide range of activities, allowing students to align their experiences with their academic interests. Flexibility is provided to accommodate changing dynamics, including the option for academic online CEP sessions. Activity should align with the mathematics curriculum and include practical, real-world applications. The following activities are suggested:

- Students can survey among school students about difficulties in Mathematics. After the survey, the students can conduct sessions to resolve mathematical difficulties personally.
- Awareness can be created among kids to overcome the MATH PHOBIA.
- To make mathematics enjoyable, students can conduct seminars and workshops on topic like ORIGAMI, GEOMETRY, etc.
- Students can conduct Quantitative Aptitude training programs for those who are appearing for competitive exams.

#### **Duration**

- CEP activities should be spread throughout the semester comprising of minimum 60 hours.
- Weekly progress reviews should be conducted by the teacher-in-charge.

### **5. Roles and Responsibilities**

#### **Students**

- Actively participate in all phases of the CEP course.
- Maintain proper records and submit a detailed report at the end of the CEP course.

#### **Teacher-in-Charge**

- Guide students in activities selection, planning, and execution.
- Ensure ethical and safety standards are met during fieldwork.
- Review weekly progress and provide constructive feedback.
- Evaluate reports and presentations.