

Department of Mathematical Sciences

The Department of Mathematical Sciences is offering Post-Graduate and Doctoral programs in Mathematics. A comprehensive curriculum has been designed to groom the students into qualitative scientific manpower. Elective subjects are provided to students enabling them to enhance mathematical skills. Faculty members of the Department are highly research oriented and update themselves by active participation in National and International conferences.

Programme Offered:

Programme	Intake	Duration
M. Sc. (Mathematics)	25	02 Years
Ph. D	As per UGC Norms	

Research Areas:

- Continuum Mechanics
- Numerical Analysis
- Wavelet Theory in Differential Equations
- Information Theory & Coding
- Number Theory

Research Laboratory:

The Department has well equipped Numerical Simulation Lab having latest computer algebra systems like MATLAB, MATHEMATICA and MAPLE.

Faculty Members

Name	Designation	Specialization	Experience
Dr. Ashish Arora	Associate Professor & Head	Continuum Mechanics	17 Years
Dr. Rajesh Narula	Assistant Professor	Information Theory & Coding	20 Years
Dr. Harpreet Kaur	Assistant Professor	Wavelet Theory in Differential Equations	4 Years
Dr. Gurjinder Singh	Assistant Professor	Numerical Analysis	8 Years
Dr. Sukhjot Singh	Assistant Professor	Numerical Analysis	4 Years
Dr. Megha Goyal	Assistant Professor	Number Theory	4 Years

Projects undertaken by Faculty:

Projects	Sanctioned Amount	Funding Agency	Investigator
Waves in composite solid matrix saturated by multiple fluids	22 Lakh	Council of Scientific and Industrial Research	Dr. Ashish Arora
New Numerical Schemes to solve Initial Value Systems of Ordinary Differential Equations	5 Lakh	TEQIP-II	Dr. Gurjinder Singh

Research Scholars:

Name	Title of the thesis	Ph.D. Supervisor
Abhishek	Body waves in porous media	Dr. Ashish Arora
Neeru	Reflection amplitudes of seismic waves	Dr. Ashish Arora

Faculty Participation/ Paper Presentation/invited talks in Conferences:

- Arora, Ashish (2016), attended “**International Congress of Mathematics Education (ICME)**”, organized by International Mathematical Union at Hamburg, Germany.
- Arora, Ashish (2014), attended “**International Congress of Mathematicians (ICM)**”, organized by International Mathematical Union at Seoul, South Korea.
- Goyal, Megha (2018), "**Combinatorial Identities Related to Rogers-Ramanujan Identities**" presented at Conference on Recent trends and Innovations in Pure and Applied Mathematics, Jalandhar, India.
- Kaur, Harpreet (2018), “**A Wavelet Technique for Solving a Fractional Differential Equation Based on Micro-Electro Mechanical System**”, presented at International Conference in Conjunction with 14th Biennial Conference of ISIAM, GNDU Amritsar, India.

Departmental Academic Activities

The department is in continuous endeavour to raise Mathematical skills and teaching-learning standards. In this process department has conducted Advanced Instructional School in Engineering Mathematics, Workshop on Mathematica, Latex and Maplesoft. Mathematics day is celebrated every year in the department to commemorate the birth of great Indian Mathematician S. Ramanujan. Department is also in process of unfolding diversified and new branches of Mathematics and has conducted workshops on traditional Indian Mathematics.

Faculty Publications

- Painulay, Abhishek and Arora, Ashish (2018), “**Reflection and ‘Transmission of Inhomogeneous Waves in a Composite Porous Solid Saturated by Two Immiscible Fluids’**”, *Geophysical Prospecting*, Volume 66, Issue 01, 182-196.

- Narula, Rajesh Kumar, Vinocha, O.P, Singh, Mandev (2017), “**Error Detection and Properness of a Dual Code**”, *Aryabhata Journal of Mathematics and Informatics*, Volume 9, Issue 02, 63-68.
- Kumar, Ratesh, Kaur Harpreet and Arora, Geeta (2017) “**Numerical Solution by Haar Wavelet Collocation Method for a Class of Higher Order Linear and Nonlinear Boundary Value Problems**”, *AIP Conference Proceedings*, Volume 1860, Issue 01, 1-12.
- Singh, Gurjinder, Ramos, Higinio, Kanwar, V. and Bhatia, Saurabh (2017), “**An Embedded 3(2) Pair of Nonlinear Methods for Solving First Order Initial-Value Ordinary Differential Systems**”, *Numerical Algorithms*, Volume 75, Issue 03, 509-529.
- Kumar, Abhimanyu, Gupta, D. K., Martinez, E., and Singh, Sukhjit (2018): “**Semilocal Convergence of a Secant-Type Method Under Weak Lipschitz Conditions in Banach Spaces**”, *International Journal of Computational Methods*, Volume 330, 732-741 .
- Goyal, Megha (2017), “**On combinatorial Extensions of Rogers-Ramanujan Type Identities**”, *Contributions to Discrete mathematics*, Volume 12, Issue 02, 33-51.









