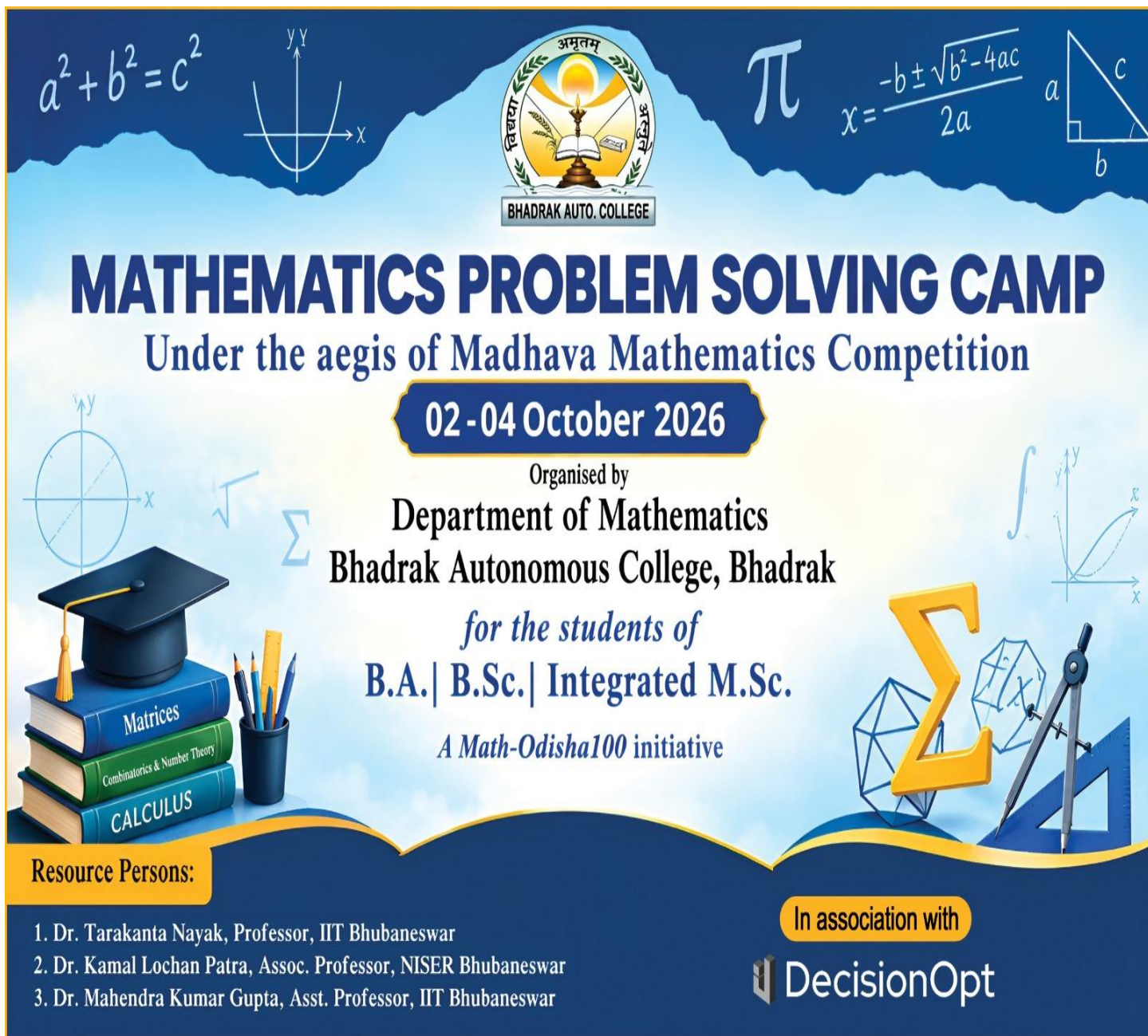




The banner features a blue background with white clouds. At the top, there are several mathematical symbols and formulas: $a^2 + b^2 = c^2$, a parabola graph, the Bhadrak Auto College logo (a circular emblem with a lamp and text in Odia and English), the Greek letter π , the quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$, and a right-angled triangle with sides a , b , and c . The main title "MATHEMATICS PROBLEM SOLVING CAMP" is in large, bold, blue letters. Below it, "Under the aegis of Madhava Mathematics Competition" is in a smaller blue font. The dates "02-04 October 2026" are in a yellow box. The organizing department is "Department of Mathematics, Bhadrak Autonomous College, Bhadrak" for "B.A. | B.Sc. | Integrated M.Sc." students. It is a "Math-Odisha100 initiative". On the left, there is an illustration of a graduation cap on a stack of books labeled "Matrices", "Combinatorics & Number Theory", and "CALCULUS", with a pencil holder. On the right, there is an illustration of a large yellow sigma symbol, a compass, and a ruler. The bottom left lists the resource persons, and the bottom right mentions the association with DecisionOpt.

