

4.2. College Requirements

4.2.1. Basic and Applied Sciences (EBA)

4.2.1.1. Compulsory Courses

EBA0201 Precalculus (for science section students)

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
None	1	1	2	2	0	0

COURSE AIM

- Understand permutations, combinations, and binomial theorem.
- Understand real numbers and complex numbers.
- Identify differential calculus and its applications.
- Understand lines and planes, and orthogonal projections.
- Explain the relationship between the derivative and the definite integral as it is expressed in both parts of the Fundamental Theorem of Calculus.
- Use derivatives and integrals to model and solve applied problems.
- Sketch graphs based on calculus concepts.
- Generate statistics knowledge by understanding the vectors, the forces, the moments, and couples.
- Differentiate between types of velocity and motion with their applications.

COURSE WEEKLY CONTENTS

- 1 Functions and Limits
- 2 Left and right limits and continuity of the functions
- 3 Basic rules of differentiation
- 4 Chain rule and some applications
- 5 Curve sketching
- 6 Integration as an inverse operation of integration
- 7 Permutations and combinations
- 8 The binomial theorem
- 9 Determinations and Applications
- 10 Complex numbers
- 11 Vectors Pt I
- 12 Vectors Pt II
- 13 Forces
- 14 Motion of particles in straight lines
- 15 Kinetic and potential energy

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		30	MARKS		→	30
8 to 12	←		20	MARKS		→	20
1 to 15	←		10	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

Textbook	Marvin Bittinger, Judith Beecher, David Ellenbogen, and Judith Penna, Precalculus: Graphs and Models, Pearson
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