

MATH-301: Mathematics-1

BS (1) Microbiology

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Course Objectives

Course Objectives

Specific Objectives of the Course: To prepare the students, not majoring in mathematics, with the essential tools of **algebra** to apply the **concepts** and the techniques in their respective disciplines.

Learning Outcomes

Learning Outcomes

On completion of this course, students will be able to understand the basic mathematics and know about their **applications** .

Course Outline

1.Preliminaries

Numbers : real number system, complex number system.

Sets : definitions of set, set operations.

Functions : definition of functions, types of functions.

2.Introduction to Matrices

- Types of Matrices, eig vector, column.
- Matrix inverse.
- Determinant of matrices.
- System of linear equations.
- Cramer's rule.

3. Quadratic Equations

- Solution of quadratic equations,
- Qualitative analysis of roots of a quadratic equations,
- Equations reducible to quadratic equations,
- Cube root of unity, relation between roots and coefficient.

4. Sequences and Series

- Arithmetic Progressions,
- Geometric progression,
- Harmonic progression,

5. Binomial Theorem

- Introduction to mathematical induction,
- Binomial theorem with rational indices,

6. Trigonometry

- Fundamentals of trigonometry, trigonometric identities,

Recommended Books

Recommended Books

- ① Kaufmann, J.E., (1987) "College Algebra and Trigonometry", PWS-Kent Company, Boston.
- ② Swokowski, E.W., (1986) "Fundamentals of Algebra and Trigonometry" PWS-Kent Company, Boston.
- ③ Dolciani, M.P, Wooton, Beckenback, E.F., Sharon, (1978) "Algebra and Trigonometry" Houghton and Mifflin.
- ④ Ann Xavier Gantert, "Algebra 2 and Trigonometry", AMSCO SCHOOL PUBLICATIONS, INC.

Links

Links

You can download from github profile links below:

https://github.com/DostdarDost/Mathematics1_Lectures

Thank you!