AC – 24/05/2024
Item No. – 6.3 Sem. I (1a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of VSC for Commerce Faculty	
Board of Studies in Mathematics	
UG First Year Programme	
Semester	**I**
Title of Paper	**Credits**
I) Commercial Mathematics I (VSC)	**2**
From the Academic Year	**2024-25**

Name of the Course: Commercial Mathematics – I

Sr. No.	Heading	Particulars
1	**Description the course:** **Including but not limited to:**	This course offers a comprehensive exploration of financial concepts essential for practical application, covering commission, brokerage, discounts, and partnership structures. It provides clear insights into calculating commission and brokerage, understanding various types of discounts, and delineating profit and loss sharing mechanisms in partnerships, including scenarios involving mixtures of discount and profit. This course also delves into shares and mutual funds, elucidating concepts like face value, market value, dividend, and different share types, alongside practical examples. This course equips learners with the fundamental financial knowledge and analytical skills necessary for navigating real-world financial scenarios with confidence and proficiency.
2	**Vertical:**	VSC
3	**Type:**	Practical
4	**Credits:**	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted:**	60 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):** This course builds on the fundamental mathematical ideas taught in school by presenting students with sophisticated and detailed problems requiring critical thinking and reasoning skills. By handling these problems, students will improve their analytical skills and gain a better comprehension of the subject. The course's goal is to promote intellectual growth and equip students to excel in a range of competitive examinations by improving their reasoning and logical thinking abilities. CO1: To familiarize students with the concepts of commission, brokerage, discount, and partnership, and their applications in real-life scenarios. CO2: To enable students to understand the calculation methods for commission, brokerage, trade discount, cash discount, and profit/loss sharing in	

	partnerships. CO3: To introduce students to the concepts of shares, including face value, market value, dividend, equity shares, preferential shares, and bonus shares. CO4: To provide students with an understanding of mutual funds, including entry load, exit load, dividends, and changes in Net Asset Value (NAV). CO5: To equip students with the knowledge and skills to solve problems related to the calculation of net income in mutual funds and the averaging of prices under Systematic Investment Plans (SIPs).
8	**Course Outcomes (OC):** After completion of the course, students will be able to OC1: differentiate between commission and brokerage and apply appropriate calculation methods in various scenarios. OC2: understand the concepts of trade discount, cash discount, and their implications on profit and loss calculations in business transactions. OC3: apply the principles of profit and loss sharing in partnership agreements. OC4: gain a comprehensive understanding of shares, including their types, valuation methods, and implications for investors. OC5: analyze mutual fund investments, calculate net income considering various factors, and make informed investment decisions. OC6: develop proficiency in averaging prices under SIPs and understand its significance in long-term investment strategies.
9	**Modules: -** **Module 1: Commission, Brokerage, Discount and Partnership:** 1. Commission and Brokerage: Concept/Idea of Commission and Brokerage, Examples on calculation of commission and brokerage. • Practical on Commission • Practical on Brokerage 2. Discounts: Concept/Idea of Discount, Trade Discount, Cash Discount. Profit and Loss. Sharing of profit/loss in Partnership. • Practical on Discount • Practical on Trade Discount • Practical on Cash Discount • Practical on Profit and Percentage Profit • Practical on Loss and Percentage Loss • Practical on Sharing of Profit in Partnership • Practical on Sharing of loss in Partnership 3. Mixture of discount and profit. • Practical on mixture of discount and profit.
	Module 2: Shares and Mutual Funds: 1. Concepts of shares, face value, market value, dividend, equity shares, preferential shares, bonus shares, examples. • Practical on shares (face value and market value) • Practical on dividend calculations • Practical on Equity shares

- Practical on Preferential shares
- Practical on Bonus shares

2. Mutual Funds, problems on calculation of Net Income after considering entry load, dividend, change in Net Asset Value (N.A.V) and exit load.
   - Practical on Mutual Fund without considering Entry/Exit Load
   - Practical on Mutual Fund with only Entry Load
   - Practical on Mutual Fund with only Exit Load
   - Practical on Mutual Fund with Entry and Exit Load
3. Averaging of price under the 'Systematic Investment Plan (S.I.P)'
   - Practical on SIP and averaging price under SIP

Students are encouraged to use excel to solve practical problems.

10 **Text Books**

1. Business Mathematics, M. Wilson, Himalaya Publishing House.
2. A textbook of Business Mathematics, R. Jayaprakash Reddy, Y. Mallikarjuna Reddy,

11 **Reference Books**

1. Business Mathematics and Statistics, S.K. Khandelwal, International Book House Pvt. Ltd.
2. Business Mathematics, K.L. Sehgal, Himalaya Publishing House.

Scheme of the Examination

The performance of the learners shall be evaluated into two parts.
- Internal Continuous Assessment of 20 marks for each paper.
- Semester End Examination of 30 marks for each paper.
- Separate head of passing is required for internal and semester end examination.

12 **Internal Continuous Assessment: 40%**
Semester End Examination: 60%

13 **Continuous Evaluation through:** Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc.
(at least 3)

Mid semester practical examination of 20 marks will be conducted on **covered syllabus (at least 50% of total syllabus)** of one hour duration as per the following pattern.

Sr. No.	Title	Marks
1.	Quiz comprising of MCQs (Attempt any 5 out of 8) (Online/Offline)	05

	2.	Class Test comprising of Problems/ Programs (Attempt any 2 out of 4)	10
	3.	Viva	05

14 Format of Question Paper:

The performance of the learners shall be evaluated into two parts.

- Internal Continuous Assessment of 20 marks.
- Semester End Examination of 30 marks.
- Separate head of passing is required for internal, and semester end practical examination.

Semester End Practical Examination (30 marks):

Semester end practical examination of 30 marks **on entire syllabus** will be conducted of three hours duration as per the following pattern.

Sr. No.	**Title**	**Marks**
1.	Problems/ Programs (Attempt any 5 out of 8)	25 Marks
2.	Journal	05 Marks

The students are required to perform 75% of the Practical for the journal to be duly certified. The students are required to present a duly certified journal for appearing at the practical examination, failing which they will not be allowed to appear for the examination.

Sign of the BOS Chairman
Dr. Bhausaheb S Desale
The Chairman, Board of Studies in Mathematics

Sign of the Offg. Associate Dean
Dr. Madhav R. Rajwade
Faculty of Science & Technology

Sign of the Offg. Dean
Prof. Shivram S. Garje
Faculty of Science & Technology