AC – 20/04/2024
Item No. – 7.7 Sem. II (3a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Board of Studies in Business Economics	
UG First Year Programme	
Semester - II	**B- Semester - II**
Title of Paper	**Credits 2/ 4**
I) Elementary Mathematics for Economics	**4**
II)	**2**
III)	**2**
From the Academic Year	**2024- 2025**

OPEN ELECTIVE – II

Programme Name: **B.Com. (Business Economics)**

Course Name: **Elementary Mathematics for Economics**

Total Credit: **4**

University Assessment: **100 Marks**

Pre-Requisite: This course is designed to provide students with a foundation in fundamental mathematical concepts and techniques that are essential for economic analysis and decision-making.

Course Objectives:

1. To identify and explain the properties and characteristics of various mathematical concepts discussed in the course.
2. To apply mathematical techniques to analyse and solve economic problems.
3. To synthesize and create mathematical models to represent economic phenomena and relationships.
4. To utilize matrix algebra and linear models to address complex economic issues.

Course Outcome:

CO1: Demonstrate a sound understanding of fundamental mathematical concepts.

CO2: Apply mathematical concepts and techniques to solve practical economic problems.

CO3: Critically assess the suitability of different mathematical techniques for solving specific economic problems.

CO4: Create mathematical models to represent economic relationships and phenomena.

Modules	Units	Lecture Hours
1: Set Theory	Definition of Set, Subset.	15
	Types of sets operations on sets and Venn diagram,	
	De Morgan’s Laws and Applications of set theory	

2: Algebra	Scope and Importance.	15
	Functions of real variables,	
	Linear, Exponential Logarithmic, and Inverse functions with graph and illustrative examples.	
3. Static Analysis and Comparative-Static Analysis	Meaning of static analysis and Comparative-Static Analysis.	15
	Rules of differentiation for one variable functions.	
	Rules of differentiation for two variable functions and partial and total Derivatives.	
4. Matrices and Determinants	Definition and types of matrices	15
	Basic Properties of Determinants	
	Adjoint of a matrix, inverse of a matrix and rank of a matrix and solution of system of linear equations by Cramer's Rule and Matrix Inverse Method (including not more than three variables).	

Reference Books:

1. Alpha C. Chiang and Kevin Wainwright (2004). Fundamental Methods of Mathematical Economics. McGraw-Hill Education.
2. Hoy, M., Livernois, J., McKenna, C., Rees, R., & Stengos, T. (2011). Mathematics for economics (3rd ed.). The MIT Press.
3. Intriligator, M. D. (2002). Mathematical optimization and economic theory. Society for Industrial and Applied Mathematics.
4. Monga, C S. (2000). Mathematics and Statistics for Economics. Vikas Publishing
5. Rutherford, T. F. (1999). Modern mathematics and applications in computer graphics and vision. Princeton University Press.
6. Simon, C. P., & Blume, L. (1994). Mathematics for economists. Norton & Company.
7. Sydsaeter, K., Strøm, A., & Hammond, P. (2012). Essential mathematics for economic analysis. Pearson.

INTERNAL CONTINUOUS ASSESSMENT: 40%

Continuous evaluation pattern		
1	Class Test based on objectives on-line/offline	20 marks
2	Assignment / Project / Presentation	20 marks
3	Book review / Newspaper review (in any language) / Case Study writing	20 marks
	Take best of TWO out of THREE from above	**40 Marks**

SEMESTER END EXAMINATION: 60%

Format of Question Paper		
Time: 2 Hours		**Mark: 60**
Note: 1. Attempt any **Four** questions out of Five. 2. Figures to the right indicate full marks.		
Q1	**Answer the following question (Any 2)**	**15 Marks**
A.		
B.		
C.		
Q2	**Answer the following question (Any 2)**	**15 Marks**
A.		
B.		
C.		
Q3	**Answer the following question (Any 2)**	**15 Marks**
A.		
B.		
C.		
Q4	**Answer the following question (Any 2)**	**15 Marks**
A.		
B.		
C.		
Q5	**Write Short Notes (Any 3) (5 Marks Each)**	**15 Marks**
A.		
B.		
C.		
D.		

Sign of the Offg. Dean Prof. Kavita Laghate Faculty of Commerce & Management	**Sign of the Offg. Associate Dean Dr. Ravikant Balkrishna Sangurde Faculty of Commerce**	**Sign of the Offg. Associate Dean Prin. Kishori Bhagat Faculty of Management**	**Sign of the Offg. Dean Prof. Kavita Laghate Faculty of Commerce & Management**