Syllabus
Bachelor of Banking & Insurance

Principles and Practices of Banking and Insurance (Mandatory)
Credits 4

Description of the course:

"Principles and Practices of Banking and Insurance" covers the fundamental concepts, regulations, and operations within the banking and insurance sectors. Students will explore topics such as financial intermediation, risk management, regulatory compliance, and customer service, gaining insights into the role of banks and insurance companies in the economy and the principles governing their operations. The course emphasizes the application of theoretical knowledge to real-world scenarios, preparing students for careers in banking, insurance, and related financial services industries.

Aims & Objectives:

1. To study the business practices, products, and services offered by banks and insurance companies
2. To promote financial literacy among students by enhancing their understanding of banking and insurance products, services, and terminology
3. o familiarize students with the principles, theories, and concepts underlying banking and insurance activities.

Course outcomes:

1. Students will able to evaluate banking and insurance products, services, and practices, assessing risks, opportunities, and implications for market competitiveness.
2. Students will demonstrate a comprehensive understanding of the principles, concepts, and practices governing the banking and insurance sectors
3. It will enhance the understanding of students about the roles such as banking professionals, insurance agents, financial analysts, risk managers, and regulatory compliance officers.

Sr. No.	Modules	No. of Lectures
1	Introduction to Banking	15
2	Modern Banking	15
3	Introduction to Insurance	15
4	General (Non-Life) Insurance	15
Total		**60**

Sr. No.	Modules
1	**Introduction to Banking**
	Introduction to Bank, Evolution of Banking in India, Classification of Banks, Structure of Indian Banking System, Functions RBI: role in Indian Banking System, Types of Account; Know Your Customer (KYC) - Needs and Norms, Opportunities for Indian commercial banks Strengths and weaknesses of Indian commercial banks
2	**Modern Banking**
	Concept, and benefits of Core Banking Solution, Use of Artificial Intelligence in Banking Sector, E-Banking: ATM, Various types of card, Tele Banking, Mobile Banking, Net Banking (RTGS, NEFT and IMPS): Concept and Benefits, Methods of Remittances

3	**Introduction to Insurance**
	A) Insurance: Meaning, Definition, Nature and Functions of Insurance, Evolution of Insurance, Principles of Insurance, Types of Insurance, Role and Importance of insurance, IRDA B) Life Insurance: History and Formation of Life Insurance Corporation (LIC)of India, Nature of Life Insurance contract, Classification of Policies, Calculation of Premium, Privatization of Life Insurance Industry, Progress of Life Business of LIC
4	**General (Non-Life) Insurance**
	A) General Insurance: Introduction, Kinds of General Insurance B) Fire Insurance: Nature and Use of Fire Insurance, Types of Fire Insurance, Policy Conditions, Progress of Fire Insurance C) Health Insurance and Motor Insurance: Meaning, Various types of Policies and Procedure

References:

- Principles and Practices of Banking Authors by Indian Institute of Banking & Finance Published by Macmillan India Ltd.
- Banking Theory, Law and Practice Authors by T.N. Varshney and S.L. Gupta Published by Sultan Chand & Sons Edition
- Principles and Practices of Banking Authors by Jyotsna Seth and N.K. Gupta Published by Taxmann Publications Pvt Ltd.
- Insurance Principles and Practice Authors by M.N. Mishra Published by S. Chand Publishing Edition: Latest edition Publication Year: Varies based on the edition

Fundamental Accounting, I (Mandatory)
Credits 2

Description of the course:
"Fundamental Accounting-I" is an in-depth exploration of advanced accounting practices, focusing on inventory valuation, fire insurance claims, final accounts preparation, and accounting for hire purchase transactions. Students will learn about the various methods of inventory valuation, including FIFO and Weighted Average Method, and how to compute inventory valuation as per AS – 2. Additionally, they will study the computation of loss of stock by fire and the process of ascertaining claims as per insurance policies. The course also covers the preparation of final accounts for manufacturing concerns and accounting for hire purchase transactions, including calculation of interest and journal entries.

Aims & Objectives:
1. To understand the concepts and significance of inventory valuation methods and their application in financial reporting.
2. To familiarize students with the computation of loss of stock by fire and the process of ascertaining claims as per insurance policies.
3. To provide students with the knowledge and skills required to prepare final accounts for manufacturing concerns.

Course outcomes:
1. Students will be able to demonstrate proficiency in applying different methods of inventory valuation, such as FIFO and Weighted Average Method, in accordance with AS – 2.
2. Students will be able to analyze fire insurance policies and compute loss of stock by fire, adhering to the stipulated insurance claims process.
3. Students will be able to prepare final accounts for manufacturing concerns, including adjustments for capital and revenue expenditures and receipts.

Sr. No.	Modules	No. of Lectures
1	Inventory Valuation and Insurance Claims Processing	15
2	Financial Reporting and Hire Purchase Accounting	15
Total		**30**

Sr. No.	Modules
1	**Inventory Valuation and Insurance Claims Processing**
	• **Inventory Valuation**: Meaning of inventories Cost for inventory valuation Inventory systems : Periodic Inventory system and Perpetual Inventory System Valuation: Meaning and importance Methods of Stock Valuation as per AS – 2 : FIFO and Weighted Average Method Computation of valuation of inventory as on balance sheet date: If inventory is taken on a date after the balance sheet or before the balance sheet • **Fire Insurance Claim:** Computation of Loss of Stock by Fire Ascertainment of Claim as per the Insurance Policy Exclude: Loss of Profit and Consequential Loss
2	**Financial Reporting and Hire Purchase Accounting**
	• **Final Accounts** Expenditure: Capital, Revenue Receipts: Capital, Revenue Adjustment and Closing Entries Final accounts of Manufacturing concerns (Proprietary Firm) • **Accounting for Hire Purchase**

	Meaning Calculation of interest Accounting for hire purchase transactions by asset purchase method based on full cash price Journal entries, ledger accounts and disclosure in balance sheet for hirer and vendor(excluding default, repossession and calculation of cash price)

References:

- Financial Accounting for Undergraduates (Volume I) by R.S. N Pillai, Bagavathi Published by S. Chand Publishing
- Fundamentals of Accounting for CA Foundation by D.G. Sharma, Seema Sharma Published by Taxmann Publications Pvt. Ltd.
- Principles of Accounting by Dr. T.P. Ghosh published by PHI Learning Pvt. Ltd.
- Financial Accounting for Undergraduates (Volume I) by R.S. N Pillai, Bagavathi published by S. Chand Publishing

Business Communication - I (VSC)
Credits 2

Description of the course:
"Business Communication" teaches effective communication strategies tailored to professional settings, emphasizing clarity, professionalism, and audience adaptation. Students will learn to compose various business documents, engage in persuasive presentations, and navigate intercultural communication challenges crucial for success in diverse workplace environments. The course promotes proficiency in verbal, nonverbal, and written communication essential for fostering productive relationships, facilitating teamwork, and achieving organizational goals

Aims & Objectives:
1. To improve students' proficiency in verbal, nonverbal, and written communication essential for professional settings, including clarity, conciseness, and appropriateness.
2. To develop students' ability to engage in effective interpersonal communication, including active listening, empathy, conflict resolution, and relationship-building skills crucial for teamwork and leadership.
3. To equip students with the skills to compose various business documents, such as emails, reports, memos, and proposals, adhering to professional standards and conventions while conveying information clearly and persuasively.

Course outcomes:
1. Students will demonstrate proficiency in verbal, nonverbal, and written communication, enabling them to convey ideas clearly, persuasively, and professionally in diverse business contexts.
2. Students will compose various business documents, such as emails, reports, memos, and proposals, adhering to professional standards and conventions.
3. Students will possess strong interpersonal communication skills, including active listening, empathy and relationship-building abilities, fostering positive interactions with colleagues, clients, and stakeholders.

Sr. No.	Modules	No. of Lectures
1	Introduction to Communication skill	15
2	Fundamentals of effective Reading, Listening and Speaking Skills	15
	Total	**30**

Sr. No.	Modules
1	**Introduction to Communication skill**
	A) Introduction, Meaning, Definition, Objective of communication, Types of communication, Process of communication, Principles of effective communication, Barriers to effective communication, Overcoming barriers B) Effective English: Word formulation process - Basic sentence patterns, types of sentences - Simple, complex, compound, Prefixes, suffixes, Developing vocabulary skills.
2	**Fundamentals of effective Reading, Listening and Speaking Skills**
	A) Listening Skills: Listening, Active listening and Passive listening, Blocks to effective listening, Guidelines for Effective listening, importance of silence in communication. B) Speaking Skills: Process of speaking -Pronunciation, Speech mechanism, aspects of effective speaking- accents, intonation, pitch, etc. Greetings, Apology, Permission. C) Reading Skills: Introduction, what is reading? Types of reading - slow, fast, silent, SQ3R technique of reading. D) Writing Skills: Importance of writing skills, Essentials of good writing, Grammar skills.

References:

- Effective Communication Skills for Bankers" by Shalini Verma, published by Taxmann Publications
- Banking and Finance: Theory, Law and Practice" by N.K. Aggarwala
- Banking Communication: Winning Strategies for Communicating Change
- Communication Skills for the Financial Industry" by Amanda Hardy, published by Kogan Page.

Mutual Fund (VSC)
Credits 2

Description of the course:
Mutual Fund explores the concept of pooled investments where funds from multiple investors are managed by professionals to invest in diversified portfolios of stocks, bonds, or other securities. Students will learn about the structure, benefits, and risks associated with mutual funds, including factors influencing investment decisions, performance evaluation, and regulatory compliance within the financial markets. The course emphasizes understanding investment objectives, asset allocation strategies, and the role of mutual funds in individual and institutional investment portfolios.

Aims & Objectives:
1. To provide students with an understanding of the structure, types, and operation of mutual funds, including their roles as investment vehicles.
2. To ensure students understand the regulatory framework governing mutual funds, including compliance requirements, disclosure obligations, and investor protection measures.
3. To enable students to conduct due diligence and select appropriate mutual funds based on investment objectives, fund characteristics, fees, historical performance, and other relevant factors

Course outcomes:
1. Understanding of mutual funds, including their structure, types and operation.
2. Knowledge and skills necessary to analyze mutual fund performance, evaluate investment strategies, and make informed decisions about fund selection and portfolio allocation.
3. Assess investment risks, understand the principles of diversification, and construct well-balanced portfolios using mutual funds.

Sr. No.	Modules	No. of Lectures
1	Introduction to Mutual Fund	15
2	Classification of Mutual Fund	15
		30

Sr. No.	Modules
1	**Introduction to Mutual Fund**
	A) History & Origin, Definition, Meaning, Characteristics, Advantages, Disadvantages, Limitations of Mutual Funds, Ethics in Mutual Fund, Entities involved – Sponsor, Trust, Trustee, Asset Management Company, Registrar and Transfer Agent (RTA) and Fund Houses in India. B) Legal Framework - Role of regulatory agencies for Mutual funds – SEBI, RBI, AMFI, Ministry of Finance, SRO, Company Law Board, Department of Company's affairs, Registrar of Companies MF guidelines on advertisement, Accounting, Taxation and Valuation norms, Guidelines to purchase Mutual Funds, Investor protection and MF regulations, Grievance mechanism in MF in India.
2	**Classification of Mutual Fund**
	A) Types of Mutual Fund- (introduction and Characteristics) Functional/Operational – Open ended, close ended, Interval Portfolio – Income, Growth, Balanced, MMMF Geographical/ Location – Domestic, Offshore Miscellaneous - Tax Saving Funds, Exchange Traded Funds, Balance Funds, Fixed Term Plan, Debt Funds, Systematic Investment Planning & Systematic Transfer Plan B) Portfolio Maturity, Calculations of NAV, Entry Load, Exit Load

References:

- Indian Mutual Funds Handbook: A Guide for Industry Professionals and Intelligent Investors" by Sundar Sankaran - Published by Vision Books.
- Mutual Funds: A Comprehensive Guide for Investors" by Aashish P. Somaiyaa and Vivek K. Sharma - Published by Penguin Random House India.
- Mutual Funds: The Money Multiplier" by Pattabiraman Murari - Published by TV18 Broadcast Limited.
- Mutual Funds: Concept, Regulation and Performance Analysis" by Parimala Rao - Published by PHI Learning Pvt. Ltd.

Service Marketing (SEC)

Credits 2

Description of the course:
"Service Marketing" focuses on understanding and applying marketing principles specific to service-based businesses. Students learn strategies for designing, promoting, and delivering services effectively, addressing unique challenges such as intangibility, inseparability, variability, and perishability. The course emphasizes customer-centric approaches, relationship building, and the integration of technology to enhance service quality and customer satisfaction.

Aims & Objectives:
1. To educate students about the unique characteristics of services and how these factors influence marketing strategies and customer experiences.
2. To teach students strategies for managing service quality, enhancing customer satisfaction, and building long-term customer relationships through effective service delivery, relationship management, and customer feedback mechanisms.
3. To enable students to develop compelling value propositions for services, focusing on differentiation, positioning, branding, and pricing strategies to communicate the value of services effectively to target customers.

Course outcomes:
1. Students will develop a deep understanding of target markets, segments, and consumer behavior specific to service industries.
2. Students will possess the skills to manage service quality effectively, ensuring consistency, reliability, and responsiveness in service delivery.
3. Students will understand how effective service marketing strategies contribute to business growth and profitability.

Sr. No.	Modules	No. of Lectures
1	Introduction: Nature and Scope of services	15
2	Consumer Behavior in Service Marketing	15
		30

Sr. No.	Modules
1	**Introduction: Nature and Scope of services**
	Introduction, Nature growth and Scope of services characteristics of services, classification of services – need for service marketing - reasons for the growth of Service sector, Overview of marketing Different Service Sectors - Seven Ps, Marketing of Banking Services -Marketing in Insurance Sector.
2	**Consumer Behavior in Service Marketing**
	Customer Expectations on Services- Factors influencing customer expectation of Services. - Service Costs experienced by Consumer, the Role of customer in Service Delivery, Conflict Handling in Service, Customer Responses in Services, Delivering Quality Service, Concept of Customer Delight, Benefits of customer relationship, Gaps in service retention strategies.

