



# BASIRHAT COLLEGE

*Department of Mathematics*

## **Add-on Course: History of Mathematics**

### Objectives:

The objective of this course is to help the students to develop a deeper understanding of some well-known topics of mathematics, which are already studied in previous classes without seeing how those were developed over different time period and in various places. This course would encourage students for imaginative and flexible thinking by allowing them to see chronological evidence that there are dissimilar and perfectly valid techniques for observing ideas and executing computations. Also, the course permits students to view the great prosperity of mathematics that deceits before them and inspires them for continue studying the subject. The objectives (and outcomes) for this course include vibrant, precarious, imaginative and flexible thinking; and a gratitude for the gorgeousness and delight of mathematics.

### Eligibility:

All the students of Basirhat College having mathematic as a subject in Honours or Programme are eligible. Students from other disciplines may apply for this course, but these applications may be considered as per decision of HOD on the basis of their interest level.

### Registration:

Interested students are directed to apply in plain A4 page to the HOD, dept. of Mathematics, Basirhat College.

### Course Fee:

Free

### Course Structure:

This course has 9 modules planned in 30 hours. The course will be taught in zero hours. Every student will get a course completion certificate subject to at least 80% of total attendance.

*Plan of the course:*

<b>Days</b>	<b>[Module-1] Theorem of Pythagoras</b>	<b>Hour</b>
Day 1	Pythagorean Triples	1
Day 2	Rational Points on the Circle	1
Day 3	Right-Angled triangles	1
Day 4	Irrational Numbers	1
Day 5	The Definition of Distance	1
	<b>[Module-2] Greek Geometry</b>	
Day 6	The Regular Polyhedra	1
Day 7	Ruler and Compass Constructions	1
Day 8	Conic Sections	1
	<b>[Module-3] Greek Number Theory</b>	
Day 9	Polygonal, Prime, and Perfect Numbers	1
Day 10	The Euclidean Algorithm	1
Day 11	Pell's Equations	1
	<b>[Module-4] Number theory in Asia</b>	
Day 12	The Chinese Remainder Theorem	1
Day 13	Linear Diophantine Equations	1
Day 14	Pell's Equations in Brahmagupta	1
Day 15	Rational Triangles	
	<b>[Module-5] Polynomial Equations</b>	
Day 16	Linear equations and Eliminations	1
Day 17	Quadratic equations and irrationals	1
Day 18	The solution of the Cubic	1
Day 19	Higher-Degree Equations	1
	<b>[Module-6] Analytical Geometry</b>	
Day 20	Algebraic curves	1
Day 21	Newton's Classification of Cubic	1
Day 22	Constructions of Equations, Bezout's Theorem	1
	<b>[Module-7] Calculus</b>	
Day 23	What is Calculus? Early results on Areas and Volumes	1
Day 24	Newton's calculus of series	1
Day 25	The Calculus of Leibniz	1
	<b>[Module-8] Infinite Series</b>	
Day 26	Early result and power series	1
Day 27	Generating functions	1
Day 28	The Zeta function	1
	<b>[Module-9] Complex Numbers</b>	
Day 29	Impossible numbers and quadratic equations	1
Day 30	Walli's attempt at geometric representation	1
Day 31	Fundamental theorem of algebra	1
Day 32	Conformal mapping	1
	<b>Total Hours</b>	<b>32</b>

*Course Outcomes:*

- The students will be able to feel the essence of well-known mathematicians and their contribution with the progression of civilization.
- The students will be encouraged for imaginative and flexible thinking by chronological evidence.
- To view the great prosperity of mathematics that inspires them to continue studying the subject.