

Department of Mathematics

Mission Statement

Department of Mathematics was established right with the establishment of the college. Our first principal, D.B.Wagh was a mathematician. He has taken care that our library is well equipped with the sufficient books on the subject. Also we have had very good faculty to the date. When our college opted for autonomy, the department of mathematics decided to come up with student oriented undergraduate program.

1. Unless one does post-graduation in mathematics, it is very difficult to understand the subject. Hence our main focus is on making our students eligible for post graduate program. Papers offered as core and electives suffice the requirements of almost all universities.
2. As our record shows almost all our students have joined teaching profession. Hence our core papers are the ones that make basic concepts, which are essential for school as well as for higher secondary clear. Thus we have two elective papers in mathematical education.
3. A very few students have done research. Keeping that in mind we are running some papers which will give them ample insight to the subject and prompt them to go deeper and do some research.
4. We are also have a program in B.Sc. Statistics that is first time in Goa University.
5. Some elective papers we float are application based that are very important for MBA program and also are useful if one takes computer as his/her career.
6. The teaching method used is chalkboard. Having said that one must note that it consists mainly problem solving practices and regular assignments. Reading Text Books and solving problems from it is very important.

Program Specific Outcomes

Each graduate in mathematics should be able to

1. Demonstrate fundamental systematic knowledge of mathematics and its applications.
2. Demonstrate educational skills in areas of analysis, geometry, algebra, differential equations etc.
3. Apply knowledge, understanding and skills to identify the difficult/unsolved problems in mathematics.
4. Apply one's knowledge and skills in mathematics in newer domains and uncharted areas.
5. Identify challenging problems in mathematics and obtain well defined solutions.
6. Exhibit subject-specific transferable knowledge in mathematics relevant to job trends and employment opportunities.

Course Structure for Mathematics Major

	Core	Core					
Sem-I	Basic Algebra	Basic Real Analysis	-----	-----	-----	-----	
Sem-II	Coordinate Geometry	Mathematical Analysis	-----	-----	-----	-----	
			Elective-I	Elective-II	Elective-III	Elective-IV	Elective-IV
Sem-III		Differential Equations- I	Abstract Algebra-I	Number Theory-I	Combinatorics	Numerical Methods	
Sem-IV		Linear Algebra	Advanced Analysis	Abstract Algebra-II	Operations Research	Cryptography	
Sem-V		Functions of Several Variables	Metric Spaces	Differential Equations-II	Graph Theory	Pedagogy of Mathematics	
Sem-VI		Vector Analysis	Complex Analysis	Number Theory-II	Probability Theory	Computers for Mathematics	Computational Linear Algebra

Course Structure for Mathematics Minor

Semester	Core (Minor)
I	Basic Algebra
II	Coordinate Geometry
III	Real Analysis/ Differential Equations –I
IV	Mathematical Analysis/ Linear Algebra
V	Graph Theory / Numerical Methods
VI	Operations Research/ Probability Theory/ Vector Calculus

literacy								
Digital literacy				✓			✓	✓
Self- directed learning	✓	✓	✓	✓	✓	✓	✓	✓
Lifelong learning	✓	✓	✓	✓	✓	✓	✓	✓
Professional skills	✓	✓	✓	✓	✓	✓	✓	✓
Applicational skills		✓	✓	✓	✓	✓	✓	✓
Experimental learning	✓	✓					✓	✓
Employability options							✓	✓

Programme Outcomes	Metri c Spaces	Differenti al Equations II	Graph Theor y	Pedagogy of Mathematic s	Comple x Analysi s	Numbe r Theory II	Theory of Probabilit y	Computational Linear Algebra
Disciplinary knowledge	✓	✓	✓	✓	✓	✓	✓	✓
Communication skills	✓	✓	✓	✓	✓	✓	✓	✓
Critical thinking	✓	✓	✓		✓	✓	✓	✓
Analytical reasoning	✓	✓	✓		✓	✓	✓	✓
Problem solving	✓	✓	✓	✓	✓	✓	✓	✓
Research related skills							✓	
Information literacy	✓	✓	✓	✓	✓	✓	✓	✓
Digital literacy				✓			✓	✓
Self- directed learning	✓	✓	✓	✓	✓	✓	✓	✓
Lifelong learning	✓	✓	✓	✓	✓	✓	✓	✓
Professional skills	✓	✓	✓	✓	✓	✓	✓	✓
Applicational skills		✓	✓	✓	✓		✓	✓
Experimental learning	✓	✓	✓	✓	✓		✓	
Employability options				✓			✓	