Government Post Graduate College Thalisain, Pauri Garhwal

B. Sc

Mathematics Department

Program Outcome:

PO1: It is given in-depth knowledge of geometry, algebra, calculus, differential equation and several other branches of pure and applied mathematics. This also leads to study the related aread such as computer science and other allied subjects.

PO2: The skill and knowledge gained in this programme will be modeling and solving of real life problems

PO3: Students will become employable in various government and private sector.

PO4: The completing this programme develop enhanced quantitative skills and pursuing higher mathematics and research as well.

PO5: The completion of this programme will enable the learner to use appropriate digital programmes and software to solve various mathematical problems.

Course Outcome
B.Sc. Semester-I Paper-I
Course Title: Matrices, Trigonometry and Differential Calculus

CO1: The programme outcome is to given knowledge for the students to understand basics of mathematics including applied aspect for developing enhanced quantitative skills pursuing higher mathematics and research as well.

CO2: By the time students complete the course they will have wide ranging application of the subject and have to the knowledge of matrices and basics of differentiation.

CO3: The student will be able to sum the trigonometric series of real and complex numbers and separate the trigonometric function in form of A+iB.

CO4: The main objective of the course is to equip the student will necessary analytic and technical skills. By applying the principles of differentiation, he learn solve a variety of practical problems in science engineering.

CO5: The student is equipped with standard concepts and tools at an Intermediate to advance level that will towards taking more advance level course in mathematics.

B.Sc. Semester-I, Paper-II
Course Title: Practical

CO1: The main objective of the course is too familiar the student with different computer software such as Mathematics/MATLAB/Maple/Scilab/Maxima etc.

CO2: The students will be able to compute various operation on matrics by using different computer software such as Mathematics/MATLAB/Maple/Scilab/Maxima etc.

CO3: The student will also be able to compute n^{th} derivative of various function by using different computer software.

B.Sc. Semester-II, Paper-I
Course Title: Integral calculus and Vector Analysis.

CO1: The Programme outcome is to give knowledge for the students to understand basics of mathematics including applied aspect for developing enhanced quantitative skills and pursuing higher mathematics and research as well.

CO2. By the time students complete the course they will have wide ranging application of the subject and have the knowledge of surface area and volume of shapes.

CO3: The main of the course is to equip the student with necessary analytic and technical skills. By applying the principle of integral he learns to solve variety of practical problems in science and engineering.

CO4: The student is equipped with standard concepts and tools at an intermediate to advance level will serve him well towards taking more advance level course in mathematics.

B.Sc. Semester-III, Paper-I
Course Title: Group Theory and Analytical Geometry

CO1: Group theory is one of the building blocks of modern algebra. Objective of this course is to introduce students to basic concepts of Group and their properties.

CO2: This course will lead the student to basic course in advance mathematics and geometry.

CO3: The subjects learn and visualize the fundamental ideas about coordinate geometry and learn to describe some surface by using analytical geometry.

CO4: On successful completion of the course students have gained knowledge about regular geometrical figures and their properties. They have the foundation for higher course in geometry.

CO5: On successful completion of the course students have knowledge about higher different mathematical methods and will help him in going for higher studies and research.

B.Sc. Semester-IV, Paper-I
Course Title: Ordinary Differential Equations and Ring Theory

CO1: The objective of this course is to familiarize the students with various methods of solving differential equations of first and second order and to have qualitative applications.

CO2: A student doing this course is able to solve differential equations and is able to model problems in nature using ordinary differential equations. After completing this course, a student will be able to take more courses on wave equation etc.

CO3: Ring theory is one of the building areas of modern algebra. Objective of this course is to introduce students to basic concepts of Ring. Integral domain and other students with their properties. This course will lead the student to basic course in advance mathematics and algebra.

B.Sc. Semester-V, Paper-I
Course Title: Real Analysis, Functions of several variables and Partial Differential Equations.
CO1: Students will be able to know the basic concepts and development of real analysis which will prepare the students to take up further applications in the real fields.
CO2: On successful completion of the course students should have knowledge about real analysis and will help him in going for higher studies and research.

CO3: The main objective of the course is to equip the student with necessary analytic and technical skills.

CO4: The course is partial differential equation intends to develop problem solving skills for solving various types of partial differential equation especially hyperbolic, parabolic and elliptic types of PDE.

B.Sc. Semester-V, Paper-II
Course Title: Mathematical Methods and Graph Theory
CO1: The student will be able to find the integral transform, Laplace transform, inverse Laplace transform and Fourier transform. The course in mathematical methods basically develops a solving skill in the students.
CO2: Upon successful completion, students will have the knowledge of various types of graphs. This course covers basic concepts of graphs used in computer science and other disciplines. The topic include path, circuits, adjacency matrix, tree, coloring. After successful completion of this course the student will have the knowledge graph coloring, color problem, vertex coloring.

B.Sc. Semester-V, Paper-III
Course Title: Numerical Analysis and Operations Research
CO1: After Successful completion of this course the student will be able to perform error analysis for arithmetic operations.
CO2: Upon successful completion, student will be able to understand the use of interpolation and curve fitting and finite differences.

CO3: After successful completion of this course students will be able to use some solution methods for solving the linear programming problems.

B.Sc. Semester-VI, Paper-I
Course Title: Complex Analysis and Mechanics

CO1: The course is aimed at exposing the students to foundation of analysis which will be useful in understanding various physical phenomena and gives student the foundation in mathematics.

CO2: Upon successful completion, students will be able to understand the complex variables, analytic functions, complex integration and residues.

CO3: The object of the paper is to give students knowledge of basic mechanics such as a simple harmonic motion, motion under other laws and forces.

CO4: The student, after completing the course can go for higher problems in mechanics such as hydrodynamics, this will be helpful in getting employment in industry.

B.Sc. Semester-VI, Paper-II
Course Title: Linear Algebra and Metric Spaces

CO1: Linear algebra is a basic course in almost all branches of science. The objective of this course is to introduce a student to the basics of linear algebra and some of its applications.

CO2: After Successful completion of this course, students should be able to understand the concept of linear transformation.

CO3: On successful completion of the course students should have knowledge about spaces, connectedness and compactness.