References:

- "Services Marketing: People, Technology, Strategy" by V. A. Zeithaml, Mary Jo Bitner, and Dwayne D. Gremler (Publisher: Tata McGraw-Hill Education)
- "Services Marketing: Concepts, Strategies, & Cases" by Rajendra Nargundkar (Publisher: Tata McGraw-Hill Education)
- "Services Marketing: Text and Cases" by Rajendra Nargundkar (Publisher: Tata McGraw-Hill Education)
- "Service Marketing: Concepts and Practices" by K. Rama Mohana Rao (Publisher: Himalaya Publishing House)

AC – 24/11/2023
Item No. – 8.2 (N) -5

As Per NEP 2020

University of Mumbai

Title of the Course

Foundation of Behavioural skills – Basic level

Semester – Sem I

Syllabus for Two Credit

(With effect from the academic year 2024-25)

PROGRAM	BA /BSc/ BCOm
SEMESTER	I
COURSE TITLE	Foundation of Behavioural skills Basic level
VERTICLE /CATEGORY	E (Value Education Course)
COURSE LEVEL	50
COURSE CODE	
COURSE CREDIT	2
HOURS PER WEEK THEORY	2
HOURS PER WEEK PRACTICAL/TUTORIAL	

COURSE OBJECTIVE

1. To develop understating about behavioural Skills.

2. To develop communication skills of students through experiential learning.

3. Life skill development through work life balance and stress management training.

4. To developing effective leadership quality among the learners.

COURSE OUTCOME

CO1: Learners will be able to Define and Identify different life skills required in personal and professional life

CO2: Learners will develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.

CO3: Learners will be able to explain the basic mechanics of effective communication and demonstrate these through presentations and take part in group discussions

CO4: Learners will be able to use appropriate thinking and problem-solving techniques to solve new problems

ORGANISATION OF THE COURSE		
UNIT NO	COURSE UNITS	HOURS PER WEEK
1	Module 1: Behavioural skills	2*5=10
2	Module 2: Stress Management	2*2=04
3	Module 3: 21st-century skills	2*5=10
4	Module 4: Understanding Value Education	2*3=6
	TOTAL HOURS	30

COURSE DESIGN

UNIT TITLE	OUTCOME	DESCRIPTION	PEDAGOGICAL APPROACH
Behavioural skills	Learners will be able to Define and Identify different life skills required in personal and professional life.	Overview of Life Skills: Meaning and significance of life skills, skills identified by WHO: Self-awareness, Empathy, Critical thinking, Creative thinking, Decision making, problem solving, Effective communication, interpersonal relationship, coping with stress, coping with emotion. Life skills for professionals: positive thinking, right attitude, attention to detail, having the big picture, learning skills, research skills, perseverance, setting goals and achieving them, helping others, leadership, motivation, self-motivation, and motivating others, personality development, IQ, EQ, and SQ2.	Examples, TED Talks, videos.

Stress Management	Learners will develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.	Stress, reasons and effects, identifying stress, stress diaries, the four A's of stress management, techniques, Approaches: action-oriented, emotion-oriented, acceptance-oriented, resilience, Gratitude Training, Coping with emotions: Identifying and managing emotions, harmful ways of dealing with emotions, PATH method and relaxation techniques.	Examples, Role Plays, Behavioral Simulations and Games
21st-century skills	Learners will be able to explain the basic mechanics of effective communication and demonstrate these through presentations and take part in group discussions	Creativity, Critical Thinking, Collaboration, Problem Solving, Decision Making, Need for Creativity in the 21st century, Imagination, Intuition, Experience, Sources of Creativity, Lateral Thinking, Myths of creativity, Critical thinking Vs Creative thinking,	Case Discussions, Games and simulations, Group discussions.
Understanding Value Education	Learners will be able to use appropriate thinking and problem-solving techniques to solve new problems	Introduction – Definition, Importance, Process & Classifications of Value Education: Understanding the need, basic guidelines, content and process for Value Education Understanding the thought-provoking issues; need for Values in our daily life Choices making – Choosing, Cherishing & Acting, Classification of Value Education: understanding Personal Values, Social Values, Moral Values & Spiritual Values.	Case Discussions, Games and simulations, Community Service, Presentations

CONTINUOUS ASSESSMENT TESTS (CAT) & SEMESTER END EXAMINATION (SEE)			
NATURE OF ASSESSMENT	**MARKS**	**METHODOLOGY**	**COURSE OUTCOME**
CAT 1 *	10	Online Quiz, Open book test, Presentations, Projects and Viva	CO1
CAT 2 *	05	Presentations, Projects and Viva	CO1, CO2
CAT 3 *	10	Online Quiz, Open book test, Presentations, Project Assignment and Viva	CO3
CAT 4 *	05	Presentations, Projects and Viva	CO4
SEE	30	Five questions of 10 marks each (from each course unit), to be attempted any 3, 10 marks may be subdivided into two sub questions of 5 marks	CO1, CO2,CO3, CO4

*Any Two for 20 marks

ESSENTIAL READINGS	**1.** R R Gaur, R Sangal, G P Bagaria, 2009, A Foundation Course in Human Values and Professional Ethics. 2. Shiv Khera, "You Can Win" , Macmillan Books, New York, 2003. 3. Barun K. Mitra, "Personality Development & Soft Skills", Oxford Publishers, Third impression,2017.
ADDITIONAL READINGS	The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change Stephen Covey Free Press (first published August 15th 1989)

Syllabus Drafting Committee

Prof. Dr. Aruna Deshpande

Prof. Dr. Tejashree Deshmukh

Mr. Nitin Vazirani

Signature

Prof. Kavita Laghate

Mr. Bhooshan Mailkani — Chairman of Board of Studies in Value Education

Dr. Vinita Pimple

As Per NEP 2020

University of Mumbai

Title of the Program

Introduction to Cultural Activities

SEM I

Syllabus for Two Credit

(With effect from the academic year 2024-25)

Aims and Objectives

- To study the importance of cultural activities in India.
- To discuss the historical importance of cultural activities.
- To define and describe the overview of cultural practices at Indian and Global level.
- To list the various forms of cultural activities and its applied skills.
- To describe the role of organizations for organizing cultural activities in India.

Learning Outcomes

- Understand the significance of cultural activities
- Sensitize students towards Indian culture and its preservation
- Apply the knowledge and skills of the cultural activities in their practical life
- Participate in the various cultural activities

Modules at Glance Semester I

Module No.	Unit	Content	No. of Hours
1	I	Overview to Cultural Activities	05
	II	History of Student Cultural Activities	05
2	III	Forms / Types of Literary and Fine Arts Activities and its Applied Skills	10
	IV	Forms / Types of Performing Arts Activities and its Applied Skills	10
Total No. of Hours			**30**

Module No.	Unit	Content	No. of Hours
1	**I**	**1.1 Overview to Cultural Activities** • Definition of culture and its manifestations • Understanding cultural diversity and inclusivity • The role of cultural activities in preserving heritage • Overview of Indian cultural practices • Overview of global cultural practices	05
	II	**2.1 History of Student Cultural Activities** □ Role of student cultural activities □ History of student cultural activities in India	05

		• Role of AIU in preserving cultural heritage of India • History of student cultural activities in Maharashtra • Student Cultural activities at University of Mumbai	
2	**III**	**3.1 Forms / Types of Literary and Fine Arts Activities and its Applied Skills** **3.1.1 Various Forms of Literary Arts** • **Elocution**: Reading Skills, Soft Skills, Languages, Communication Skills, etc. • **Debate**: Reading Skills, Soft Skills, Languages, Communication Skills, etc. • **Story Writing**: Introduction, Plot, Characterization, Presentation, Relevance, Language Style, etc. • **Story Telling**: Introduction, Plot, Characterization, Presentation, Relevance, Language Style, etc. • **Quiz**: General Knowledge skills **3.1.2 Various Forms of Fine Arts** • **Painting:** Visualization, Delivery of the Subject, Composition, Colour Application, Presentation and Overall Impact • **Collage:** Visualization, Delivery of the Subject, Handling of Medium, Composition, Presentation and Overall Impact • **Poster Making:** Visualization, Delivery of the Subject, Presentation, Tagline and Overall Impact • **Clay Modeling:** Visualization, Delivery of the Subject, Handling of Medium, Composition, Presentation and Overall Impact • **Cartooning:** Visualization, Delivery of the Subject, Characters, Synchronization, Colour Application, Composition, Presentation and Overall Impact • **Rangoli:** Visualization, Delivery of the Subject, Colour Scheme, Elements, Presentation and Overall Impact • **Mehendi Designing:** Originality, Creativity, Decorative Art with Aesthetic Sense, Presentation and Overall Impact	**10**

		• **Spot Photography:** Impact, Composition, Technical Quality and Suitability for the Specific Theme • **Installation:** Visualization, Delivery of the Subject, Handling of Medium, Synchronization, Composition, Presentation and Overall Impact	
	IV	**4.1 Forms / Types of Performing Arts Activities and its Applied Skills** **4.1.1 Various Forms of Dance** • **Folk Dance:** History and Origin of Folk Dance In India, Types and their Uniqueness, Significance of Folk Dance, Folk Dances in Maharashtra • **Classical Dance:** History of Classical Dance, Types and their Peculiarities, Significance of Classical Dances in India **4.1.2 Various Forms of Theatre** • History of Indian Theatre • Types and their Uniqueness • Significance of Indian Theatre • **Various Forms of Theatre**: One Act Play, Skit, Mime, Mimicry **4.1.3 Various Forms of Music** • History of Indian Music, • Types and their Uniqueness, • Significance of Music in India • **Various Forms of Music**: Classical Singing, Light Vocal, Percussion, Non-Percussion, Natyasangeet, Western Vocal, Western Instrumental	**10**

Scheme of Evaluation

The Scheme of Examination shall be of 50 marks. It will be divided into Internal Evaluation (20 marks) and Semester End Examination (30 Marks).

Semester I (50 Marks, 2 Credits) Internal Evaluation (20 Marks)

Sr. No.	Particulars	Marks

1	Presentation **OR** Project **OR** Assignment	15
2	Participation in Workshop / Conference / Seminar (as decided by the Teacher) **OR** Participation in Online Workshop / Conference / Seminar (as decided by the Teacher) **OR** Field Visit **OR** Attendance	5
Total		**20**

Semester End Examination (30 Marks)

Question No.	Particulars	Marks
1	**Objective Type Questions (All Units)**	6
2	**Descriptive Question(s) on Unit I** [This question may be divided into sub questions like (a) (b) for 3 Marks + 3 Marks or 4 Marks + 2 Marks pattern]	6
3	**Descriptive Question(s) on Unit II** [This question may be divided into sub questions like (a) (b) for 3 Marks + 3 Marks or 4 Marks + 2 Marks pattern]	6
4	**Descriptive Question(s) on Unit III** [This question may be divided into sub questions like (a) (b) for 3 Marks + 3 Marks or 4 Marks + 2 Marks pattern]	6
5	**Descriptive Question(s) on Unit IV** [This question may be divided into sub questions like (a) (b) for 3 Marks + 3 Marks or 4 Marks + 2 Marks pattern]	6
Total		30

Reference Books

1) Rabindranath Tagore, The Centre of Indian Culture. Rupa and Co, India, 2017.
2) Chopra, J. K. Indian Heritage and Culture. Unique Publisher, India, 2013.
3) Patnaik Devdatta, Indian Culture, Art and Heritage. Pearson, India, 2021.
4) Cassady Marsh, An Introduction to the Art of Theatre: A comprehensive test- Past, Present and Future. Colorado Springs, Colo, 2017.
5) Pingle Bhavanrav A., History of Indian Music: with particular reference to theory and practice, Dev Publishers and Distributors, India, 2021.
6) Popley Herbert A., The Music of India. Central Archaeological Library, New Delhi, 1921.

7) Tomory Edith, History of Fine Arts in India and the West. Orient Longman, Mumbai, 1989. 8) Arthur Schopenhauer, The Art of Literature, S. Sonnenschein and co London. 1981.
9) M. Keith Booker, A Practical Introduction to Literary theory and Criticism. Routledge.Michigan, 1996.
10) Vatsyayan Kapila, Indian Classical Dance. Publications Division, Ministry of Information and Broadcasting, Govt. of India, 1992.
11) Phyllia S. Weikart, Teaching folk dance: successful steps. High/Scope Press, Mchigan, 1997.
12) Gosvami O., The story of Indian Music, its growth and synthesis. Bombay, New York, Asia Pub. House, 1961.

AC –28.06.2024

Item No. – 5.5 (N)

University of Mumbai

Syllabus for Extension Work in Vertical VI - CC	
Board of Studies in Extension Work	
UG First Year Program	
Semester	**I**
Title of Paper	**Credit**
Extension Work	**2 Credits**
From the Academic Year	**2024-25**

Introduction

The National Education Policy (NEP) 2020 is a comprehensive framework introduced by the Government of India to revamp the country's education system. It has replaced the previous National Policy on Education, which has aim to ensure universal access to quality education from preschool to higher education, including vocational education. NEP 2020 emphasizes a more holistic, multidisciplinary, and flexible curriculum which lay emphasis on conceptual understanding rather than rote learning allowing students to choose subjects across disciplines without strict boundaries.

The National Education Policy (NEP) 2020 of India addresses the role of higher education institutions in fostering community engagement and extension work. It highlights the social responsibility of higher education institutions towards their communities. It encourages institutions to engage with local communities, address societal challenges, and contribute to sustainable development. The policy promotes the implementation of outreach programs by higher education institutions to disseminate knowledge, provide services, and support community development. These programs may include literacy campaigns, career development programs, social issues awareness programs, health and hygiene initiatives, skill development workshops, and technology-oriented activities. The policy suggests integrating extension work into the curriculum of higher education programs. This allows learners to gain practical experience, develop leadership skills, and contribute to community development while pursuing their studies. It recognizes incentives to encourage active engagement in community service and extension activities.

