



S. R. D. S. P. Mandal's
Shri Pancham Khemraj Mahavidyalaya,
Sawantwadi-416510
(Autonomous)
Affiliated to University of Mumbai



SYLLABUS FOR AEC

Name of the Programme: B. Com. (Banking & Insurance)

Board of Studies in Mathematics

Name of the Course (Semester - I)	Mathematics for Competitive Exams – I
Name of the Course (Semester - II)	Mathematics for Competitive Exams - II
To be implemented from Academic Year	2026-2027

Syllabus for Semester I & Semester II

Reference: GR dated 20th April, 2023 for Credit Structure of UG



University of Mumbai

S. R. D. S. P. Mandal's

SHRI PANCHAM KHEMRAJ MAHAVIDYALAYA

SAWANTWADI

(An Autonomous College)

DIST: SINDHUDURG- 416 510, MAHARASHTRA

DEPARTMENT OF MATHEMATICS

Syllabus

Sr. No.	Heading	Particulars
1.	Title of the Program	B. Com. (Banking & Insurance)
2.	Eligibility for Admission	H. S. C. with Commerce Stream
3.	Passing Marks	40%
4.	Ordinance/Regulations (if any)	-
5.	No. of Years/Semesters	3 Years/ Two Semesters
6.	Level	UG
7.	Pattern	Semester
8.	Status	New
9.	To be implemented from Academic Year	2026-2027

Date:

HoD,
Dept. of Mathematics

S. R. D. S. P. Mandal's
Shri Pancham Khemraj Mahavidyalaya, Sawantwadi (Autonomous)

Sr. No.	Name of the Faculty	Category	Designation
01	Dr. Vishwas Pandurang Sonalkar	12.5 (1)	HoD/ Chairman
02	Miss. Tanvi Dilip Shinde	12.5 (2)	Member
03	Miss. Chinmay Anil Salgaonkar		Member
04	Dr. Kishor D. Kucche	12.5 (3)	Member
05	Dr. Jervin Zen Lobo		Member
06	Dr. Shridhar Krishna Pawar	12.5 (4)	Member
07	Asst. Prof. Sagar Balavant Patil	12.5 (5)	Member
08	Miss. Shreya Shripad Bhagwat	12.5 (6)	Member
09	Dr. Subhash Ishwar Unhale	12.5 (7)	Member

CREDIT STRUCTURE

Semester	Course Code	Title of the Course	Type	Credits
I (Level 4.5)	BIAEC104	Mathematics for Competitive Exams – I	Theory	02

Course Objectives (CO):

- To understand the Basic concepts in Mathematics viz. Number system, Arithmetic and measures of central tendencies.
- To use different tricks to solve the problems of Mathematics in Competitive Examinations.
- To strengthen the ability to draw logical conclusions.

Course Outcomes: After completion of the course, students will be able to:

- Understand the Basic concepts in Mathematics viz. Number system, Arithmetic and measures of central tendencies.
- Build the fundamentals of basic mathematics for competitive examinations.
- Establish a framework to help learners acquire knowledge and expertise necessary to secure employment opportunities in the Government sector.

TEACHING PATTERN FOR SEMESTER - I AND SEMESTER - II

1. Two lectures per week.

MODULE 1	ARITHMETIC AND NUMBER SYSTEM (15 HOURS)
	Percentages, Profit and Loss. Mixtures and Allegation, Ratio and Proportion, Relation between Fraction and percentage, average, problems on numbers. Problems on ages. Introduction to Number system, Prime number, composite numbers, Factorial, Absolute value of a real number. BODMAS Rule, Laws of Indices, HCF and LCM for two numbers, relatively Prime numbers, related examples.
MODULE 2	MEASURES OF CENTRAL TENDENCIES (15 HOURS)
	Organizing Data, Frequency Distribution, Definition of Average, Arithmetic Mean, Mode, Geometric, harmonic mean and its usages. Arithmetic Mean, Median and Mode for grouped as well as ungrouped data. Using Histogram locate mode and using ogive locate median. Normal distribution, Variance and Standard Deviation.

