

## **LEARNING OUTCOME**

### **Three Years Degree Course**

#### **B. A. MATHEMATICS HONS.**

##### **1. Knowledge and Understanding:-**

- This programme course is most beneficial for students who have a strong interest and background in Science and Mathematics.
- The course is also beneficial for students who wish to pursue multi and inter-disciplinary science careers in future.
- To enhance the understanding of the course is to develop those parts of the theory that are prominent in application of the subject.
- Create deep interest in learning mathematics.
- Develop broad and balanced knowledge and understanding of definitions, concepts, principles and theorems.
- Familiarize the students with suitable tools of mathematical analysis to handle issues and problems in mathematics and related sciences.
- Enhance the ability of learners to apply the knowledge and skills acquired by them during the programme to solve specific theoretical and applied problems in mathematics.
- Provide students/learners sufficient knowledge and skills enabling them to undertake further studies in mathematics and its allied areas on multiple disciplines concerned with mathematics.
- Encourage the students to develop a range of generic skills helpful in employment, internships and social activities.
- Capability of demonstrating comprehensive knowledge of mathematics and understanding of one or more disciplines which form a part of an undergraduate programme of study.

##### **2. Communications skills:-**

- Ability to communicate various concepts of mathematics effectively using examples and their geometrical visualizations.

- Ability to use mathematics as a precise language of communication in other branches of human knowledge.
- Ability to communicate long standing unsolved problems in mathematics.
- Ability to show the importance of mathematics as precursor to various scientific developments since the beginning of the civilization.
- Ability to explain the development of mathematics in the civilizational context and its role as queen of all sciences.

### **3. Cognitive Skill:-**

- Capability to solve problems in computer graphics using concepts of linear algebra.
- Capability to solve various models such as growth and decay models, radioactive decay model, drug assimilation, LCR circuits and population models using techniques of differential equations.
- Ability to solve linear system of equations, linear programming problems and network flow problems.
- Ability to provide new solutions using the domain knowledge of mathematics acquired during this programme.
- Capability for inquiring about appropriate questions relating to the concepts in various fields of mathematics.
- Capability to use appropriate softwares to solve system of equations and differential equations.
- Capability to understand and apply the programming concepts of C++ to mathematical investigations and problem solving.
- Ability to identify unethical behaviour such as fabrication, falsification or misrepresentation of data and adopting objective, unbiased and truthful actions in all aspects.

### **4. Graduate Attributes:-**

- Demonstrate fundamental systematic knowledge of mathematics and its applications in engineering, science, technology and mathematical sciences. It should also enhance the subject specific knowledge and help in creating jobs in various sectors.

- Demonstrate educational skills in areas of analysis, geometry, algebra, mechanics, differential equations etc.
- Apply knowledge, understanding and skills to identify the difficult/unsolved problems in mathematics and to collect the required information in possible range of sources and try to analyse and evaluate these problems using appropriate methodologies.
- Fulfil one's learning requirements in mathematics, drawing from a range of contemporary research works and their applications in diverse areas of mathematical sciences.
- Apply one's disciplinary knowledge and skills in mathematics in newer domains and uncharted areas.
- Identify challenging problems in mathematics and obtain well-defined solutions.
- Exhibit subject-specific transferable knowledge in mathematics relevant to job trends and employment opportunities.
- Students completing this programme will be able to present mathematics clearly and precisely, make vague ideas precise by formulating them in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non-mathematicians.
- This programme will also help students to enhance their employability for government jobs, jobs in banking, insurance and investment sectors, data analyst jobs and jobs in various other public and private enterprises.