Overall, NEP 2020 recognizes the significant role of higher education institutions in promoting community engagement, social responsibility, and sustainable development through extension work. By integrating extension activities into their mission and operations, institutions can contribute in building inclusive and resilient societies.

Extension work in the context of education refers to the activities and programs conducted by educational institutions to engage with communities, address societal needs, and promote social development.

Aim of Extension Work under NEP:

- Extension work aims to identify and address the specific needs and challenges faced by communities. NEP 2020 encourages higher education institutions to engage with local communities and contribute to their development by offering programs and services that

address social needs, such as literacy programs, health awareness campaigns, and vocational training.

- Extension work aims to empower communities by providing them with the knowledge, skills, and resources they need to address their own requirements and improve their quality of life.

Key objectives of Extension Work under NEP:

- To ensure equal access to quality education and educational opportunities to aspirants.
- To support the government initiatives in achieving universal foundational literacy and numeracy as per sustainable development program.
- To organize remedial programs to address the learning breaches among the youth and provide unending education opportunities.
- To offer more holistic, multidisciplinary, and flexible curricular activities with an emphasis on conceptual understanding and personality development.
- To offer a wide range of activities & promote critical thinking, creativity and innovation.
- To provide aspirants with multiple pathways for skill development and employment.
- To implement outreach programs to disseminate knowledge, provide services, and support community development.

Extension Work Activities:

Extension Work activities introduced by DLLE are a crucial aspect of the educational environment, offering multifaceted benefits that extend beyond academic learning. Many extension activities focus on social issues, sustainability, and environmental conservation. These activities educate the communities on sustainable practices which promote inclusivity and social justice. These activities focus especially on training women in various skills, including entrepreneurship and digital literacy through various vocational skill-oriented projects offered by the department. These activities have significantly contributed to skill development among community members, leading to improved employment opportunities and personality development. Learners participate in extension work activities as part of their curriculum, to gain practical experience and to contribute to community development. Thus, engaging in extension work fosters a sense of social responsibility and civic engagement among the learners and facilitators.

THE EXTENSION DIMENSION (Reach to Unreached)

The college students are enrolled for extension work projects and perform various activities for the **social awareness based on various issues / problems in the society such as Save Girl Child, Pollution, Aids, Global Warming, Environment, Tree Plantation, Importance of Education, Illiteracy, Child Labour, Dowry Deaths, Malnutrition, Watershed Management and so many.** The students are creating awareness about these social problems / issues through various activities such as Street Play, Exhibition, Poster Making, Songs, Speech, Survey, Elocution, and participation in Seminar & Conferences. For this purpose, students are going to remote areas and involve the community and make them aware of our role in eradicating social problems faced by the society and trying to convince the people human duties as an ideal citizen.

To facilitate the sensitization of the student to the socio-cultural realities, the Department offers extension work projects encompassing social issues for the student. There are many Extension Work Projects being offered by the department under the two different units for enhancing the employability and IT skills of the student. The projects are given below for which the details are available on DLLE website at www.mudlle.ac.in.

I) Vocational Career Oriented Projects

1. Career Project [CP]
2. Industry Orientation Project [IOP]
3. Anna Poorna Yojana [APY]
4. Skill Development (SD)

II) Community Oriented Projects

1. Population Education Club (PEC)
2. Survey Research
3. Education for All (EFA- NIOS, IDOL)
4. Environment Education
5. Civic Sense (CS)
6. Consumer Guidance

Given below are the activities / programs to be conducted by the colleges as a part of 10 Extension Work Projects as listed above. The learner will select any one extension work project for this academic year and participate in following activities to complete 60 hours of activities during Semester I in this academic year.

ACTIVITIES FOR SEMESTER I = TOTAL 60 HOURS – 2 Credits

1. Exhibit your talent (Talent Search Program) **(practice session to presentation-05 hours)**
   A talent search program is a critical component of modern human resource management that compel sensitization of self-awareness. By systematically identifying, attracting, and nurturing talent, the colleges can build a workforce that is capable, diverse, and aligned with their strategic goals to achieve objectives of extension work. The following talents / skills are expected from learners to conduct training, extension work and field outreach activities as per the project assigned to the students. (Organization, Crowd control, Storytelling, Stage performance (singing, acting, musical instrument playing), Script writing, Poetry composition, Drawing & painting, Collage, Drafting and writing report, PPT presentation and Video Making.

2. Organizing & Participation in Training Session and Note Making **(05 hours)**
   Every learner should attend the training session organized by their college for orientation of annual extension work program. Attendance is compulsory. In this session the learners will be oriented about all the extension work projects followed by question-and-answer session. The learner must read resource material and guidelines carefully and understand the structure Extension Work under NEP 2020 and accordingly plan for participation in various programs, college level and field outreach activities. Documentation of the activity and report preparation needs to be completed by the learners.

3. Self- Introductory Video / Stage Performance **(practice session to presentation-05 hours)**
   All learners enrolled in Extension Work can make self-introductory video or stage performance (3-4 minutes duration) stating his / her name, college, areas of interest, reason to join DLLE, goals, why did he / she choose the particular project, how will he/she perform & achieve his/ her objectives etc. followed by 2 page report writing.

4. Participation in Project /Activity (as per selected extension work project) **(35 hours)**

- Organize and participate in programs related to projects / government policies.
- P*articipation in*
  - Seminar /conferences, discussion sessions, debate, rallies
  - Competitions (essay/creative writing, elocution, poster/ video/ rangoli making etc.
  - Extension Work group activities of other groups in the college.
- Prepare your PPT, design your posters / charts.
- Survey / short term academic courses / innovative programs.

Learners should perform and participate in the activities as stated in the extension work project chosen by him / her and strictly follow the guidelines. All the programs must be related to extension work projects to fulfil the DLLE objectives.

5. Report Writing and Final submission of projects / report **(10 hours)**

- Every learner will prepare final report as per format given by DLLE
- Present your report during the college program.
- College will organize a program in the hall / classroom for all learners and give them opportunity to present their report with PPT presentation followed by question answer session / test / interview by the college.

Monitoring and Evaluation:

Monitoring and Evaluation will be conducted by College Teacher and Field Coordinators (Senior Teachers in Extension Work) deputed by DLLE on the basis of attendance, punctuality, completion of hours, participation in programs and proficiency in required skill sets, feedback and student's overall performance and additionally on the basis of written report and presentations. Approval of Principal, Field Coordinator and Director, DLLE will be final for granting academic credit to the students.

Sign of the BOS Chairman	**Sign of the Offg. Associate Dean**	**Sign of the Offg. Dean**
Name of the Chairman	**Name of the Associate Dean**	**Name of the Offg. Dean**
Name of the BOS	**Name of the Faculty**	**Name of the Faculty**

AC – 20/04/2024
Item No. – 6.6 Sem. I (2b)

As Per NEP 2020

University of Mumbai



Syllabus for Basket of OE	
Board of Studies in Information Technology	
UG First Year Programme	
Semester	**I**
Title of Paper	**Credits 2/ 4**
I. **IT_Google Workspace** (Open Elective) [OE]	**2**
From the Academic Year	**2024-2025**

Name of the Course: IT_Google Workspace

Sr.No.	Heading	Particulars
1	**Description the course : Including but Not limited to:**	Google Workspace is a collection of cloud-based productivity tools that are designed to help individuals and organizations to work and collaborate efficiently. This course will provide an introduction to applications such as Gmail, Google Drive, Google meet and Google Calendar Google Docs, Google Sheets, Google Slides, Google Forms, Google Classroom.
2	**Vertical :**	**Open Elective**
3	**Type :**	Practical
4	**Credits :**	2 credits
5	**Hours Allotted :**	60 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. Understand Google Workspace and its applications. CO 2. Gain proficiency in key features of Google workspace application. CO 3. Acquire proficiency in Google workspace to collaborate, manage tasks and communicate effectively. CO 4. Leverage possibilities of Google workspace tolls to enhance productivity and streamline workflow.	
8	**Course Outcomes (OC):** OC 1. Manage email communications with Gmail. OC 2. Schedule and organize meetings and events using Google Calendar. Arrange and attend video meetings with Google Meet, Communicate with others using Google Chat. OC 3. Save , manage, and share files with Google Drive. OC 4. Generate and collaborate documents, spreadsheets and presentations. OC 5. Design Google Forms and collect data for surveys . Generate reports based on the collected data and integrate it with other Google Workspace applications. OC 6. Use Google Classroom to digitally organize, distribute, and gather assignments, course materials, and feedback. OC 7. Navigate confidently and make use of the numerous functionalities of Google Maps. OC 8. Able to design, develop, and maintain informative and visually appealing websites using Google Sites.	
9	**Modules:-** **Module 1:**	

1. **Google Workspace & Mastering email communication with Gmail**: Overview of Google Workspace, Setting up a Google account and accessing Google Workspace, Set Profile information and Photo, Send and Receive emails, Organize emails using labels, filters, and stars for easy retrieval and management, Utilize Gmail's advanced features like scheduling emails, snoozing emails, and setting reminders.
   a. Create a Gmail account. Write a brief email to your friends inviting them to a meeting to discuss a possible industrial visit. Attach a document file with the many options for places to visit.
2. **Google Calendar , Meet and Chat** : Create a new calendar, Create an event in Google Calendar, Set remainders and alarms , Share a Calendar with Other People ,Integrate with Gmail and other apps. Scheduling and managing Google Meet events, Features in Google Meet like screen sharing, chat, annotations and recording, Creating public and private Google Chat rooms ,Inviting and managing participants in Google Chat rooms, Utilizing Chat room features like sharing files, links, and multimedia, pinning messages, and polls.
   a. Create a new event in Google Calendar for an event happening on a specific date and time. Set a reminder to alert you one day prior to the event. Share your Google Calendar with a specific email address and grant them view-only access.
   b. Set up a meeting with your project partners, choose the suggested security configurations, and send a meeting invite to the participants via email. Begin the meeting by letting everyone into the meeting room. To demonstrate to them the project's progress, share your screen. Use chats to send brief messages and share relevant documents.
3. **Google Drive** :Managing files and folders in Google Drive, Sharing files and folders with collaborators and setting access permissions.
   a. Create a project folder in Google drive. Add a PowerPoint presentation detailing project milestones and a Word document with project guidelines to the folder. Share the folder and allow the project team members to edit it.
4. **Google Docs**: Document creation with Google Docs, Apply Basic Formatting to Text , Inserting Images, Creating tables, Format a document with styles, Using Find and Replace, Using Regular Expressions for Advanced Searching, Sharing and Collaborating on files.
   a. Create a one page document which best describes you. Add the document's heading and page numbers. Make a list of your hobbies using bullet points. Employ formats and typefaces to give the document an elegant look. To highlight your skills, use hyperlinks to other documents in the folder. Include a picture of yourself on the page as well. Add a table with your educational background in it. Write about your positive college experiences by voice typing. After that, translate the document's content into a different language of your choice.
5. **Google Sheets** :Insert, delete and manage sheets , Insert a Function, Format Spreadsheets, Cells, and Ranges, Apply Number Formatting

	and Conditional Formatting, Insert and View Notes, Choose Spreadsheet Settings, Merge Cells, Wrap and Rotate Cell Contents, Inserting Objects in Google Sheets, Sort and Filter Data, Apply Data Validation to Your Sheets, Protect Ranges in a Sheet, Protect a Sheet, Create and Manage Macros. a. Create a Personal budget sheet, list all your expenses and incomes of the month in the sheet. Use sum function to total the income and expenses. Use IF function to find if the budget is in deficit or not.
	Module 2:
	1. **Google Slides**: Add a Slide to a Presentation, Import Slides from an Existing Presentation, Understanding and Using Views, Work with Text Boxes, Add Audio and Video to a Slide, Insert Shapes and Word Art, Add a Transition and Animations, Edit a Slide Master, Organize the Slides in a Presentation a. Open a new Google Slides presentation titled “Project Presentation”. Add slides to provide a summary of your project. Use themes and transitions to make the slide experience better. 2. **Google Forms**: Create a Form, Choose Settings for a Form, Add Questions to a Form, Add Images to a Question, Add a Video to a Question, Import Questions from an Existing Form, Create a Form with Multiple Sections, Control Progression Based on Answers, Add Collaborators to a Form, Preview and Test a Form, Send a Form to Its Respondents, View the Responses to a Form, Analyse form responses and generate reports. a. Create a Google Form to accept participation entries for the various events your department is organizing on the annual day. Mention the details of event in the form description. Include a dropdown menu to select the events they wish to participate in. Insert relevant multimedia to make the Google Form attractive. b. Create an online evaluation quiz using Google Form. Include a variety of question formats, such as ones with pictures, videos, etc. Assign points to the questions. Share the link with your friends and check out the the summary of the responses. 3. **Google Classroom**: Create and set up a Google Classroom, Add Students and Co-Teachers, Using Google Classroom to share resources, Create assignment, Set due dates and points, Use rubrics for grading, Integrate quizzes created using Google Form with Google Classroom. a. Create a Google Classroom for a certain subject that includes a range of topics, resources, and activities. Include resources for each topic, such as Word docs, PowerPoints, and YouTube links. Include elements that encourage participation and interaction, such as assignments and discussions. 4. **Google Maps:** Search on Maps, Different Map Views (Satellite, Terrain, Street View), Customizing Maps, Get to your destination, Sharing Maps with Others. a. Use google maps to explore local landmarks in your area. Find directions from your current location to a nearby restaurant. Use Maps to check the places you have visited on a particular day.

