

# Syllabus for Bachelor of Agriculture

## MATHEMATICS

Subject code: 16MA0101

Subject Name: Elementary Mathematics

B.Sc. (Agri.), First Year (Sem.-I)

### Objective:

To provide preliminary knowledge of mathematics to the students.

**Credit Earned:** 2+0= 2 Credits

### Course Outcomes:

After completion of this course, student will be able to:-

1. Acquire basic knowledge about mathematics.

### Teaching and Evaluation Scheme

Teaching Scheme (hours)		Credits	Theory Marks			Practical Marks		Total Marks
Theory	Practical		ESE (E)	IA	CSE	Viva (V)	Term Work (TW)	
2	0	2	50	30	20	-	-	100

# Syllabus for Bachelor of Agriculture

## MATHEMATICS

### Contents:

Unit	Topics	Contact Hours
<b>Theory</b>		
1.	Differential Calculus: definition of function, limit and continuity, Simple problems on limit, simple problems on continuity, Differentiation of $x^n$ , $e^x$ , $\sin x$ and $\cos x$ from first principle.	4
2.	Derivatives of sum, difference, product and quotient of two functions	3
3.	Differentiation of functions of functions (Simple problem based on it)	3
4.	Logarithmic differentiation (Simple problem based on it),	1
5.	Maxima and Minima of the functions of the form $y=f(x)$ (Simple problem based on it).	2
6.	Integral Calculus: Integration of simple functions, Integration of product of two functions, Definite integral (Simple problem based on it ), Area under simple well-known curves (Simple problem based on it )	6
7.	Matrices and Determinants: Definition of matrices, addition, subtraction, multiplication, transpose and Inverse up to 3 <sup>rd</sup> order, Properties of determinants up to 3 <sup>rd</sup> order and their evaluation.	6

### Reference Books:

1. Mathematics for the biological sciences  
Arya J. C. and Larder R. W.
2. Integral calculus  
Shanti Narayan and Mital P. K.
3. Text book of Matrix Algebra  
Biawas S.

**Instructional Method:**

- a. The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board may also use any of tools such as demonstration, role play, quiz, brainstorming, MOOCs *etc.*
- b The internal evaluation will be done on the basis of continuous evaluation of students in the class-room.
- c. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.