

Department of Mathematics

Research and Consultancy

1. Publication of Research Papers:

- **Dr. S.I. Unhale**

UGC listed journals	:	08
Peer reviewed journals	:	01
Non-peer reviewed journals	:	05
Conference proceedings	:	03

- **Mrs. N. R. Gharat**

Non-peer reviewed journals	:	04
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- **Mrs. M. A. Joshi**

Non-peer reviewed journals	:	01
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2. List of Publication of Research Papers:

- **Dr. S.I. Unhale**

- S.I. Unhale and S.D. Kendre; On existence and uniqueness results for iterative mixed integrodifferential equation of fractional order, *J. Appl. Anal.*, 26(2) (2020), 263-272 <https://doi.org/10.1515/jaa-2020-2023>.
- S.D. Kendre and S.I. Unhale; On existence, uniqueness and Ulam's stability results for boundary value problems of fractional iterative integrodifferential equations, *Journal J. Appl. Math. Comput.*, 64 (2020), 503–517, <https://doi.org/10.1007/s12190-020-01366-z>.
- S.I. Unhale and S.D. Kendre; On Existence and Uniqueness results for iterative fractional integrodifferential equation with deviating arguments, *Applied Mathematics E-Notes*, 19(2019), 116-127.
- S.I. Unhale and S.D. Kendre; On Controllability of Mixed Iterative Integrodifferential Equations of Fractional Order, *Malaya Journal of Matematik*, 1 (2019), 679-688.
- S.I. Unhale and S.D. Kendre; Existence and Uniqueness Results for Iterative Volterra Integrodifferential Equation of Fractional Order, *Communications on Applied Nonlinear Analysis*, 25(1) (2018), 81-91.
- S.I. Unhale and S.D. Kendre; Numerical Solution of Nonlinear Fractional Integro-differential Equations by Collocation method, *Malaya Journal of Matematik*, 6(1) (2018), 73-79.
- S.I. Unhale; Numerical Solution of Nonlinear Fractional Integrodifferential Equation by Fractional Power Series Method, *Printing Area*, International Research Journal, Special Issue, 2018, 85-91.
- Subhash I. Unhale and Sadikali L. Shaikh; Applications of the Sumudu Transform to Groundwater Flow and Solute Transport Modelling, *International Journal of Research and Analytical Reviews*, 5(4) 2018, 554-558.
- S.I. Unhale and N.D. Mokal; An Assessment of Student Project using Fuzzy Logic based on Grading System, *Anugoonj*, (6), 2016-2017, 31-35.
- S.I. Unhale and N.D. Mokal; Evaluation of Faculty Performance by Using Fuzzy Logic in Educational Institutions, *Anugoonj*, (5), 2015-2016, 33-39.

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- S.I. Unhale and N.D. Mokhal; A New Approach for Fuzzy Traffic Signal Control, *Anugoonj*, (4), 2014-2015, 30-34.
- S.I. Unhale and N.D. Mokhal; Fuzzy Logic Control of Washing Machine, *Anugoonj*, (3), 2013-2014, 30-35.
- S.I. Unhale and M.A. Joshi; Fast Food: Need of Trend, *Anugoonj*, (2), 2012-2013, 62-64.
- Unhale S.I. and Chaudhary M.S.; On distributional generalised Laplace transformation', *The Journal of the Indian Academy of Mathematics*, 30 (2) 2008, 403-412.

• Publications in Conference Proceedings (03)

- Feedback Management System: Our Initiative
- Planning, Execution and feedback for effective Teaching-Learning process: Our Initiative
- Applications of Differential Equation for corruption & Population growth & decay

• Mrs. N. R. Gharat

- N.D. Mokhal and S.I. Unhale; An Assessment of Student Project using Fuzzy Logic based on Grading System, *Anugoonj*, (6), 2016-2017, 31-35.
- N.D. Mokhal and S.I. Unhale; Evaluation of Faculty Performance by Using Fuzzy Logic in Educational Institutions, *Anugoonj*, (5), 2015-2016, 33-39.
- S.I. Unhale and N.D. Mokhal; A New Approach for Fuzzy Traffic Signal Control, *Anugoonj*, (4), 2014-2015, 30-34.
- S.I. Unhale and N.D. Mokhal; Fuzzy Logic Control of Washing Machine, *Anugoonj*, (3), 2013-2014, 30-35.