	5. **Google Sites**: Creating and building simple websites using Google Sites, Adding content, images, and widgets to websites. a. Assume you runs a small business. Create a visually appealing website which includes the following pages: Home page , About the business, Products page, Announcement of discounts.	
10	**Text Books and Online Resources** 1. **Hart-Davis, G. (2021). Teach Yourself Visually Google Workspace. Visual.** 2. **https://support.google.com/a/users#topic=9247638** 3. **https://support.google.com/edu/classroom#topic=10298088** 4. **https://support.google.com/maps/?hl=en#topic=9729258**	
11	**Reference Books** **1. Team, Z. (2017). The Ultimate Guide to G-Suite. Lean Pub G-Suite.** **2. Iyer, b. (2022). Google workspace user guide: a practical guide to using google apps efficiently while integrating them with your data.**	
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)	
14	**Format of Question Paper: Duration 2 hours. Certified copy of Journal is compulsory to appear for the practical examination** Practical Slip: Q1. From Module 1 13 marks Q2. From Module 2 12marks Q3. Journal and Viva 05 marks	

Sign of Chairperson
Dr. Mrs. R. Srivaramangai
Ad-hoc BoS (IT)

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

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

AC – 24/11/2023
Item No. – 8.4 (N) - 3

As Per NEP 2020

University of Mumbai

Title of the Program

Co-Curricular Course
NATIONAL SERVICE SCHEME

SEM I & SEM II

Syllabus for Two Credit

(With effect from the academic year 2024-25)

UNIVERSITY OF MUMBAI
National Service Scheme

1.1 Preamble:
Students in the National Service Scheme are better able to comprehend all the most recent ideas. These courses include an Introduction to National Service Scheme that covers the concept of social services, which are a variety of public services meant to offer support and help to targeted specific groups, most often the underprivileged. They could be offered by individuals, autonomous, private entities, or under the management of a government body.

1.2 Objectives of the Course:
1. To Introduce National Service Scheme to learners and explain how it is used in current social studies.
2. To make the students aware of the need of having a foundation in social science and NSS.
3. To introduce students to social concepts and issues in society, as well as to get involved in resolving social issues.

1.3 Learning Outcomes of the Course: The students will be able to
1. The course will help students comprehend the foundations of the National Service Program.
2. To understand the unique camping program.
3. Students will learn about the regular activities of NSS.

1.4. Programme Specific Outcomes:
1. Students will be familiar with NSS fundamentals and history, particularly as they pertain to social work.
2. Students will recognize NSS and its ongoing operations.

1.5 Programme Outcomes:
1. Students will comprehend fundamental ideas and facts about the National Service Program.
2. Students will learn the essentials of NSS-related procedures.
3. Students will learn social work skills (such as Voter Awareness, Campus Cleanup, Tree Plantation, and Rallies).

1.6 Modes of Internal Evaluation: Assignment, Tutorial, Presentation, MCQs via Google, Field Visits, any other suitable mode along with marks for Attendance of the students.

UNIVERSITY OF MUMBAI
Semester I
NSS CC
Sub: - Introduction to National Service Scheme

Credits: 02 **Marks:50**

Unit Number	SEMESTER 1 Title of the Unit	No. of Lecture
1	**Introduction to National Services Scheme** NSS- History,Philosophy & Need of Emergence Aims, Objectives, Motto and Emblem of NSS, NSS Theme Song Organizational Structure of NSS-Hierarchy at different levels (National,State,University,College) Roles and Responsibilities of Program Officer Financial Provisions -Grant in Aid for NSS Advisory committees & their functions	15
2	NSS Programmes and Activities (Regular activities) NSS Programmes and Activities (Special Camp activities) Yearly Action Plan of NSS Unit Volunteerism– Meaning, definition, basic qualities of volunteers, need of volunteerism for National development. Opportunities in NSS for Volunteers (Various Camps) Report Writing	15

UNIVERSITY OF MUMBAI
Semester II
NSS CC
Sub: - Leadership and Community Engagement

Credits: 02 **Marks: 50**

Unit Number	SEMESTER 2 Title of the Unit	No. of Lecture	No. of Credits
1	**Leadership & Personality development:** Meaning, definition, qualities, and characteristics of a Leader. Meaning of personality, Dimensions of personality. Personality and Leadership nexus. Universal Human Values and Ethics for youths Sustainable Development Goals	15	
2	**Activity Based Programmes** (Suggestive list given below. Colleges can plan various social activities for learners and make a detailed report) Activities can be conducted throughout the academic year .Evaluation will be based on record keeping of the attendance of the learner. **Shramadhan – P**lantation, Cleaning, Watering, Weeding, Any other activities. **Awareness Programmes –** Seminar, Workshops, Celebration of National and International days, Personality Development Programmes, Group Activities, etc., Rally,Visit to Adopted villages, SwatchathaProgramme, Visit and Conserving Ancient monuments and heritage site, Socio Economic Survey of village/slum, Nature Camp, Environmental Education, Women Empowerment Programme, Health Camps, Blood grouping awareness and Blood donation, Legal awarenessProgramme, Literacy Programme, Water Conservation Programme,One Day Special Camp in a village (preferably in adopted village/Adopted areas/Slums/MR Schools etc).	30	

Note:
1. Above Paper will be exempted if the learner is involved in NSS as Volunteer and Successfully completes 60 hours in each Semester.
2. If learner as a NSS Volunteer attends any Camps at National/State/University/District/ College Special Camp will be exempted from either Sem II OR Sem IV Paper provided they produce Certificate of Participation or Attendance in Camp certified by the Programme Officer.

Evaluation Pattern

Internal Assessment

Assessment Criteria	Marks
Assignment / Project / Quiz/Presentations	**10**
Attendance, Class and Activity Participation	**10**
Total	**20**

External Assessment
Question Paper Pattern

Time: 1:00 Hours **Total Marks: 30**

Introduction:-*1. All questions are compulsory.*
2. Figure to the Right indicates full marks.
3.Draw neat labeled drawings wherever necessary.

Q.1) Rewrite the following by choosing the correct options given below (with four alternatives) 6 Objectives question of 1 mark each **06 marks**.

1. a) b) c) d)
2. a) b) c) d)

Q.2) Short Notes . (Any Two out of Four) **06marks**

1.
2.
3.
4.

Q.3) Answer the following questions (Any Three out of Five) **18 marks**

1.
2.
3.
4.
5.

References:

1. National Service Scheme Manual 2006, Government of India
2. Salunkhe P.B. Ed, Chhtrapati Shahu the Pillar of Social Democracy
3. National Service Scheme Manual, Govt. of India
4. Training Programme on National Programme Scheme TISS
5. Orientation Courses for N.S.S. Programme Officers, TISS
6. Hans Gurmeet, Case Material as a Training Aid for Field Workers
7. Tarachand, History of the Freedom Movement in India Vol.II
8. Kapil K. Krishan, Social Service Opportunities in Hospitals (TISS)
9. Ram, Social Problems in India.
10. Arnold, K. (2018). What is R.E.S.P.E.C.T. When it comes to teamwork? Available at: https://www.extraordinaryteam.com/what-is-r-e-s-p-e-c-t-when-it-comes-to-teamwork/
11. Barnard, I. C. (1938). Functions of the Executive. Boston: Harvard Press.
12. Barrett, R. (2013). The Values-driven Organisation: Unleashing Human Potential for Performance andProfit. London: Fulfilling Books
13. Barret Values Center (2018). Values-based leadership. Available at: https://www.valuescentre.com/mapping-values/leadership/values-based- leadership
14. Bauman, D. C. (2013). Leadership and the three faces of integrity. The Leadership Quarterly, 24(3), 414-426.
15. Bishop, W. H. (2013). Defining the Authenticity in Authentic Leadership. The Journal of Values-BasedLeadership, 6(1), Article 7. Available at : https://scholar.valpo.edu/cgi/viewcontent.cgi?article=1077&context=jvbl
16. Bourne, P. A. (2016). Leadership as a service: a new model for higher education in a new century – a bookreview. Review of Public Administration and Management, 4, 196. Available at:https://www.omicsonline.org/open- access/leadership-as-a-service-a-new-model-for-higher-education-in-a- newcentury--a-book-review-2315-7844-1000196.php?aid=83165
17. Cameron, K. (2008). Positive Leadership. San Francisco: Berret-Koehler.
18. Clarke, S. (2018). Why your values are key to your leadership. Leaderonomic.com Available: https://leaderonomics.com/leadership/values- key-leadership
19. Clarke, N. (2011). An integrated conceptual model of respect in leadership

AC – 28.06.2024
Item No. – 8.1 (N)

As Per NEP 2020

University of Mumbai

Syllabus for Indian Knowledge System	
Board of Studies in Indian Knowledge System	
UG First Year Programme	
Semester	**I OR II**
Title of Paper	**Credits**
I) Indian Knowledge System	**2** **(either I or II Semester)**
From the Academic Year	**2024-2025**

Sr. No.	Heading	Particulars
1	**Description the course : Including but Not limited to :**	Introduction, relevance, Usefulness, Application, interest, connection with other courses, demand in the industry, job prospects etc.
2	**Vertical :**	Major/Minor/Open Elective /Skill Enhancement / Ability Enhancement/Indian Knowledge System (Choose By √)
3	**Type :**	Theory / Practical
4	**Credit**:	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted**:	100 Marks
7	**Course Objectives**: (List some of the course objectives) 1. To sensitize the students about context in which they are embedded i.e. Indian culture and civilisation including its Knowledge System and Tradition. 2. To help student to understand the knowledge, art and creative practices, skills and values in ancient Indian system. 3. To help to study the enriched scientific Indian heritage. 4. To introduce the contribution from Ancient Indian system & tradition to modern science & Technology.	
8	**Course Outcomes**: (List some of the course outcomes) 1. Learner will understand and appreciate the rich Indian Knowledge Tradition 2. Lerner will understand the contribution of Indians in various fields 3. Lerner will experience increase subject-awareness and self-esteem 4. Lerner will develop a comprehensive understanding of how all knowledge is ultimately intertwined	
9	**Modules**:-	
	Module 1: (10 Hours)	

	1. Introduction to IKS (What is knowledge System, Characteristic Features of Indian Knowledge System) **2.** Why IKS? (Macaulay's Education Policy and its impact, Need of revisiting Ancient Indian Traditions) **3.** Scope of IKS (The Universality of IKS (from Micro to Macro), development form Earliest times to 18th Century CE) **4.** Tradition of IKS (Ancient Indian Education System: Home, Gurukul, Pathashala, Universities and ancient educational centres)

	5. Relevant sites in the vicinity of the Institute (Water Management System at Kanheri, Temple Management of Ambarnath, etc.)	
	Module 2: (10 Hours)	
	1. Medicine (Ayurveda) **2.** Alchemy **3**. Mathematics **4.** Logic **5.** Art of Governance (Arthashastra)	
	Module 3: **(10 Hours) (Select Any FIVE out of the following)**	
	1. Aesthetics **2.** Town Planning **3**. Strategic Studies **4.** Krishi Shastra **5.** Vyakaran & Lexicography **6**. Natyashastra **7**. Ancient Sports **8**. Astronomy **9**. Yoga and Wellbeing **10.** Linguistics **11.** Chitrasutra **12.** Architecture **13.** Taxation **14.** Banking **15.** Trade and Commerce	
10	**Reference Books** **1.** Concise history of science in India- D.M. Bose, S.N Sen, B.V. Subbarayappa. **2.** Positive sciences of the Ancient Hindus- Brajendranatha seal, Motilal Banrasidas, Delhi 1958. **3.** History of Chemistry in Ancient India & Medieval India, P.Ray- Indian Chemicals Society, Calcutta 1956 **4.** Charaka Samhita- a scientific synopsis, P. Ray & H.N Gupta National Institute of Sciences of India, New Delhi 1965. **5.** MacDonnell A.A- History of Sanskrit literature **6.** Winternitz M- History of Indian Literature Vol. I, II & III **7.** Dasgupta S.N & De S.K- History of Sanskrit literature Vol. I. **8.** Ramkrishna Mission- cultural heritage of India Vol. I, II & III. **9.** Majumdar R. C & Pushalkar A.D- History & culture of the Indian people, Vol. I, II & III. **10.** Keith A.B- History of Sanskrit literature. **11.** Varadachari V- History of Sanskrit literature Chaitanya Krishna- A new History of Sanskrit	
11	**Continuous Internal Assessment: 40%**	**Semester End Examination : 60%**
12	**Continuous Evaluation through:** Assignment/ Presentations/ Projects (Group/Individual) / Field Visit Report **20 Marks,** class Test / MCQ Test **10 Marks,** Overall Conduct and Class Participation **10**	

	Marks	
13	**Format of Question Paper:** for the final examination Q1. Attempt any TWO Questions out of FIVE. **10 Marks** Q2. Attempt any FIVE Questions out of TEN **25 Marks** Q3. Attempt any FIVE Questions out of FIFTEEN. **25 Marks**	

Sign of the BOS Chairman
Name of the Chairman
Name of the BOS

Sign of the Offg. Associate Dean
Name of the Associate Dean
Name of the Faculty

Sign of the Offg. Dean
Name of the Offg. Dean
Name of the Faculty

AC – 24/11/2023
tem No. – 8.4 (N) - 1

As Per NEP 2020

University of Mumbai

Title of the Program

Co-Curricular Course
Introduction to Sports, Physical Literacy, Health and Fitness and Yog

SEM I

Syllabus for Two Credit

(With effect from the academic year 2024-25)

Semester I
Course Structure

Semester	Paper	Title of Paper	No of lecture (Theory)	Internal Evaluation (IE)	End Semester Evaluation	Total Marks	Credits
First	CC	Introduction to Sports, Physical Literacy, Health & Fitness and Yoga	30	20	30	50	02
Second	CC	Introduction to Sports, Physical Literacy, Health & Fitness and Yoga	30	20	30	50	02
Total	**-**	**-**	**60**	**40**	**60**	**100**	**04**

Semester I

1.1 Preamble:

India is growing rapidly as a global super-power. To face the challenges of the century and to keep up with the pace of the world, maintaining health is of prime importance. Giving thrust to healthy society, Physical Education, Sports, Health & fitness and Yoga are of great significance in today's world. The Government of India insists on Physical Fitness, Mental Health and Overall Development of Personality for every citizen. In these lines, the Government has launched Fit India Movement, Khelo India, TOPS and National Sports Day, International Day of Yoga etc. These initiatives have given impetus and awareness among general public, professional and academicians. However, creating efficient and skilled human resource in the field of Physical Education, Sports and Yoga is identified as the need of the hour. Thus, the Governments of India and Government of Maharashtra have included Physical Education, Sports and Yoga as a key area under the NEP 2020.

