

GRAPHIC ERA UNIVERSITY, DEHRADUN

Second Semester 2016-2017

Model Course Handout

Date: 10-01-2017

Course No. : MAB-201

Course Title: Advanced Mathematics

Instructor-in-Charge: Dr. Mukesh Kumar

Instructor(s):

Course Description

The course will enable the students to

1. To understand the basic concepts, definitions and terminology of Advanced Mathematics used in Bio Tech students.
2. To understand the need, and applications of Advanced Mathematics used in Bio Tech students.
3. To develop ability to apply these methods to perform differentiation and solve problems relating in Bio Tech students.
4. To be able to predict and apply the properties used in present discipline.
5. To be able to analysis the vectors in Biotech students.

Scope & Objective:

Upon successful completion of this course, the student will be able to:

1. Identify and use Mathematics and understand the significance of their application in the present branch in Bio Technology.
2. State and illustrate the application of Vector in the Bio Technology.
3. State and illustrate the application statistics in Biotech students.
4. Illustrate the application of probability in Bio tech students
5. Identify the use of elementary calculus to Biotech students.

TEXT BOOK(S):

1. Vashistha, A.R., Advanced Mathematics, Krishna Publications, 2009.
2. N. Piskunov, Differential & Integral calculus, Moscow Peace Publication. 1992
3. B.S. Grewal: Higher Engineering Mathematics, Khanna Publications, 2009

REFERENCE BOOKS:

1. Gupta, C B, Singh, S R, Kumar, Mukesh “Engineering Mathematics for Semesters I and II” McGraw Hill Education-2015.
2. Ramana, B V, Higher Engineering Mathematics, McGraw Hill Education.

Course Plan:

UNIT- I

Lecture 1-2 Explain the introduction and applications of advanced mathematics.

Lecture 3- 4 Successive differentiation and questions,

Lecture 5 Leibnitz’s theorem and based problems,

Lecture 6 Taylor’s and Maclaurin’s Theorems and based problems,

Lecture 7 -10 Functions of several variables, Partial differentiation, Euler’s theorem, and based problems.

UNIT- II

Lecture 11-12 Definition and formation of differential equations

Lecture 13- Equations of first order and first degree

Lecture 14-16 Variable separable, Homogeneous differential equations and based problems

Lecture 17-19- Linear differential equations and equations reducible to linear form with problems

UNIT- III

Lecture 20-22 Linear differential equations of second order with constant coefficients and based problems

Lecture 23-25 Methods of finding the complimentary function and based problems

Lecture 26-28- Methods of finding the particular integral and based problems

UNIT- IV

Lecture 29-30 Introduction of vectors: Addition, subtraction of vectors and based problems

Lecture 31-32 Product of two and three vectors with based problems

Lecture 33-36 Differentiation of vectors with based problems

UNIT- V

Lecture 37-39 Introduction of statistics: Range, Variance, and based questions

Lecture 40-42- Standard Deviation and Standard Errors with based problems

Lecture 43-45 Introduction to probability theory and simple based problems.

Evaluation Scheme:

Ec. No.	Component	Duration	Marks	Weightage (%)	Date & Time	Nature
1	Mid Term Test	2 Hrs	25	100		Close Book
2	End Term Test	3 Hrs	50	100		Close Book
3	Class Participation		5	100		
4	Assignment (S)		5	100	*	
5	Quiz/Surprise		5	100	**	
	Seminar Quiz/Group Discussion/Group Task		10	100		Open/Close Book

Note 1 *: A total of Five assignments will be given in the entire semester

Note 2 **: Five quizzes/surprise quizzes/case studies/group discussion/group task etc. will be conducted entire semester during the tutorial session. Out of these the performance of best four will be considered for final evaluation.

Chamber Consultation Hour: 3:30-4:30 PM Wednesday. Extra consultancy to be announced in the class.

Notices: All notices concerning this course will be displayed on the Department of Mathematics Notice Board

Instructor-in-charge

MAB-201