



Antyoday Mission

## **JEEVAN VIKAS MAHAVIDYALAYA, DEVGRAM**

### **DEPARTMENT OF MATHEMATICS**

#### **PROFILE**

##### **❖ Profile of the Head of Department**

- **Head** : Dr. Kalyani D. Bhongade  
Assistant Professor of Mathematics
- **Date of Joining** : 14<sup>th</sup> January 2022
- **Teaching Experience** : 3 years at G. H. Rasoni Engg.  
College, Nagpur
- **Books Published** : Nil
- **Minor Research Project** : Nil
- **Research Papers in Journals** : 05
- **Books edited** : Nil
- **Chapters in Edited Book** : Nil
- **Invited Lectures** : 01
- **UGC Sponsored FDP** : Nil
- **Member of NGOs/ Professional Bodies** : 01
- **Co-ordinator** : School Teacher's Training, Math's  
Clinic, Plastic Free Campus Cell

##### **❖ Subjects in the Department**

Program	Level	Subject	Duration of Course	Pattern of Course	Applicable to years	Intake Capacity
UG	B.Sc.	Mathematics	6 Semester	CBS Semester Pattern	First	360
PG	MSc	Mathematics	4 Semester	CBCS Semester Pattern	First, Second	44
<b>Total Intake Capacity</b>						<b>404</b>

## ❖ Sanctioned Faculty in the Department

Sr. No.	Name of Program	Sanctioned	Recruited	Vacant
1	B.Sc.	1	1	0
2	MSc	2	0	2
3	UG &PG (CHB)	2	2	0

## About Department

### Overview of the Department

The Department of Mathematics of Jeevan Vikas Mahavidyalaya, Devgram at UG level was established in the year 2018. The Department offers graduate, postgraduate courses in Mathematics. It consists of qualified faculty members to make sure the best education Imparted to the students. The faculty members are also actively involved in research and carrying out projects. The students are provided with ample opportunities to improve their skills. They are motivated to handle seminars and participate in group discussions. Apart from emphasizing consistent and good academic performance, the department encourages participation of students in curricular and co-curricular activities to bring out the best in them.

### Core Competence

A core of basic mathematics provides with the fundamental mathematical knowledge and skills, and the basis for more advanced work later on. The core mathematics courses are aimed at building a strong foundation in the subject. Students are exposed to advanced research topics through electives and project work.

### Programmes Offered

Mathematics is a basic analytical tool in all the disciplines. The department lays a strong foundation in Mathematics with syllabus designed so as to cater to the needs of all undergraduate and postgraduate students. Also, the department offers UG, PG course in Mathematics.

### B.Sc Mathematics

The Bachelor of Science in Mathematics provides a strong background to the fundamentals of mathematics. There is a large demand for people with strong analytical skills and a broad-based background in the mathematical sciences. The 3-year B.Sc programme will prepare a student to avail many diverse attractive opportunities.

### M.Sc. Mathematics

M.Sc Programme is proposed by the department to meet the growing demands of core mathematicians. The 2-year M.Sc. programme curriculum focuses not only on the conventional Mathematics course but also keeps in view of the current needs and demands in various upcoming fields.

### **Research thrust areas**

The specific areas of research in which the department is actively engaged are

Fuzzy Set Theory

Algebra

Operations Research

Complex Analysis

Numerical Analysis & Differential equations

Relativity

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#### ❖ **Vision**

- ❖ To provide an environment where students can learn, become competent users of mathematics, and understand the use of mathematics in other disciplines.

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#### ❖ **Mission**

- ❖ To provide excellent knowledge of Mathematical sciences for suitable career and groom them.
- ❖ To train the students for interdisciplinary applications and research.
- ❖ To discover, mentor, and nurture mathematically inclined students, and provide them a supportive environment that fosters intellectual growth.

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#### ❖ **Objectives**

- ❖ To offer a set of core courses in mathematics aimed at developing the student's intellectual curiosity, creative ability and habit of independent study.
  - ❖ Create interest in the subject of Mathematics and motivate students to pursue higher studies in Mathematics
  - ❖ To provide the opportunity for the student to participate in research projects, seminars, work experiences and creative projects.
  - ❖ To provide opportunities for the student to participate in collaborative work and develop their leadership and group work skills.
  - ❖ To facilitate and promote second concentration in mathematics for students of other disciplines.
  - ❖ To provide mentoring through students and teachers to individualize and enrich the student's mathematical experience.
  - ❖ To provide courses, mentoring, participation in projects and other activities for students interested in pursuing studies in mathematics.
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❖ **Teaching-Learning Methods (T-L Process)**

SR. NO.	TEACHING-LEARNING METHODS
1	POWER POINT PRESENTATION/ICT TOOLS
2	SELF AND PEER LEARNING
3	ANALYSIS METHOD
4	SEMINAR
5	PROJECT BASED LEARNING
6	LECTURE METHOD

❖ **MoU**

- ❖ The MoU with department of Mathematics, RTM Nagpur University is in process.