1.2 Objectives of the Course:

1. To make students familiarize with concepts of Health, Fitness, Yoga, Sports & Physical Literacy.
2. To sensitize the students about background knowledge of Sports structure of Sports Federations, Indian Olympic Association, Khelo India Schemes, FIT India movement, National Sports Day, Intercollegiate Sports structure of University of Mumbai.

3. To familiarize the students with the various physical education concepts and information regarding various Olympic Sports.
4. To make students aware about famous sports personalities and various awards given to Sportsperson and coaches.
5. To educate students regarding various career opportunities in the sports management, sports coaching, sports industry, health and fitness, sports infrastructure, yoga, etc.
6. The course is designed primarily to educate those interested in becoming a Physical Literacy Trainer/Ambassador as well as those who wish to stay lifelong active and want to influence others to be active for life.

1.3 Salient features of the course:

1. The course is designed to enhance the Competency, attitude and skills related knowledge to Physical Literacy, health & fitness, Sports & Yoga.
2. The course is design to implemented as per CBCS pattern .

1.4 Utility of the course:

1. The course may provide opportunity in the field of physical education, sports management, health & fitness, yoga, etc.
2. The course is significant to enhance the abilities of the student to work in the different fields of physical education in the area of coaching, event management, health & fitness, yoga etc.
3. The professional abilities and personality of the students may be enhanced.

1.5 Program outcomes:

By the end of the program the students will be able to:

1. The curriculum would enable the pass out students to be entrepreneur (to start their own fitness center, gym, yoga studio etc.) and device appropriate fitness program for different genders and age groups at all level
2. The curriculum would enable to officiate, supervise various sports events and organize sports events.
3. Students acquire the knowledge of Physical Education, Sports and Yoga and understand the purpose and its development.
4. The student learns to plan, organize and execute sports events.
5. Student will learn theoretical and practical aspects of game of his choice to apply at various levels for teaching, learning and coaching purposes efficiently.
6. Student acquires the knowledge of opted games, sports and yoga and also learns the technical and tactical experience of it.
7. Student will learn to apply knowledge of Physical fitness and exercise management to lead better quality life.
8. Students will understand and learn different dimension of active life style.
9. Student will learn the knowledge of nutrition and diet.
10. Students will be able to assess the physical fitness in a scientific way.
11. The students will be able to continue professional courses and research in Physical Education, sports and yoga.
12. It helps the student to understand theory and practical aspects of physical literacy. These aspects include role of motivation and confidence, how to focus on positive experience, new styles of teaching, inclusive session planning and review the progress in physical activities.

1.6 Programme Duration: The structure of Sports & Physical Literacy has two semesters in total covering a period of two years.

1.7 Duration of the Course:. First Year comprises two semesters. Each semester will have theory paper 30 marks for End Semester Examination and 20 marks for Internal Evaluation for each paper.

1.8 Modes of Internal Evaluation: Assignment, Tutorial, Presentation, MCQs via Google, Field Visits, any other suitable mode along with marks for Attendance of the students.

1.9 Medium of Instruction: English

1.10 Course Structure

Credits: 02 **Lectures: 30** **Marks: 50**

Unit Number	Title of the Unit	No. of Lecture	No. of Credits
1	**Introduction to Sports, Physical Literacy, Health & fitness and Yoga** 1.1 Meaning and Definition of Sports, Physical Literacy, Health & Fitness and Yoga 1.2 Aim, Objectives & Importance of Sports, Physical Literacy, Health & Fitness and Yoga 1.3 History of Sports, Physical Literacy, Physical Education and Yoga 1.4 Modern trends of Sports, Physical Literacy, Health & Fitness and Yoga	15	1

2	**Introduction to Structure of Sports associations, Fitness Training & Yogic Asanas** 2.1 Various government schemes, awards and famous sports personalities 2.2 Sports Structure of Sports Federations, Khelo India, Sports Tournaments of University of Mumbai and Indian Olympic Association 2.3 Fundamental Principles of Fitness training and Yoga 2.4 Components of health related and skill related physical fitness 2.5 Types of Yogic practices – Asanas, Pranayama and Meditation	15	1

References –

1. Bucher, C. A. (n.d.) Foundation of physical education. St. Louis: The C.V. Mosby Co. Deshpande, S. H. (2014). Physical Education in Ancient India. Amravati: Degree college of Physical education.
2. Mohan, V. M. (1969). Principles of physical education. Delhi: Metropolitan Book Dep. Nixon, E. E. & Cozen, F.W. (1969). An introduction to physical education. Philadelphia: W.B. Saunders Co.
3. William, J. F. (1964). The principles of physical education. Philadelphia: W.B. Saunders Co.
4. Coalter, F. (2013) Sport for Development: What game are we playing? .Routledge.
5. Singh Hardayal (1991), Science of Sports Training, DVS Publication, New Delhi
6. Muller, J. P.(2000). Health, Exercise and Fitness. Delhi : Sports.
7. Russell, R.P.(1994). Health and Fitness Through Physical Education. USA : Human Kinetics.
8. Uppal, A.K. (1992). Physical Fitness. New Delhi : Friends Publication.
9. Nagendra, H. R. & Nagarathna, R. (2002). Samagra Yoga Chikitse. Bengaluru: Swami Vivekananda Yoga Prakasana.
10. Kumar, Ajith. (1984) Yoga Pravesha. Bengaluru: Rashtrothanna Prakashana.
11. D.M Jyoti, Yoga and Physical Activities (2015) lulu.com3101, Hills borough, NC27609, United States
12. D.M Jyoti, Athletics (2015) lulu.com3101, Hills borough, NC27609, United States
13. Gharote, M. L. & Ganguly, H. (1988). Teaching methods for yogic practices. Lonawala: Kaivalyadhama.
14. Pinto John and Roshan Kumar Shetty (2021) Introduction to Physical Education, Louis Publications, Mangalore
15. Shekar, K. C. (2003). Yoga for health. Delhi: Khel Sahitya Kendra.
16. Amit Arjun Budhe, (2015) Career aspects and Management in Physical Education, Sports Publication, New Delhi
17. Pinto John and Ramachandra K (2021) Kannada Version, Daihika Shikshanada Parichaya, Louis

Publications, Mangalore

AC –20.04.2024
Item No. –5.6 (N) Sem I (1a)

As Per NEP 2020

University of Mumbai



Syllabus for Basket of AEC	
Board of Studies in English	
UG First Year Programme B.Sc	
Semester	**I**
Title of Paper	**Credits**
Introduction to Communication **Skills in English I**	**2**
From the Academic Year	**2024-2025**

Sr. No.	Heading	Particulars
1	**Description of the course: Including but Not limited to:**	**Introduction to Communication Skills in English I** Effective academic communication skills are essential for success in scholarly pursuits. In the academic realm, proficiency extends beyond verbal articulation to encompass precise and coherent written expression. Students are not only required to engage in thoughtful discussions and articulate complex ideas verbally but must also demonstrate their understanding through well-crafted written assignments, and presentations. Academic communication involves the mastery of scholarly conventions, such as adherence to academic writing styles, and the ability to engage in dialogue with peers and scholars. It encompasses the skillful navigation of academic discourse, fostering an environment where ideas are shared, challenged, and refined. Developing strong academic communication skills empower individuals to contribute meaningfully to intellectual conversations, enriching both their academic journey and the broader scholarly community. This course with its 30:20 pattern will also help in accomplishing this goal. The course is aimed at honing their cognitive, analytical, linguistic and creative skills. It is hoped that by the end of the academic year, the learners will have developed confidence in using the English language both for oral and written communication as well as develop interest in enhancing these skills later on.
2	**Vertical:**	AEC (Ability Enhancement Course)
3	**Type:**	Theory
4	**Credit**:	2 credits (1credit=15 Hours for Theory in a semester)
5	**Hours Allotted:**	30Hours
6	**Marks Allotted**:	50Marks
7	**Course Objectives:** 1. To cultivate a comprehensive understanding of communication skills 2. To enhance reading proficiency with a diverse range of written texts with different genres and styles of written communication. 3. To develop proficiency in grammatical accuracy with specific focus on common grammatical errors and provide targeted exercises for improvement. 4. To equip learners with proficient presentation and conversation skills by integrating practical exercises for public speaking and interpersonal communication. 5. To provide practical experience in formal writing, including Statement of Purpose (SoP) preparation.	

8	**Course Outcomes**: At the end of the course, learners will: • Demonstrate an understanding of essential aspects of communication skills • Exhibit the ability to Read a variety of written text using subskills such as skimming and scanning. • Identify and rectify common grammatical errors in English. • Show competence in delivering compelling presentations and engage in articulate and effective conversations in English across different contexts. • Display advanced formal writing skills in crafting job application letters, CVs, and Statements of Purpose.

9	**Modules**: -
	Module1: (15 Lectures)
	A) Introduction to Communication Skills • The Seven Cs of Effective Communication • Verbal and Non-Verbal Communication • Cross-cultural communication • Technology-enabled Business Communication • Features of Effective Written Communication • Characteristics of an Effective Speech • Effective Listening Skills **B) Reading Skills:** • Scanning a text for information • Skimming a passage to look for main ideas, understanding text type • Guessing meaning of an expression (word/phrase/clause) • Building inference skills Passages from academic, professional, and literary domains around 200- 250 words, could be chosen in this section. **C) Grammar** • Subject Verb Agreement • Tenses • Question Tag • Change the Voice • Framing Interrogative sentence • Synonyms and Antonyms • Misplaced modifiers Grammar should be taught with a remedial approach so as to enable learners to avoid common errors in their written and spoken communication.

Module 2: (15 Lectures)

A) Speaking Skills in English

Conversation skills

- Opening a conversation
- Introducing oneself in various contexts
- Introducing others formally and informally

Presentation Skills

- Introduction: Essentials of Presentation skills
- Analysis of model Presentations
- Planning and Delivering the Presentation
- Developing & Displaying Visual Aids
- Handling Questions from the Audience

B) Formal Writing Skills:

- Interpreting and describing different types of visual information
- Job applications with bio data (solicited and unsolicited)
- Statement of Purpose

10 **Text Books: N.A.**

11 **References:**

- Bellare, Nirmala. *Reading & Study Strategies*. Books. 1 and 2. Oxford University Press, 1997, 1998
- Bellare, Nirmala. *Easy Steps to Summary Writing and Note-Making.* Amazon Kindle Edition, 2020
- Comfort, Jeremy, et al. *Speaking Effectively: Developing Speaking Skills for Business English*. Cambridge University Press, 1994.
- Das, Bikram K., et. al. *An Introduction to Professional English and Soft Skills.* Cambridge University Press India Pvt. Ltd., 2010
- Das, Yadjnaseni & R. Saha (eds.) *English for Careers*. Pearson Education India, 2012.
- Dimond-Bayir, Stephanie. *Unlock Level 2 Listening and Speaking Skills* Student's Book and Online Workbook: Listening and Speaking Skills Student's Book+ Online Workbook. Cambridge University Press, 2014.
- Doff, Adrian and Christopher Jones. *Language in Use* (Intermediate and Upper Intermediate). CUP, 2004.
- Glendinning, Eric H. and Beverley Holmstrom. Second edition. *Study Reading: A Course in Reading Skills for Academic Purposes*. CUP, 2004
- Goodale, Malcolm. P*rofessional Presentations Video Pack: A Video Based Course*. Cambridge University Press, 1998.
- Grellet, F. *Developing Reading Skills.* Cambridge: Cambridge University Press, 1981
- Grussendorf, Marion. *English for Presentations.* Oxford University Press, 2007.

- Hamp- Lyons, Liz and Ben Heasiey. Second edition. *Study Writing: A Course in Writing Skills for Academic Purposes*. CUP, 2006
- Labade, Sachin, Katre Deepa et al. *Communication Skills in English*. Orient Blackswan, Pvt Ltd, 2021.
- Lewis, N. *How to Read Better & Faster*. New Delhi, Goyal Publishers & Distributors Pvt. Ltd, 2006.
- McCarthy, Michael and Felicity O'Dell. English *Vocabulary in Use*. Cambridge: Cambridge University Press, 2001.
- Mohan, RC Sharma Krishna. *Business Correspondence and Report Writing*. Third edition. Tata McGraw-Hill Education, 2002.
- Murphy, Raymond, et al. *Grammar in use: Intermediate*. Cambridge University Press, 2000
- Raman, Meenakshi, and Singh, Prakash. *Business Communication*. India, Oxford University Press, 2006.
- Richards, Jack C., and Chuck Sandy. *Passages* Level 2 Student's Book. Cambridge University Press, 2014.
- Sadanand, Kamlesh & S. Punitha. *Spoken English: A Foundation Course*. (Part 1 & 2). Orient Blackswan. 2009.
- Sasikumar, V., et al. *A Course in Listening & Speaking I*. 2005. Cambridge University Press India Pvt. Ltd. (under the Foundation Books Imprint), 2010
- Savage, Alice, et al *Effective Academic Writing*. Oxford: OUP, 2005
- Sethi, J. *Standard English and Indian usage: Vocabulary and grammar*. PHI Learning Pvt. Ltd., 2011.
- Taylor, Grant. *English Conversation Practice*. 1967. Tata McGraw-Hill, 2013
- Turton, Nigel D. *A B C of Common Grammatical Errors*. 1995. Macmillan India Ltd., 1996
- Vas, Gratian. *English Grammar for Everyone*. Mumbai, Shree Book Centre, 2015
- Watson, T. *Reading Comprehension Skills and Strategies*: Level 6. Saddleback Educational Publishing, 2002

Web link Resources:

- A conversation about household appliances: https://youtu.be/rAPl0fSborU 13. Video on psychology: Why do we dream? https://youtu.be/2W85Dwxx218
- Video on social media: What is a social media influencer? https://youtu.be/39A3og7enz8
- Tips on communication (TED Talk): The Secrets of Learning a New Language https://youtu.be/o_XVt5rdpFY
- Expressing opinions: If Cinderella Were a Guy: https://youtu.be/p4OyCNctKXg
- Video on the English language: Where did English come from? https://youtu.be/YEaSxhcns7Y