References Books:

- 1) R. S. Aggarwal, Quantitative Aptitude for Competitive Examinations, S. Chand and company Ltd. Delhi, Revised Edition, 2025.
- 2) Kiran Prakashan, Text Book of Quickest Mathematics: Quantitative Aptitude and Numerical ability useful for All Competitive Exams, 5th Revised Edition, 2014.
- 3) Gupta S. C., Kapoor V. K., Fundamentals of Mathematical Statistics, Sultan Chand & Sons 12th Edition, 2020.
- 4) R. J. Shah, Mathematical Statistical Techniques (F. Y. B. Com.), Sheth publishers Pvt. Ltd. Mumbai, 3rd Edition, 2009.
- 5) A. V. Deshpande, A. P. Kumtha, Quantitative Methods - I (BBI First year: First Semester), Vipul Prakashan, Mumbai, 1st Edition 2016.
- 6) <https://sl1nk.com/3xetbml>

CREDIT STRUCTURE

Semester	Course Code	Title of the Course	Type	Credits
II (Level 4.5)	BIAEC204	Mathematics for Competitive Exams – II	Theory	02

Course Objectives (CO):

- To understand the concepts of interest, Annuity and arithmetical ability.
- To use different tricks to solve the problems of Mathematics in Competitive Examinations.
- To strengthen the ability to draw logical conclusions.

Course Outcomes: After completion of the course, students will be able to:

- Understand the concepts of interest, Annuity and arithmetical ability Build the fundamentals of basic mathematics for competitive examinations.
- Establish a framework to help learners acquire knowledge and expertise necessary to secure employment opportunities in the Government sector.

MODULE 1	INTEREST AND ANNUNITY	15 HOURS
	Simple Interest, Compound Interest (Nominal & Effective Rate of Interest), Calculations involving upto 4 time periods. Annuity, Periodic Payment, Annual Rent, Future value of an Annuity, Present Value of an Annuity. Types of annuities: Ordinary annuity, Annuity due, Perpetuity. Related examples. True Discount, Banker's Discount, examples. Equated Monthly Instalments (EMI) using reducing balance method. Related Examples.	
MODULE 2	ARITHMETICAL ABILITY	15 HOURS
	Partnership, Pipes and Cisterns, Time and work, Time and Distance, Boats and Streams. Related Examples. Problems on Trains. Alligation or Mixture problems. Problems on Races and Games of skill, Calendar, Clocks, Height and distance. Odd man out and Series.	

References Books:

- 1) R. S. Aggarwal, Quantitative Aptitude for Competitive Examinations, S. Chand and company Ltd. Delhi, Revised Edition, 2025.
- 2) Kiran Prakashan, Text Book of Quickest Mathematics: Quantitative Aptitude and Numerical ability useful for All Competitive Exams, 5th Revised Edition, 2014.
- 3) Gupta S. C., Kapoor V. K., Fundamentals of Mathematical Statistics, Sultan Chand & Sons 12th Edition, 2020.
- 4) R. J. Shah, Mathematical Statistical Techniques (F. Y. B. Com.), Sheth publishers Pvt. Ltd. Mumbai, 3rd Edition, 2009.
- 5) A. V. Deshpande, A. P. Kumtha, Quantitative Methods - I (BBI First year: First Semester), Vipul Prakashan, Mumbai, 1st Edition 2016.
- 6) <https://sl1nk.com/3xetbml>

EXAMINATION PATTERN FOR SEMESTER I AND SEMESTER II**Continuous Internal Evaluation (CIE): 20 Marks**

Sr. No.	Particulars	Marks
01	One Class Test.	15 Marks
02	Presentation/ Overall conduct as a responsible learner.	05 Marks
	Total	20 Marks

Semester End Examination (SEE): 30 Marks

Duration: 1 Hour		Marks: 30
Note: Attempt Any <u>TWO Questions.</u>		
	Q. 1 (a) Question on Unit I (b) Question on Unit I (c) Question on Unit I	15 Marks
	Q. 2 (a) Question on Unit II (b) Question on Unit II (c) Question on Unit II	15 Marks
	Q. 3 (a) Question on Unit I or Unit II (b) Question on Unit I or Unit II (c) Question on Unit I or Unit II	15 Marks
	Total	30 Marks