

**INTEGRAL UNIVERSITY, LUCKNOW**

**DEPARTMENT OF MATHEMATICS**

**M.Sc. (Mathematics)**

**Program Educational Objectives (PEOs)**

1. To equip students with knowledge, abilities and insight in Mathematics and related fields.
2. To develop the ability to utilize the mathematical problem solving methods such as analysis, modeling, and programming and mathematical software applications in addressing the practical and heuristic issues.
3. Have significant opportunities in various service domains at national and international levels like banking, insurance, government jobs, consultancy, teaching, defence, industry, research and entrepreneurial pursuit.
4. Providing an education that focuses on communication skills, the ability to lead a team, devoted to solve the problems of society.
5. Develop reputed professionals in the field of Mathematics with an ethical attitude and the ability to engage in lifelong learning.

**Program Specific Outcomes (PSOs)**

1. Understand the mathematical concepts and applications in the field of algebra, analysis, computational techniques, optimization, differential equations, differential geometry and fluid dynamics etc.
2. Develop proficiency in analyzing, applying and solving mathematical problems.
3. Acquire knowledge in recent developments in various branches of mathematics and participate in conferences / seminars / workshops and thus pursue research.
4. To be in a noble profession of teaching and helping in nation building.

**PROGRAM OUTCOME (PO)**

**M. Sc. (Mathematics)**

<b>PROGRAM OUTCOME (PO)</b>	<b>DESCRIPTION</b>
<b>PO1</b>	<b>Critical thinking:</b> In depth knowledge of basic fundamentals of pure and applied mathematics. Capability to demonstrate knowledge and understanding of major mathematical concepts, theoretical principles and experimental findings. Ability to use mathematical tools and techniques with fundamental analysis to employ critical thinking and efficient problem solving skills in pure and applied mathematics.
<b>PO2</b>	<b>Effective Communication:</b> Excellent communication skills to transmit complex technical information related to mathematics in a clear and concise written and verbal manner as oral presentations and compilation in the form of scientific reports.
<b>PO3</b>	<b>Social Interaction:</b> Comprehend to apply mathematical principles and ethics to assess societal and cultural issues related to life.
<b>PO4</b>	<b>Effective Citizenship:</b> Imbibe moral and social values in personal and social life leading to highly cultured and civilized personality.
<b>PO5</b>	<b>Ethics:</b> Students will be able to recognize the ethical component of complex situations. Acquired with awareness of work ethics and ethical issues in mathematical research as well as plagiarism policies.
<b>PO6</b>	<b>Environment and Sustainability:</b> Advanced knowledge of fundamentals of mathematics with enhanced command over modern mathematical methods, techniques equipped with environment safety measures.
<b>PO7</b>	<b>Self-directed and Lifelong learning:</b> Students will be capable of self-paced self-directed learning aimed at personal development and for improving knowledge/skill development. They will keep themselves updated with the best international practices and latest development in technologies, which will help them to gain a broader global perspective of the subject. Develop awareness of the role and importance of applied and pure mathematics in interdisciplinary research as well as in daily life.
<b>PO8</b>	<b>Research related skills:</b> Develop ability to adopt changing scientific environment in the process of sustainable development by using mathematical tools.