12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** • Participation in an activity based on Presentation Skills and Conversation skills each (Module 2 A) (10 marks) The class may be divided into batches by creating formal schedule for the same before the semester End Examination. • Participation in two classroom activities involving skills other than presentation and conversation skills (05 marks) • Overall attendance (05 marks) (Percentage of learners' attendance in class to be considered) **Suggested Activities:** ▪ Listening to audio clips/ books to enhance listening skills ▪ Reading aloud from newspapers, magazines, stories, non-fiction followed by classroom discussion on these to enhance reading and speaking skills	
14	**Format of Question Paper:** for the final examination Q.1. Short notes (2 out of 4) – On Module 1 (A) 10 marks Q.2. A. Unseen Passage (200-250 words) (Module 1 B) 06 marks B. Questions on grammar (Module 1 C) 04 marks Q. 3. Writing Skills (1 out of 2) on Module 2 (B) 10 marks	

Sign of BOS Chairman **Prof. Dr. Shivaji Sargar** **Board of Studies in English**	**Sign of the Offg. Associate Dean** **Dr. Suchitra Naik** **Faculty of Humanities**	**Sign of the Offg. Associate Dean** **Dr. Manisha Karne** **Faculty of Humanities**	**Sign of the Dean** **Prof. Dr. Anil Singh** **Faculty of Humanities**

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

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Board of Studies in Mathematics	
UG First Year Programme	
Semester	**II**
Title of Paper	**Credits 2/ 4**
I) Financial Mathematics II	**2**
From the Academic Year	**2024-25**

Name of the Course: Financial Mathematics - II

Sr. No.	Heading	Particulars
1	**Description the course:** **Including but not limited to:**	This course offers a comprehensive exploration of finance and statistical analysis. It covers essential topics such as shares, mutual funds, time series analysis, and index numbers. Students learn about shares and mutual funds, including concepts like face value, market value, and dividends, and how to calculate net income considering various factors. Additionally, they delve into time series analysis, where they explore trend estimation methods like Moving Average and Least Squares, and forecasting techniques using the Least Squares Method. The significance of index numbers in economic analysis is also emphasized, providing students with practical skills and knowledge applicable to real-world scenarios in finance and statistics.
2	**Vertical:**	OE
3	**Type:**	Theory
4	**Credits:**	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted:**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):** (List the course objectives) This course takes a comprehensive look at important ideas in finance and statistical analysis. Students learn about the complexities of financial instruments like stocks and mutual funds, as well as the principles of time series analysis and index numbers, throughout this course. CO1: To offer a thorough understanding of shares and mutual funds, including their types, components and calculations. CO2: To learn the concepts of time series and index numbers, including trend estimation methods and forecasting techniques. CO3: To develop proficiency in calculating various index numbers and understanding their significance in economic analysis. CO4: To acquire skills in averaging prices through Systematic Investment Plan (SIP) and interpreting its implications in mutual fund investments.	
8	**Course Outcomes (OC):**	

	After completion of the course, students will be able to. OC1: demonstrate a comprehensive understanding of financial instruments such as shares and mutual funds, enabling them to make informed investment decisions. OC2: calculate various index numbers, enabling them to measure price changes and cost of living accurately. OC3: apply statistical tools such as averaging prices through SIP in mutual fund investments, enhancing their practical understanding of financial markets. OC4: analyze time series data and estimating trends using appropriate statistical methods. OC5: develop the ability to forecast future trends using the Least Squares Method, enhancing their predictive capabilities.
9	**Modules:-** **Module 1: Shares and Mutual Funds:** • Concepts of shares, face value, market value, dividend, equity shares preferential shares, bonus shares, Simple examples. • Mutual Funds, Simple problems on calculation of Net Income after considering entry load, dividend, change in Net Asset Value (N.A.V) and exit load. • Averaging of price under the 'Systematic Investment Plan (S.I.P)'.
	Module 2: Time Series and Index Numbers • Concept and Components of time series. Estimation of Trend using Moving Average Method & Least Squares Method (only Linear Trend). • Concept of Forecasting using Least Squares Method. • Concept and uses of Index Numbers. Simple and Composite Index Nos. (unweighted, weighted). • Laspeyre's Price Index No., Paasche's Price Index No. Fisher's Price Index No., Dorbish-Bowley's Index Number, Marshall and Edgeworth Index Number. • Cost of Living Index No., Real Income
10	**Text Books** 1. Fundamentals of Mathematical Statistics,12th Edition, S. C. Gupta and V. K. Kapoor, Sultan Chand & Sons, 2020. 2. Statistics for Business and Economics, 11th Edition, David R. Anderson, Dennis J. Sweeney and Thomas A. Williams, Cengage Learning, 2011. 3. Introductory Statistics, 8th Edition, Prem S. Mann, John Wiley & Sons Inc., 2013.
11	**Reference Books** 1. A First Course in Statistics, 12th Edition, James McClave and Terry Sincich, Pearson Education Limited, 2018. 2. Introductory Statistics, Barbara Illowsky, Susan Dean and Laurel Chiappetta, OpenStax, 2013.
	<u>Scheme of the Examination</u>
	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, presentations, projects, role play, creative writing, assignments etc. (at least 3)	

Sr. No.	Particulars	Marks
1	A class test of 10 marks is to be conducted during each semester in an Offline mode.	10
2	Project on any one topic related to the syllabus or a quiz (offline/online) on one of the modules.	05
3	Seminar/ group presentation on any one topic related to the syllabus.	05

Paper pattern of the Test (Offline Mode with One hour duration):
Q1: Definitions/Fill in the blanks/
True or False with Justification.
(04 Marks: 4 x 1).
Q2: Attempt any 2 from 3
descriptive questions. (06 marks: 2
× 3)

14 **Format of Question Paper:**
The semester-end examination will be of 30 marks of one hour duration covering the entiresyllabus of the semester.

Note: Attempt any TWO questions out of THREE.			
Q.No.1	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5	15 Marks
Q.No.2	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5	15 Marks

	Q.No.3	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5	15 Marks

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

AC – 20/04/2024
Item No. – 6.6 Sem. I (1a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE (Scheme I)	
Board of Studies in Mathematics	
UG First Year Programme	
Semester	**I**
Title of Paper	**Credits**
I) Quantitative Techniques – I	**2**
II)	**2**
III)	**2**
From the Academic Year	**2024-25**

Name of the Course: Quantitative Techniques – I (OE – I)

Sr. No.	Heading	Particulars
1	**Description the course:** **Including but not limited to:**	This course deals with the Basic Mathematics that forms an essential component of Most of the Competitive and Entrance Examinations, such as Banking, Management Entrance, UPSC/MPSC, SET/NET, GMAT/GRE to quote a few. Although the Math-concepts involved in these examinations are of elementary level, the nature of the problems in such exams is far different, and the difficulty level of the questions is much higher, than the typical ones, based on which students are tested in schools. A person appearing for such exams is expected to have a thorough understanding of the concepts, to have ability to think logically, and to be able to interpret the data, presented in different manner.
2	**Vertical:**	Open Elective
3	**Type:**	Theory
4	**Credits:**	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted:**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):** This course revises the basic mathematical concepts learned during school career. However, the problems asked in this course would be mostly advanced and indirect, and would demand broader and critical thinking. The course aims to enhance the reasoning power and logical thinking of the learners and nurture their intellect so as to make them competent across all competitive exams. CO1. To reinforce the basic math concepts and ideas within the learners CO2. To enhance the reasoning power of the learners and make them think over and apply concepts/formulae to solve math problems of indirect nature, thereby developing their problem-solving capacity. CO3. To develop logical thinking of the learners CO4. To make learners competent across all competitive and entrance examinations.	
8	**Course Outcomes (OC):** After completion of the course, students will be able to. OC1: understand the integers, rational numbers, real numbers and their operations. OC2: learn the concepts of GCD, LCM. OC3: understand the concepts related to averages and percentages, such as arithmetic mean.	

	geometric mean, harmonic mean OC4: evaluate the ratios and proportions OC5: understand the Profit, Loss, Percentage Profit and Percentage Loss. OC6: learn the concepts related to Time, Speed and Distance.
9	**Modules:-** **Module 1: Elementary Arithmetic - I** 1. Numbers and BODMAS: • Review of the number systems (Integers, Whole Numbers, Rational Numbers and Real Numbers) • Review of the basic operations and their results (like odd + even = odd, odd × even = even, odd raised to even is odd etc) • Easy tricks to do fast calculations (multiplication, squares, square-roots etc) • GCD and CLM of two or more numbers. 2. Averages and Percentage: • The three different means viz. Arithmetic Mean, Geometric Mean, Harmonic Mean • Properties of the three means, such as (a) AM-GM-HM inequality, (b) The mean of two numbers lies in between the two numbers, (c) In case of several numbers, the product of AM and the number of numbers equals the addition of numbers, (d) In case of several numbers, the product of the numbers equals the GM raised to the number of numbers, (e) The effect of adding the same quantity to each number on AM, (f) The effect of multiplying each number by the same quantity on GM • Percentage 3. Ratio and Proportion: • Concept of Ratio of two quantities • Ratio related properties such as invertendo, alternendo, componendo, dividendo etc • Direct and Inverse Proportion [The problems to be asked should be of varied levels of difficulty. A few ones based on directly applying a given formula may be asked at the beginning; however, the latter ones should demand critical analysis of the given information and a thoughtful selection of the method/formula to solve the same.]
	Module 2: Elementary Arithmetic – II 1. Profit and Loss: • Definitions of Profit and Loss • The concept of Percentage Profit and Percentage Loss 2. Time, Speed and Distance: • The concept of average speed based on the total distance crossed and the total time taken • The difference between crossing a pole/tower/tree/human and crossing a tunnel/bridge/station • Crossing a stationary object versus crossing a moving object

<table>
<tr><td></td><td colspan="2">

- Moving with/against the current (in a river)

3. Work, Pipes and Cisterns:

- Work done in unit time is reciprocal of the total work done (assuming that the amount of work done in each unit time is same),
- Filling/refilling/emptying cisterns.

</td></tr>
<tr><td></td><td colspan="2"></td></tr>
<tr><td>10</td><td colspan="2">Text Books

1. Bible To Basic Mathematics, Pragati Agarwal
2. Quantitative Aptitude for Competitive Examinations, R. S. Agarwal
3. Logical and Analytical Reasoning: Useful for All Competitive Exams, A. K. Gupta</td></tr>
<tr><td>11</td><td colspan="2">Reference Books

1. Arithmetic : Subjective And Objective For Competitive Examinations, R. S. Agarwal
2. Maths Book For Competitive Exams, Vikas Bhalla
3. Reasoning For Competitive Examinations, Nishit K Sinha</td></tr>
<tr><td></td><td colspan="2"><u>Scheme of the Examination</u></td></tr>
<tr><td></td><td colspan="2">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.</td></tr>
<tr><td>12</td><td>Internal Continuous Assessment: 40%</td><td>Semester End Examination: 60%</td></tr>
<tr><td>13</td><td>Continuous Evaluation through: Quizzes, Class Tests, presentations, projects, role play, creative writing, assignments etc.
(at least 3)
<table>
<tr><td>Sr. No.</td><td>Particulars</td><td>Marks</td></tr>
<tr><td>1</td><td>A class test of 10 marks is to be conducted during each semester in an Offline mode.</td><td>10</td></tr>
<tr><td>2</td><td>Project on any one topic related to the syllabus or a quiz (offline/online) on one of the modules.</td><td>05</td></tr>
<tr><td>3</td><td>Seminar/ group presentation on any one topic related to the syllabus.</td><td>05</td></tr>
</table></td><td></td></tr>
</table>

	Paper pattern of the Test (Offline Mode with One hour duration): Q1: Definitions/Fill in the blanks/ True or False with Justification. (04 Marks: 4 x 1). Q2: Attempt any 2 from 3 descriptive questions. (06 marks: 2 × 3)	

14 **Format of Question Paper:**

The semester-end examination will be of 30 marks of one hour duration covering the entiresyllabus of the semester.

Note: Attempt any TWO questions out of THREE.			
Q.No.1	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5/OC6	15 Marks
Q.No.2	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5/OC6	15 Marks
Q.No.3	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5/OC6	15 Marks

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

AC – 20/04/2024
Item No. – 6.6 Sem. I (1b)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE (Scheme I)	
Board of Studies in Mathematics	
UG First Year Programme	
Semester	**I**
Title of Paper	**Credits**
I) Logic and Data Interpretation – I	**2**
II)	
III)	
From the Academic Year	**2024-25**

Name of the Course: Logic and Data Interpretation – I (OE – II)

Sr. No.	Heading	Particulars
1	**Description the course:** **Including but Not limited to:**	This course deals with the Logical Thinking and Data Interpretation, that forms an essential component of Most of the Competitive and Entrance Examinations, such as Banking, Management Entrance, UPSC/MPSC, SET/NET, GMAT/GRE to quote a few. The nature of the problems and the difficulty level of the questions is quite high and a person appearing for such exams is expected to have a thorough understanding of the concepts, to have ability to think logically, and to be able to interpret the data, presented in different manner.
2	**Vertical :**	Open Elective
3	**Type :**	Theory
4	**Credits :**	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):** This course revises the basic mathematical concepts learned during school career. However, the problems asked in this course would be mostly advanced and indirect, and would demand broader and critical thinking. The course aims to enhance the reasoning power and logical thinking of the learners and nurture their intellect so as to make them competent across all competitive exams. CO1. To reinforce the basic math concepts and ideas within the learners CO2. To enhance the reasoning power of the learners and make them think over and apply concepts/formulae to solve math problems of indirect nature, thereby developing their problem-solving capacity. CO3. To develop logical thinking of the learners CO4. To make learners competent across all competitive and entrance examinations.	
8	**Course Outcomes (OC):** After completion of the course, the learners will be able to OC1: think logically about the given sequence of numbers/alphabets/symbols OC2: understand the odd/unfit element amongst the set of various elements OC3: develop logical thinking to obtain relations between two people	

	OC4: understand the directions, angles between any two angles OC5: get a general idea about the concept of coding a message and how to decode a coded message OC6: develop logical thinking to check whether or not the given information is sufficient to answer a question.
9	**Modules:-** **Module 1: Fundamentals of Logical thinking - I** 1. Number/Letter/Symbol Series: • Given a finite sequence of numbers, the learners are expected to find a simple rule (difference between or the ratio of consecutive numbers, square-quantities, cube-quantities, recursive rules etc) that binds all the numbers and be able to fill in the gap either at the end or at the beginning or in between. • Given a finite sequence of objects, made up of sets of alphabets/symbols, the learners are expected to observe the pattern that is visible in each set of letters/symbols and be able to predict the missing object/s 2. Odd Man Out: • Given a finite sequence of numbers, the learners are expected to find a simple rule that binds all but one and be able to find out the odd one • Given a finite sequence of objects, made up of sets of alphabets/symbols, the learners are expected to observe the pattern that fits each except one and be able to find out the miss-fit object 3. Relations: • Understanding the terms in relations such as mother, father, son, daughter, grand-mother, grand-father, grandson, grand-daughter, brother, sister, siblings, mother-in-law, father-in-law, cousin, nephew, niece, husband, wife, life- partner, spouse, uncle, aunt. • Forming a tree/diagram based on the information given, vertical aligning of different generations, definite symbols to be used for different people viz. square for male, circle for female, triangle for those whose gender is not specified and cannot be determined, double arrow (↔) for siblings and equality (=) for married couples [The problems to be asked should be of varied levels of difficulty. A few ones based on directly applying a given formula may be asked at the beginning; however, the latter ones should demand critical analysis of the given information and a thoughtful selection of the method/formula to solve the same.]
	Module 2: Fundamentals of Logical Thinking - II 1. Directions: • The eight directions and their names • The angles between any two directions • Revision of simple Pythagorean triplets such as (3-4-5), (6-8-10), (5-12-13), (7-24-25), (8-15-17), (9-12-15), (10-24-26), and their use in finding the distance between two points, say A and B when AC and CB are perpendicular, Revision of 45-45-90 triangle.

