



Empowering Minds Through Mathematics: A One-Day Outreach and Training Camp for Undergraduate Students

Department of Mathematics, Bhadrak Autonomous College, Bhadrak

In association with Institute of Mathematics and Applications,
Bhubaneswar

Summary Report

A one-day training cum outreach camp "***Empowering Minds Through Mathematics: A One-Day Outreach and Training Camp for Undergraduate Students***" was organized by Department of Mathematics, Bhadrak Autonomous College, Bhadrak in association with Institute of Mathematics and Applications, Bhubaneswar on February 16, 2025. A total 90 number of UG Mathematics students and 05 faculties from other colleges attended the Program from 14 different colleges of Odisha. The Program was coordinated by Dr. Alok Kumar Sahoo and all other members of Mathematics department played a vital role in organizing it and making the event successful.

Inauguration: (10.15 am - 10.45 am)

The August event was inaugurated by Dr. Durga Sankar Das, Principal, Bhadrak Autonomous College, Bhadrak and other dignitaries present on the dais by lighting the lamp before Lord Jagannath. Dr. Ajit Kumar Das, Head of the Mathematics Department, delivered the inaugural speech by introducing the guests and the resource persons to the participants. Principal, Dr. Das, highlighted the opportunities in higher education in Mathematics. Dr. Dinesh Chandra Dash, Admin Bursar of the college, emphasized the effectiveness of the program in developing problem-solving skills. He also spoke about the vision behind the Math-Odisha100 initiative, stating that this initiative would contribute not only to the development of Odisha but also to the progress of the entire nation. Then, Prof. Brundaban Sahu, School of Mathematical Sciences, NISER gave a brief introduction about the Math-Odisha100 initiative and its mission. At the end, vote of thanks was proposed by Smruti Ranjan Sahoo, Assistant Professor, BJB Autonomous College, Bhubaneswar. He also highlighted the work that has been done and also about those plans to be executed in coming days under the Math-Odisha100 Initiative.

Forenoon Session (10.45 am – 01.45 pm)

Prof. Utkal Keshari Dutta took the first session and discussed various number theory concepts like the theory of balancing number, Fibonacci sequence and highlighted S. Ramanujan's magic square and other work. This session becomes morning booster to participants for learning new ideas of Mathematics.

The second part of the session was conducted by Prof. Sahu, who discussed various problem-solving approaches in group theory. He encouraged students by sharing ideas on how to approach mathematical problems and solve them in simpler ways. Most of the questions discussed by him, were taken from the past NBHM entrance examination.

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Afternoon Session (02.45pm-04.15 pm)

In the first post-lunch session, Prof. Deepak Kumar Dalai, School of Mathematical Sciences, NISER addressed the participants on technique to solve some counting problems. The session had more interesting ideas about inclusion-exclusion principles with box and ball examples. The Theme of the Talk was, "How to distribute m - balls into n - boxes with different conditions?"

Career counselling session (04.15 pm-05.30 pm)

In the second post-lunch session, all the speakers involved in the Career Counselling session and assisted the participants for knowing the future aspects of Mathematics. During this session, attendees asked numerous questions about their careers in higher mathematics and discussed about different fellowship opportunities in India and abroad.

The theme of the session was "**Where and How!**" It sparked interest in mathematics among participants by addressing two key aspects:

- "**Where**" referred to where one can pursue higher studies, highlighting various reputed institutions in India and abroad, along with available scholarship options.
- "**How**" focused on how to get admission into various programs. Also, it refers, how to learn new concepts and develop problem-solving aptitude.

Closing Ceremony (05.30 pm -05.45 pm)

The one-day training camp concluded with gratitude extended to the funding agency, IMA Bhubaneswar. Additionally, the alumni of the department generously sponsored the travel expenses of participants from outside of Bhadrak district. At the end of the event, certificates along with the book *Higher Algebra* by Bernard and Child were distributed among the students. The event was formally concluded, followed by high tea.



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Sl no	College Name	Number of UG students Participated	Number of Faculties Attended from outside Bhadrak College
01	Bhadrak Autonomous College, Bhadrak	38	NA
02	Vyasanagar (Auto.) College, Jajpur Road	14	01
03	Charampa (Degree) College, Charampa	09	02
04	Ramadevi Women's University, Bhubaneswar	08	00
05	N. C. (Auto.) College, Jajpur	07	00
06	Banki (Auto.) College, Banki	05	00
07	Ekamra (Degree) College, Bhubaneswar	02	00
08	Kendrapara (Auto.) College, Kendrapara	01	00
09	IMA, Bhubaneswar	01	00
10	Dhamnagar (Degree) College, Dhamnagar	01	00
11	Christ (Degree) College, Cuttack	01	00
12	Ravenshaw University, Cuttack	01	00
13	Atal Bihari (Degree) College, Basudevpur	01	01
14	Baba Bhairavananda (Auto.) Mahavidyalaya, Chandikole	01	01
Total		90	05

Total Student Attended	ST	SC	OBC/SEBC	General	Male	Female
90	06	08	42	34	42	48



(Smruti Ranjan Sahoo, highlighting motto of the Math-Odisha100 Initiative)

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Title: Distribution Of Balls Into Boxes: A Technique To Solve Some Counting Problems

Speaker: Dr. Deepak Kumar Dalai, Associate Professor, School of Mathematical Sciences, NISER, Bhubaneswar

Title: Let us Solve

Speaker: Dr. Brundaban Sahu, Professor, School of Mathematical Sciences, NISER, Bhubaneswar



Title: Number Sequences: At a Glance

Speaker: Dr. Utkal Keshari Dutta, Assistant Professor, School of Applied Sciences KIIT University, Bhubaneswar

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(Addressing various questions asked by participants regarding career option)