• Mrs. M. A. Joshi

- S.I. Unhale and M.A. Joshi; Fast Food: Need of Trend, *Anugoonj*, (2), 2012-2013, 62-64.

3. Books authored:

Dr. S.I. Unhale

- Calculus II, Sheth Publication
- Computer Oriented Statistical Techniques, Sheth Publication
- Mathematical & Statistical Techniques-I, Sheth Publication
- Mathematical & Statistical Techniques-II, Sheth Publication
- Mathematical & Statistical Techniques, Sem. I, Universal Publishing House
- Mathematical & Statistical Techniques, Sem II, Universal Publishing House

Mr. S. L. Khairnar

- Mathematical & Statistical Techniques-I, Sheth Publication
- Mathematical & Statistical Techniques-II, Sheth Publication

Mrs. N. R. Gharat

- Calculus II, Sheth Publication

Mrs. M. A. Joshi

- Computer Oriented Statistical Techniques, Sheth Publication

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4. Minor Research Project Completed:

- **Dr. S.I. Unhale & Mrs. M. A. Joshi**

Title of the project	Date of sanction	Duration	Grant received	Funding agency
Export of Marine Product: Time Series Model	11/01/2012	2 Years	2,00,000/-	UGC
Road Accidents and Preventive Management in Ghats Sections: A Statistical Study	16/01/2017	1 Year	25,000/-	University of Mumbai
A Statistical Study on Road Accidents and Awareness of Preventive Measures	2020	1 Year	1,00,000/-	RUSA

5. Membership:

- **Dr. S. I. Unhale**
 - Member, 'The Journal of the Indian Academy of Mathematics ' Indore
 - Member, 'Indian Mathematical Society ' Aurangabad
 - Member, 'Bombay Mathematical Colloquium'

6. Oral Presentations by the Faculty

- **No. of Oral Presentations:**
- **Dr. S.I. Unhale**

International Level	03
National Level	04
State Level	03
Total	10

- **Mrs. N.R. Gharat**

State Level	01
Total	01

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7. Open Educational Resources developed by Department of Mathematics

- Mr. S. L. Khairnar

Sr. No.	Title	Platform	Link	Licence
1	Poisson Distribution	OER COMMONS	https://www.oercommons.org/courses/probability-distribution	CC-BY
2	Binomial Distribution	OER COMMONS	https://www.oercommons.org/courses/binomial-distribution	CC-BY-SA
3	Poisson Distribution	CANVAS COMMONS	https://lor.instructure.com/resources/7e60948dd44042f3add12e09fae9ae6c	CC-BY
4	Binomial Distribution	CANVAS COMMONS	https://lor.instructure.com/resources/d81443656a0b4d8aad11d02cc4ac1119?shared	CC-BY-SA
5	Normal Distribution	CANVAS	https://canvas.instructure.com/enroll/9NBDXB .	CC-BY
6	Learning Normal Distribution with MS Excel	OER COMMONS	https://www.oercommons.org/courseware/lesson/66859	CC-BY-SA
7	Learning Poisson Distribution with MS Excel	OER COMMONS	https://www.oercommons.org/courseware/lesson/66746	CC-BY-NC
8	Probability Distribution(MST2)	CANVAS	https://canvas.instructure.com/enroll/HJ69LE .	CC-BY
9	Permutation	CANVAS	https://canvas.instructure.com/enroll/G3W9KW	CC-BY
10	Probability Distribution	EDUNEXT	https://cktmathonline.edunext.io/	--

8. E-Content link

- ✓ <https://www.youtube.com/channel/UCJ6wpclYvBZRRmr7xpSZ6Pg>