<table>
<tr><td></td><td>2. Coding and Decoding
Alphabet Coding, Numerical Coding, Symbol based Coding, Values Coding, Substitution Coding
Deciphering a given Coding
3. Data Sufficiency:
The concept/idea of Data Sufficiency, for example, the lengths of all the sides are sufficient to find the area of a triangle but not of a quadrilateral
Problems based on insufficient data and finding the minimal info needed to obtain the answer (In such case, not the final answer, but the minimal additional required information is to be found out) – The problems may be based on elementary mathematics or day-to-day situations.</td></tr>
<tr><td></td><td></td></tr>
<tr><td>10</td><td>Text Books

1 A Modern Approach To Verbal & Non-Verbal Reasoning, R. S. Agarwal

2. Quantitative Aptitude for Competitive Examinations, R. S. Agarwal
3. Logical and Analytical Reasoning: Useful for All Competitive Exams, A. K. Gupta</td></tr>
<tr><td>11</td><td>Reference Books

1. How To Crack Test of Reasoning In All Competitive Exams, Jaikishan and Premkishan
2. Maths Book For Competitive Exams, Vikas Bhalla
3. Reasoning For Competitive Examinations, Nishit K Sinha</td></tr>
<tr><td></td><td><u>Scheme of the Examination</u></td></tr>
<tr><td></td><td>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.</td></tr>
<tr><td>12</td><td>Internal Continuous Assessment: 40%</td><td>Semester End Examination: 60%</td></tr>
<tr><td>13</td><td>Continuous Evaluation through: Quizzes, Class Tests, presentations, projects, role play, creative writing, assignments etc.
(at least 3)<table><tr><td>Sr. No.</td><td>Particulars</td><td>Marks</td></tr><tr><td>1</td><td>A class test of 10 marks is to be conducted during each semester in an Offline</td><td>10</td></tr></table></td><td></td></tr>
</table>

	mode.	
2	Project on any one topic related to the syllabus or a quiz (offline/online) on one of the modules.	05
3	Seminar/ group presentation on any one topic related to the syllabus.	05

Paper pattern of the Test (Offline Mode with One hour duration):
Q1: Definitions/Fill in the blanks/
True or False with Justification.
(04 Marks: 4 x 1).
Q2: Attempt any 2 from 3
descriptive questions. (06 marks: 2
× 3)

14 **Format of Question Paper:**
The semester-end examination will be of 30 marks of one hour duration covering the entiresyllabus of the semester.

Note: Attempt any TWO questions out of THREE.			
Q.No.1	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5/OC6	15 Marks
Q.No.2	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5/OC6	15 Marks
Q.No.3	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5/OC6	15 Marks

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**

Signatures of Team Members

Sr.No	Name	Signature
1.		
2.		
3.		

4.		
5.		

AC – 20/04/2024
Item No. – 6.6 Sem. I (2a)

As Per NEP 2020

University of Mumbai



Syllabus for Basket of OE	
Board of Studies in Information Technology	
UG First Year Programme	
Semester	**I**
Title of Paper	**Credits 2/ 4**
I. IT_Fundamentals of Computers (Open Elective)[OE]	**2**
From the Academic Year	**2024-2025**

Name of the Course: IT_Fundamentals of Computer

Sr.No.	Heading	Particulars
1	**Description the course:**	This course is designed to aim at imparting basic level knowledge about computer, input output devices and memory.
2	**Vertical:**	**Open Elective**
3	**Type:**	Theory
4	**Credits:**	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted:**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):** **CO 1.** To understand the basic concepts of computer **CO 2.** To understand the fundamentals of hardware, software and programming **CO 3.** To understand the concepts of operating system and internet **CO 4.** To familiarize the student with the basic taxonomy and terminology of computer networks	
8	**Course Outcomes (OC):** **OC 1.** Learners will be able to explain the needs of hardware and software required for a computation task. **OC 2.** Learners will be able to understand the need of primary and secondary storage **OC 3.** Learners will be able to understand the concepts of operating system, networking and internet **OC4.** Learners will be able to understand basic network topologies	
9	**Modules: -** **Module 1:**	
	1.Computer Basics Introduction to Computers: Definition of computer, characteristics of a Computer, History of computers, Generation of Computers. Classification of computers-analog, digital and hybrid. Algorithms, Problem solving using computers **2.Input/output Units:** Input Devices-Keyboard, Mouse, Scanner, OMR, OCR, Barcode reader, Joystick, Tracker ball, Touch screen, MICR, Output devices-monitor-different types, Printers-Impact and Non-Impact printers, plotter **3.Computer Memory:** Computer Memory: Elementary Concepts of Sequential and Random Access, Primary Storage Devices, RAM, ROM, Types of ROM-PROM, EPROM, EEPROM. Secondary Storage Devices- Magnetic Disk,	

	Magnetic Drum, Magnetic Tape, Hard Disk, CDROM, DVD, Pen drive. **4.Computer Languages:** Why programming Language? Assembly Language, Higher Level Programming Languages, Compiling High Level Language Program.	
	Module 2:	
	1. Basics of operating systems: Generations, Types, Structure, Services, System Calls, System Boot, System Programs, Protection and Security Memory management**:** Main Memory, Swapping, Contiguous Memory Allocation, Paging, Structure of Page Table, Segmentation, Virtual Memory, Demand Paging. **2. File system interface:** File Concept, Access Methods, Directory Structure, File System Structure, Allocation Methods, and Free-Space Management. Basic DOS (Disk operating system) commands**:** cd, dir, copy, mkdir, clean etc. Basics of windows operating system, working with utilities of windows operating system like notepad, paint, word pad etc. **3. Computer Network:** Introduction to Data Communication System and Its Components, Networks, types of Connection and Topologies, LAN, MAN, WAN, et al. Network Models- OSI Models, Layers in OSI Models, TCP/IP protocol. **4. Internet and WWW**: Introduction to Internet and its Applications, Connecting to the Internet, Client/Server Technology, Internet as a Client/Server Technology, Email, Video-Conferencing, Internet Service Providers, Domain Name Server, Internet Address, Internet Protocols (IP. TCP, HTTP, FTP, SMTP, POP, Telnet), Introduction to Intranet, Internet vs. Intranet vs. Extranet, Advantages & Disadvantages of Intranet. World Wide Web and Its Evolution, Architecture of Web. Uniform Resource Locator (URL), Browsers: Internet Explorer, Netscape Navigator, Opera, Firefox, Chrome, Mozilla.	
10	**Text Books** 1 Rajaraman. V: Fundamentals of Computers, Prentice Hall India,2004 2 Peter Norton's, *"Introduction to Computers", 7th* Edition, Tata McGraw-Hill, 2010, ISBN: 9780070671201 3. Forouzan, B. A., &Fegan, S. C. New York: "Data communications and networking", McGraw-Hill Higher Education, 2007.	
11	**Reference Books** 1. Computer Basics Absolute Beginner's Guide By Michael Miller and Mike Miller 2. Operating System Concepts, Silberschatz, Ninth Edition, Willey Publication	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** Class test of 1 of 15 marks Class test of 2 of 15 marks Average of the two: 15 marks Quizzes/ Presentations/ Assignments: 5 marks	**Semester End Examination (30 Marks)– 1 hr duration**

	Total: 20 marks	
14	**Format of Question Paper:** (**Semester End Examination : 30 Marks. Duration:1 hour)** Q1: Attempt any two (out of four) from Module 1 (15 marks) Q2: Attempt any two (out of four) from Module 2 (15 marks)	

Sign of Chairperson
Dr. Mrs. R. Srivaramangai
Ad-hoc BoS (IT)

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

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

AC – 20/04/2024
Item No. – 6.6 Sem. I (2b)

As Per NEP 2020

University of Mumbai



Syllabus for Basket of OE	
Board of Studies in Information Technology	
UG First Year Programme	
Semester	**I**
Title of Paper	**Credits 2/ 4**
I. **IT_Google Workspace** (Open Elective) [OE]	**2**
From the Academic Year	**2024-2025**

Name of the Course: IT_Google Workspace

Sr.No.	Heading	Particulars
1	**Description the course : Including but Not limited to:**	Google Workspace is a collection of cloud-based productivity tools that are designed to help individuals and organizations to work and collaborate efficiently. This course will provide an introduction to applications such as Gmail, Google Drive, Google meet and Google Calendar Google Docs, Google Sheets, Google Slides, Google Forms, Google Classroom.
2	**Vertical :**	**Open Elective**
3	**Type :**	Practical
4	**Credits :**	2 credits
5	**Hours Allotted :**	60 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. Understand Google Workspace and its applications. CO 2. Gain proficiency in key features of Google workspace application. CO 3. Acquire proficiency in Google workspace to collaborate, manage tasks and communicate effectively. CO 4. Leverage possibilities of Google workspace tolls to enhance productivity and streamline workflow.	
8	**Course Outcomes (OC):** OC 1. Manage email communications with Gmail. OC 2. Schedule and organize meetings and events using Google Calendar. Arrange and attend video meetings with Google Meet, Communicate with others using Google Chat. OC 3. Save , manage, and share files with Google Drive. OC 4. Generate and collaborate documents, spreadsheets and presentations. OC 5. Design Google Forms and collect data for surveys . Generate reports based on the collected data and integrate it with other Google Workspace applications. OC 6. Use Google Classroom to digitally organize, distribute, and gather assignments, course materials, and feedback. OC 7. Navigate confidently and make use of the numerous functionalities of Google Maps. OC 8. Able to design, develop, and maintain informative and visually appealing websites using Google Sites.	
9	**Modules:-** **Module 1:**	

1. **Google Workspace & Mastering email communication with Gmail**: Overview of Google Workspace, Setting up a Google account and accessing Google Workspace, Set Profile information and Photo, Send and Receive emails, Organize emails using labels, filters, and stars for easy retrieval and management, Utilize Gmail's advanced features like scheduling emails, snoozing emails, and setting reminders.
   a. Create a Gmail account. Write a brief email to your friends inviting them to a meeting to discuss a possible industrial visit. Attach a document file with the many options for places to visit.
2. **Google Calendar , Meet and Chat** : Create a new calendar, Create an event in Google Calendar, Set remainders and alarms , Share a Calendar with Other People ,Integrate with Gmail and other apps. Scheduling and managing Google Meet events, Features in Google Meet like screen sharing, chat, annotations and recording, Creating public and private Google Chat rooms ,Inviting and managing participants in Google Chat rooms, Utilizing Chat room features like sharing files, links, and multimedia, pinning messages, and polls.
   a. Create a new event in Google Calendar for an event happening on a specific date and time. Set a reminder to alert you one day prior to the event. Share your Google Calendar with a specific email address and grant them view-only access.
   b. Set up a meeting with your project partners, choose the suggested security configurations, and send a meeting invite to the participants via email. Begin the meeting by letting everyone into the meeting room. To demonstrate to them the project's progress, share your screen. Use chats to send brief messages and share relevant documents.
3. **Google Drive** :Managing files and folders in Google Drive, Sharing files and folders with collaborators and setting access permissions.
   a. Create a project folder in Google drive. Add a PowerPoint presentation detailing project milestones and a Word document with project guidelines to the folder. Share the folder and allow the project team members to edit it.
4. **Google Docs**: Document creation with Google Docs, Apply Basic Formatting to Text , Inserting Images, Creating tables, Format a document with styles, Using Find and Replace, Using Regular Expressions for Advanced Searching, Sharing and Collaborating on files.
   a. Create a one page document which best describes you. Add the document's heading and page numbers. Make a list of your hobbies using bullet points. Employ formats and typefaces to give the document an elegant look. To highlight your skills, use hyperlinks to other documents in the folder. Include a picture of yourself on the page as well. Add a table with your educational background in it. Write about your positive college experiences by voice typing. After that, translate the document's content into a different language of your choice.
5. **Google Sheets** :Insert, delete and manage sheets , Insert a Function, Format Spreadsheets, Cells, and Ranges, Apply Number Formatting