❖ **Best Practice**

1. **Title of Best Practice** : **“Service-Learning Program (Sikho aur Sikhao)”**

- **Objectives** :
  - ❖ To impart the vital skills and foundational knowledge of Mathematics.
  - ❖ To deepen the skills gained through the course work.
  - ❖ To critically understand the society and develop consciousness in order to motivate them to serve the mankind.
  - ❖ It is an innovative initiation taken by the department of Mathematics to promote a value-based education to the nearby school students in and around the college.
  - ❖ The college motivates staff & students to actively participate in community service for the neighbourhood school students.
- **Duration** : Whole Academic session
- **Beneficiary** : All the students of the mathematics during the Academic Session.
- **Nature of Best Practice**
  - ❖ The department of Mathematics conducts Service-Learning Programme to classes of nearby School, as a service to the student community with staff and students of the department under the supervision of the Head of the department. The high moral values, standards, self-belief and motivation are inculcated to them by the unprecedented circumstances and numerous problems. In order to provide the best possible experience to the students, the Service-Learning Program sought out community partnerships with the nearby schools that fit the learning goals specification.
- **Problems Encountered and Resources Required:**
  - ❖ Initially the responses to the Service-Learning Programme by the school students were not attractive. Students didn't show much interest to the programme. Attendance was also poor. Slowly, they started showing interest and participated actively to the service learning programme and also benefited due to continuous motivation.

- **Outcomes**
- Through this programme, both students and staff were benefited. Staff found new teaching methodology and students had a completely new method of learning. Their mathematical skills developed and also their interest in Mathematics increased. The Service-Learning program bridged both the college and the school. The Service-Learning program strived to achieve partnerships that are beneficial to the student, and the community ensured a mutually beneficial experience.
- **Measure**
  - ❖ The frequency of library books of mathematics increases.
  - ❖ Student's teaching skill is enhanced.

2. **Title of Best Practice : Math's Clinic:**

- **Objectives :**
  - ❖ To appreciate the usefulness, power and beauty of mathematics
  - ❖ To enjoy mathematics and develop patience and persistence when solving problems
  - ❖ To understand and be able to use the language, symbols and notation of mathematics
  - ❖ To develop mathematical curiosity and use inductive and deductive reasoning when solving problems
  - ❖ To become confident in using mathematics to analyse and solve problems.
  - ❖ To develop the knowledge, skills and attitudes necessary to pursue further studies in mathematics
- **Duration : Whole Academic session**
- **Beneficiary : All the students of the mathematics during the Academic Session.**
- **Nature of Best Practice**  
The department of Mathematics has math's clinic under the supervision of the Head of the department. The query related to mathematical concepts are solved by the mathematics teachers of the clinic. In order to provide the best possible experience to the students, practise is followed to solve the problems of students related to mathematics such as difficulty in understanding mathematics, fear for the subject, guidance for career planning in mathematics etc.
- **Problems Encountered and Resources Required:**
  - ❖ Initially the responses to the math's clinic by the students were not attractive. Students didn't show much interest to the programme. Slowly, they started showing interest and engaged actively to the programme and also benefited due to continuous motivation.
- **Outcomes**
- Through this programme, both students and staff were benefited. Staff found new teaching methodology and students had a completely new method of learning. Their mathematical skills developed and also their interest in Mathematics increased. The program bridged both the college and the school. The activity strived to achieve partnerships that are beneficial to the student, and the teachers ensured a mutually beneficial experience.
- **Measure**

- ❖ The frequency of library books of mathematics increases.
- ❖ Student's mathematical skill is enhanced.
- ❖ Student's interest for the subject was risen.

### ❖ **Bridge Course**

**Objective:** A bridge course for newly admitted students is conducted every year before the commencement of the first semester classes. The main objective of the course is to bridge the gap between subjects studied at Pre-university level and subjects they would be studying in Graduation.

**Practice:** A module of the syllabus for Bridge Course is specially framed for UG Course and introduced for first year students. It is designed for 10 days duration at the start of session.

### ❖ **Value-added Course (Mathematics for Competitive Examinations)**

**Objective:** Objectives of the Value-Added Course are –

- ❖ To provide awareness to the students about the various types of jobs offered both in the Central and State Government.
- ❖ To develop competitive skills through various types of objective tests.
- ❖ To train them by conducting aptitude test based on verbal and quantitative skills.
- ❖ To enhance their ability to face competitive examinations.

Thus, the value-added course helps students stand apart from the rest in the job market by adding further value to their resume.

**Practice:** A module of the syllabus of 30 hours for Value-added Course (Mathematics for Competitive Examinations) is specially framed for UG students and is carried out during the academic session.

### ❖ **SWOC Analysis**

SWOC is an acronym for an organizations strengths, weaknesses, opportunities and challenges. Completing a SWOC analysis provides insight into areas of focus during a strategic planning process.

**Strength:** Highly dedicated and sincere faculty member, hardworking students are the strengths of the department.

**Weakness:** Less admission of rural students for mathematics

**Opportunities:** Opportunities for higher studies and majority of students join different Universities and Institutions for higher degrees and Research works.

The subject of Mathematics has wide range of applications students can be motivated to apply their knowledge.

**Challenges:** To teach Mathematics to students who are marginalized (socially economically and academically).

❖ **Future Plan**

- ❖ To enrich Departmental Library
- ❖ To develop the recognized research centre of mathematics
- ❖ To arrange National and International Seminars.
  
- ❖ To publish more papers in reputed journals
- ❖ To organize more guest lecturers for B.Sc and M.Sc students
- ❖ Strengthen the Maths Club and activities.

**Dr. Kalyani Thakre**

**Head, Dept. of Mathematics**