MATHEMATICS PROBLEM SOLVING CAMP
Under the aegis of Madhava Mathematics Competition
02-04 October 2026
Organised by
Department of Mathematics
Bhadrak Autonomous College, Bhadrak
for the students of
B.A. | B.Sc. | Integrated M.Sc.
A Math-Odisha100 initiative

Resource Persons:

1. Dr. Tarakanta Nayak, Professor, IIT Bhubaneswar
2. Dr. Kamal Lochan Patra, Assoc. Professor, NISER Bhubaneswar
3. Dr. Mahendra Kumar Gupta, Asst. Professor, IIT Bhubaneswar

In association with
DecisionOpt

SUMMARY REPORT

MATHEMATICS PROBLEM SOLVING CAMP

02 - 04 OCTOBER 2026

Department of Mathematics, Bhadrak Autonomous College, Bhadrak

A MathOdisha100 initiative

A three-day residential Madhava Mathematics Competition (MMC) training camp, titled **“Mathematics Problem-Solving Camp,”** was organised by the Department of Mathematics, Bhadrak Autonomous College, Bhadrak, in association with the Madhava Mathematics Competition and DecisionOpt, from **2 to 4 October 2026**. A total of **59** undergraduate Mathematics students from **09** colleges across Odisha attended the camp. Dr Alok Kumar Sahoo, Local Coordinator, and Prof. Tarakanta Nayak, Regional Coordinator of the Madhava Mathematics Competition, coordinated the programme.

Inauguration: The camp was formally inaugurated by the esteemed Principal, Bhadrak Auto. College, Dr. Lalit Ranjan Sahu, by lighting the ceremonial lamp before Lord Jagannath, the soul of Odisha. The inaugural ceremony was graced by the presence of Dr Laxmikanta Nayak, Administrative Bursar, Dr T. Nayak, Regional Coordinator of MMC, the Head of the Department of Mathematics, Mrs. Gitarani Majhi, and all the resource persons. The programme began with an introductory address by the Local Coordinator, who welcomed the dignitaries and introduced the guests present on the dais. Subsequently, the Head of the Department of Mathematics delivered the welcome address, extending a warm welcome to all the resource persons and participating students. The Principal, in his address, highlighted the growing importance of mathematics in the modern era and its wide-ranging applications. The Administrative Bursar discussed various practical applications of mathematics and encouraged students to participate in the camp with sincerity and enthusiasm. Dr T. Nayak, the Regional Coordinator, highlighted the significance of the camp and the broader objectives of the Madhava Mathematics Competition (MMC). The other resource persons Dr. K. L. Patra and Dr. M. K. Gupta, shared their views and encouraged students to make the most of this learning opportunity. Finally, the Local Coordinator briefly introduced the MathOdisha100 initiative, highlighting its vision of strengthening mathematical learning and nurturing mathematical talent across Odisha. The inaugural ceremony concluded with these remarks, marking the formal commencement of the three-day Mathematics Problem-Solving Camp.

Academic activities: To make the camp more meaningful and enhance students’ learning experience, five teaching associates (TAs) were also invited to assist the three resource persons and help students develop a deeper understanding of the topics covered during the camp. The camp was organised in a residential mode, ensuring that students could stay together and participate fully in all academic and extracurricular activities like group discussion and morning yoga sessions.

Before the commencement of the camp, three online preparatory classes were conducted by the resource persons on 28th, 29th and 30th September 2026, each lasting approximately 1.5 hours (04 PM to 05.30 PM). These sessions aimed to introduce the participants to fundamental mathematical ideas and other relevant concepts related to the camp. They provided the necessary academic foundation and helped participants prepare for and benefit more effectively from the sessions during the three-day camp.

Resource Persons' details:

Instructor:

1. Dr. Tarakanta Nayak, Professor, Dept. of Mathematics, IIT Bhubaneswar
2. Dr. Kamal Lochan Patra, Asso. Prof., School of Mathematical Sciences, NISER Bhubaneswar
3. Dr. Mahendra Kumar Gupta, Asst. Professor, Dept. of Mathematics, IIT Bhubaneswar

Teaching Associate:

1. Dr. Alok Kumar Sahoo, Asst. Prof., Bhadrak Auto. College, Bhadrak
2. Dr. Atish Kumar Sethy, Guest Faculty, Bhadrak Auto. College, Bhadrak
3. Dr. Nirmal Ch. Rout, Asst. Prof., Bhadrak Auto. College, Bhadrak
4. Mr. Rajendra Giri, Asst. Prof., N.C. College, Jajpur
5. Mr. Pabitra Ghadei, Lecturer, A. B. College, Basudevpur

Topic covered by Dr T. Nayak:

Dr. Nayak primarily discussed topics related to Complex Numbers, Sequences, and Series. He introduced several important mathematical concepts, theorems, and techniques required to solve problems, with particular emphasis on those useful for the Madhava Mathematics Competition (MMC). The concepts and theorems were carefully selected, keeping in mind the questions asked in previous years' MMC examinations. He also discussed similar theorems and illustrative problems to strengthen students' conceptual understanding and problem-solving abilities. During the classroom sessions, students learned various mathematical concepts and actively practised solving previous-year questions (PYQs) from the Madhava Mathematics Competition, gaining hands-on experience in applying theoretical knowledge to competition-level problems. Dr. Nayak also shared a worksheet on Complex Numbers, which provided students with further opportunities to practise and explore the concepts. The students enthusiastically participated in the discussions and thoroughly enjoyed the problem-solving and learning experience.

Topic covered by Dr K. L. Patra:

Dr. Patra conducted sessions on Elementary Number Theory, focusing on important concepts such as the Division Algorithm, Modular Division, Pigeonhole Principle, and Counting Principle. He discussed several previous-year questions (PYQs) from the Madhava Mathematics Competition (MMC), along with other illustrative problems related to these topics. The sessions introduced students to various interesting problem-solving techniques, including finding the last few digits of very large numbers and counting the number of possible functions. One of the most interesting aspects of his sessions was the application of the Pigeonhole Principle in several non-trivial and creative ways to solve mathematical problems. These discussions helped students appreciate the versatility and depth of this seemingly simple principle. Students enthusiastically explored these problems and learned several new concepts and techniques, making the sessions highly interactive and enjoyable.

Topic covered by Dr M. K. Gupta:

Dr. Gupta conducted sessions on Matrix Theory, focusing primarily on problems from previous years' Madhava Mathematics Competition (MMC) examinations. His lectures focused on PYQs, with detailed discussions of the underlying mathematical theories, concepts, and techniques needed to solve them. He discussed about 15 problems from previous years' examinations, covering key topics such as matrix rank and inverse, elementary row and column operations, eigenvalues, eigenvectors, and related concepts. Through these problem-oriented sessions, students gained a better understanding of the theoretical foundations and learned effective approaches to solving competition-level problems. Students particularly enjoyed exploring the geometric interpretation of eigenvalues and eigenvectors, which helped them develop a visual and intuitive understanding of these important concepts in Matrix Theory.

Session by Dr. A. K. Sahoo:

An assessment test was conducted at the beginning of the camp to evaluate the students' existing knowledge and understanding of the subject. This helped the instructors assess the students' levels and plan their sessions accordingly, making the teaching and learning process more effective. On the third day of the camp, Dr. Alok Kumar Sahoo conducted a dedicated one-hour session to provide individual feedback to students based on their performance in the initial assessment.

All the sessions were highly interactive, with resource persons and TAs actively engaging with students and helping them understand the concepts and apply them to solve problems. They provided

individual guidance and support while students worked on classroom exercises and homework assignments. To encourage further practice, each faculty member distributed a problem sheet containing approximately 15 questions, comprising previous-year questions (PYQs) and other problems relevant to the Madhava Mathematics Competition (MMC). These worksheets provided students with additional opportunities to strengthen their understanding and develop problem-solving skills.

Participants' details:

Sl. No.	Name of the College	Number of Participants
1	Atal Behari College, Basudevpur, Bhadrak	7
2	Baba Bhairabananda Autonomous Mahavidyalaya, Chandikhole, Jajpur	3
3	Bhadrak Autonomous College, Bhadrak	33
4	Buxi Jagabandhu Bidyadhar Autonomous College, Bhubaneswar	3
5	Charampa Mahavidyalaya, Charampa	3
6	Fakir Mohan Autonomous College, Balasore	2
7	Narasingh Choudhury Autonomous College, Jajpur	3
8	Rama Devi Women's University, Bhubaneswar	2
9	Shailabala Women's Autonomous College, Kataka	3
Total		59

The students thoroughly enjoyed the entire camp and actively participated in the academic sessions and interactive discussions. Along with the academic activities, special care was taken to provide nutritious and hygienic food to the participants throughout the camp, ensuring their comfort and well-being during the three days. The feedback received from the participants was highly positive. Many students expressed their appreciation for the overall learning experience, including the academic sessions, hospitality and food arrangements. They also conveyed their desire to have more such mathematics camps organized in this region, reflecting the need and importance of continued academic initiatives to nurture mathematical talent among undergraduate students.

We express our sincere gratitude to Dr. Alok Patel, Founder of DecisionOpt, for generously sponsoring the entire food arrangements for the camp. We are also thankful to Prof. V. M. Sholapurkar, National Coordinator of MMC, for selecting our college as a venue and extending valuable financial support to make the camp possible. A special thanks to Dr. Tarakanta Nayak, Regional Coordinator of MMC, for his constant guidance, encouragement, and wholehearted support throughout the camp, often going the extra mile to ensure its smooth organisation. All resource persons, TAs, faculty members and student volunteers of the Department of Mathematics at the host institution played an instrumental role in organising the camp and ensuring its smooth and successful conduct.

Finally, we extend our heartfelt thanks to the Department of Mathematics, student volunteers, hostel wardens, and the administration of Bhadrak Autonomous College for their dedicated efforts, cooperation, and all possible support in making the camp a success. Their collective contributions were instrumental in creating a comfortable, welcoming, and academically enriching environment for the participants.

Inauguration



Academic sessions