	and Conditional Formatting, Insert and View Notes, Choose Spreadsheet Settings, Merge Cells, Wrap and Rotate Cell Contents, Inserting Objects in Google Sheets, Sort and Filter Data, Apply Data Validation to Your Sheets, Protect Ranges in a Sheet, Protect a Sheet, Create and Manage Macros. a. Create a Personal budget sheet, list all your expenses and incomes of the month in the sheet. Use sum function to total the income and expenses. Use IF function to find if the budget is in deficit or not.
	Module 2:
	1. **Google Slides**: Add a Slide to a Presentation, Import Slides from an Existing Presentation, Understanding and Using Views, Work with Text Boxes, Add Audio and Video to a Slide, Insert Shapes and Word Art, Add a Transition and Animations, Edit a Slide Master, Organize the Slides in a Presentation a. Open a new Google Slides presentation titled “Project Presentation”. Add slides to provide a summary of your project. Use themes and transitions to make the slide experience better. 2. **Google Forms**: Create a Form, Choose Settings for a Form, Add Questions to a Form, Add Images to a Question, Add a Video to a Question, Import Questions from an Existing Form, Create a Form with Multiple Sections, Control Progression Based on Answers, Add Collaborators to a Form, Preview and Test a Form, Send a Form to Its Respondents, View the Responses to a Form, Analyse form responses and generate reports. a. Create a Google Form to accept participation entries for the various events your department is organizing on the annual day. Mention the details of event in the form description. Include a dropdown menu to select the events they wish to participate in. Insert relevant multimedia to make the Google Form attractive. b. Create an online evaluation quiz using Google Form. Include a variety of question formats, such as ones with pictures, videos, etc. Assign points to the questions. Share the link with your friends and check out the the summary of the responses. 3. **Google Classroom**: Create and set up a Google Classroom, Add Students and Co-Teachers, Using Google Classroom to share resources, Create assignment, Set due dates and points, Use rubrics for grading, Integrate quizzes created using Google Form with Google Classroom. a. Create a Google Classroom for a certain subject that includes a range of topics, resources, and activities. Include resources for each topic, such as Word docs, PowerPoints, and YouTube links. Include elements that encourage participation and interaction, such as assignments and discussions. 4. **Google Maps:** Search on Maps, Different Map Views (Satellite, Terrain, Street View), Customizing Maps, Get to your destination, Sharing Maps with Others. a. Use google maps to explore local landmarks in your area. Find directions from your current location to a nearby restaurant. Use Maps to check the places you have visited on a particular day.

	5. **Google Sites**: Creating and building simple websites using Google Sites, Adding content, images, and widgets to websites. a. Assume you runs a small business. Create a visually appealing website which includes the following pages: Home page , About the business, Products page, Announcement of discounts.	
10	**Text Books and Online Resources** 1. **Hart-Davis, G. (2021). Teach Yourself Visually Google Workspace. Visual.** 2. **https://support.google.com/a/users#topic=9247638** 3. **https://support.google.com/edu/classroom#topic=10298088** 4. **https://support.google.com/maps/?hl=en#topic=9729258**	
11	**Reference Books** **1. Team, Z. (2017). The Ultimate Guide to G-Suite. Lean Pub G-Suite.** **2. Iyer, b. (2022). Google workspace user guide: a practical guide to using google apps efficiently while integrating them with your data.**	
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)	
14	**Format of Question Paper: Duration 2 hours. Certified copy of Journal is compulsory to appear for the practical examination** Practical Slip: Q1. From Module 1 13 marks Q2. From Module 2 12marks Q3. Journal and Viva 05 marks	

Sign of Chairperson
Dr. Mrs. R. Srivaramangai
Ad-hoc BoS (IT)

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

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

AC – 20/04/2024
Item No. – 6.6 Sem. I (7a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Board of Studies in Statistics	
UG First Year Programme	
Semester - I	
Title of Paper	**Credits 2**
I) Introduction to Basic Statistics-I	**2 credit**
II)	
III)	
From the Academic Year	**2024-25**

Semister-I
Open Electives-I
Name of the course: Introduction to Basic Statistics-I

Sr. No.	Heading	Particulars
1	**Description the course :** **Including but Not limited to :**	Introduction: Introduction to Basic statistics-I course is focuses on basic statistics such as collection of data and how to measure variables on different scale. Student will equip with to identify the scale of measurement and analyze elementary statistical analysis through graphical presentation. Also student will learn to identify nature of the data through statistical methods. This course mainly emphasizes the method of collecting data, summarizing and presenting data, and drawing inferences from the data. This course will be useful for science, humanity and commerce faculty. This course will be offered other than science faculty students which will be very useful to gain knowledge about basic statistics in their field. This course will be applicable to various field to analyze their basic data structure. This course is focuses practical as well as theoretical aspects of basic statistics along with subjects from psychology, Economics, sociology, commerce, Computers , Mathematics , IT etc. There is growing demand for highly skilled statisticians in the 21st century in many fields including government, banking sector, health sciences, veterinary sciences, agricultural sciences, business, and social sciences etc
2	**Vertical :**	Open Elective
3	**Type :**	Theory
4	**Credit**:	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)

5	**Hours Allotted :**	30 Hours
6	**Marks Allotted**:	50 Marks
7	**Course Objectives**: Students will be able to, 1. Understand the meaning of Statistics and scope of Statistics. 2. Understand techniques of data collection and its presentation. 3. Compute various measures of central tendencies to know the entire data by a centralized single value. 4. Understand spread and variation of data using various techniques of measure of dispersion. 5. Understand the behavior of data using skewness and kurtosis and study the nature of probability curve.	
8	**Course Outcomes**: **: on successful completion of the course Students Should be able to,** 1. Calculate arithmetic mean and its applicability 2. Differentiate between qualitative and quantitative data through scale of measurement. 3. Construct graphs and diagrams from data and interpret the result. 4. Compute Skewness and Kurtosis of the data to describe nature of data distribution.	

9	**Modules**:-	**Lectures**
	Module 1: Classification, Tabulation and Presentation of data.	
	• Definition and scope of Statistics • Types of data: Qualitative and Quantitative data, Geographical data, Time series data and Crosssection data • Measurement of scales: Nominal, Ordinal, Interval and Ratio. • Primary data and Secondary data • Classification and Tabulation (One way and Two way). • Frequency distributions: Uni-variate and Bi-variate • Diagrammatic representation of data	15

Simple bar diagram, Multiple bar diagram, Subdivided bar diagram and Pie-chart • Graphical representation of data Histogram, Frequency Polygon, Frequency Curve, Cumulative frequency curve (Less than and more than type).	
Module 2: Measures of central tendency and Measures of Dispersion	**15**
Measures of central tendancy • Concept and Requirements of good measures of central tendency. • Arithmetic mean (Simple, weighted mean, combined mean)for grouped and un-grouped data, Merits, demerits and its applicability • Positional averages: Median, Mode, and Quartiles (for grouped and un-grouped data) Merits, demerits and its applicability • Graphical representation of mode, median and Quartiles. • Empirical relation between mean, median and mode (Only statement) **Measures of Dispersion** • Concept and requirements of good measures of dispersion. • Absolute and Relative measures of dispersion: Range, Quartile Deviation , Mean absolute deviation, Variance • and Standard deviation (for grouped and un-grouped data) Merits, demerits and its applicability • Raw moments and central moments , relation between them upto order four (only statement). • Measures of Skewness and Kurtosis: Karl Pearson's measure of Skewness , • Measures of skewness and kurtosis based on moments.(Only • formulae) and their interpretation	

Reference Books

- David S. : Elementary Probability, Cambridge University Press.
- Hoel P.G. : Introduction to Mathematical Statistics, Asia Publishing House.
- Hogg R.V. and Tannis E.P. : Probability and Statistical Inference.McMillan Publishing Co. Inc.
- Pitan Jim : Probability, Narosa Publishing House.
- Goon A.M., Gupta M.K., Dasgupta B. : Fundamentals of Statistics, Volume II :The World Press Private Limited, Calcutta.
- Mukhopadhyay P. An Introduction to the Theory of Probability, World Scientific Publishing Company, 2011.
- Grewal P. S, Methods of Statistical Analysis, Sterling Publishers, 1990
- S.C. Gupta and V.K. Kapoor, Fundamentals of Mathematical Statistics, Sultan Chand and Sons

Format of Question Paper:

Internal Continuous Assessment: (20 marks)

Assignment/viva Quizzes, Class Tests, presentation, project, assignment etc	**Class Test**	**Total**
05	15	20

Semester End Examination: (30 marks)

Semester End Examination will be of 30 marks of 01 hour duration covering entire syllabus of the semester. All questions are Compulsory.

Theory Question Paper Pattern:

Q 1	Attempt any one question out of two questions (Module I and II)	Max. marks: 10
Q 2	Attempt any two questions out of three questions (Module I)	Max. marks: 10
Q 3	Attempt any two questions out of three questions (Module II)	Max. marks: 10

Sign of the BOS Chairman
Dr. Santosh Gite
Board of Studies in Statistics

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

AC – 20/04/2024
Item No. – 6.6 Sem. I (8a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Board of Studies in Biotechnology	
UG First Year Programme	
Semester – I	
Title of Paper	**Credits 2/ 4**
I) OE: Nutrition, Life style diseases and their management	**2**
II)	**2**
From the Academic Year (2023-24 Progressively)	

Name of the Course: Nutrition, Life style diseases and their management

Sr. No.	Heading	Particulars
1	**Description the course :** **Including but Not limited to :**	This syllabus offers a comprehensive understanding of nutrition's role in preventing and managing lifestyle diseases, with a focus on theoretical foundations and practical applications. Students delve into the relevance and usefulness of nutrition knowledge, preparing them to address contemporary health challenges effectively.
2	**Vertical :**	Open Elective
3	**Type :**	Theory
4	**Credit**:	2 credits
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted**:	50 Marks
7	**Course Objectives**: **CO1:** To understand the principles of nutrition and their role in human health. **CO2 :** To learn about various nutrients,their sources, functions and requirements **CO3:** To understand Diet planning **CO4:** To understand the relationship between nutrition and various health conditions **CO5**: . To create awareness about arising from day to day activities which could be prevented/ managed by controlling life style.	
8	**Course Outcomes**: Learner will be able to **OC1**: Demonstrate knowledge of principles of nutrition science **OC2:** Develop dietary plans to meet nutritional needs of individual across the life span and in various health conditions. **OC3:** Understand the role of nutrition in the prevention and management of chronic diseases **OC4:** Understand concept of life style disorders and their impact on individual health and well being **OC5:** Learn strategies for prevention, early detection and management of lifestyle disorders through lifestyle modifications, including diet, exercise.	

9	**Modules**:- **Module 1: Nutrition and Dietetics**
	1. Food, Nutrition and Nutrients: Food groups based on functions and chemical nature. Nutritional disorders due to deficiency and excess **(3 lectures)** **2. Energy Value of Foods:** Methods of measurement of energy, value of nutrients, BMR (basal metabolic rate) - measurement and factors affecting BMR **(2 lectures)** **3. Adequate Diet:** food guide pyramid, balanced diet **(1 lecture)** **4. Cereals and Millets:** composition, nutritive value and nutrient losses during processing. **(2 lectures)** **5. Pulses, Legumes, Nuts and Oilseeds:** composition, nutritive value and nutrient losses during processing. Importance of germination and malting, anti-nutritional factors. Rancidity of oils and preservation. **(3 lectures)** **6. Vegetables and fruits:** Vegetables-composition and nutritive value, changes during cooking, storage. Fruits - composition, nutritive value, storage and ripening, enzymatic browning and its prevention. **(2 lectures)** **7. Animal Foods:** Composition, nutritive value of Milk, Eggs, Poultry, Meat and Fish **(2 lectures)**
	Module 2: Life style Diseases and their management
	1. Concept of lifestyle diseases- Importance of lifestyle factors in preventing disease development: diet, exercise, smoking, alcohol etc. **(2 lectures)** **2. Diabetes-** Type 1 and type 2, Characteristics, causes, diagnosis, prevention and management **(2 lectures)** **3. Cancer-**Characteristics, causes, diagnosis, prevention, management, basis of treatment modalities **(2 lectures)** **4. Arteriosclerosis and cardiovascular diseases-** Myocardial infarction, congestive heart failure, ischemic diseases - causes, diagnosis and management, hypertension **(3 lectures)** **5. Obesity-** causes, prevention and management.**(2 lecture)** **6. Respiratory diseases, Cirrhosis and stroke (2 lectures)** **7. Importance of diet and physical exercise in health**. **(2 lectures)**
10	**Text Books:** **1. Fundamentals of Food and Nutrition, 4th Edition, Mudambi R. and Rajgopal M.V. 2001, New Age International Ltd. Publication** **2. Principles of Nutrition and Dietetics, 2nd Edition, Swaminathan M.** **3. Food Science, 5th Edition, 2011, Srilakshmi B. New Age International Publishers, New Delhi**

11	**Reference Books:** **1. Textbook of Lifestyle Medicine- Labros Sidossis and Stefanos Kales, Wiley 2020, ISBN # 978.1.119.70442.3** **2. Food Facts and Principles, Shakuntala Manay N., 2005,New Age International Publishers, New Delhi** **3. Food Science, Norman Potter N. 2007, CBS Publishers and Distributors, New Delhi**

12	**Internal Continuous Assessment: 40%**	**External, Semester End Examination : 60% Individual Passing in Internal and External Examination**
13	**Continuous Evaluation through:** Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc. (at least 3)	
14	**Format of Question Paper:** Semester End Examination theory - 50 Marks	

Sign of the BOS Chairman
Dr. Varsha Kelkar-Mane
Ad-hoc BoS (Biotechnology)

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

AC – 20/04/2024
Item No. – 6.6 Sem. II (1b)

As Per NEP 2020

University of Mumbai



Syllabus for Basket of OE (Scheme I)	
Board of Studies in Mathematics	
UG First Year Programme	
Semester	**II**
Title of Paper	**Credits**
1. Logic and Data Interpretation – II	**2**
2.	**2**
3.	**2**
From the Academic Year	**2024-25**

Name of the Course: Logic and Data Interpretation – II (OE – II)

Sr. No.	Heading	Particulars
1	**Description the course:** **Including but Not limited to:**	This course deals with the Logical Thinking and Data Interpretation, that forms an essential component of Most of the Competitive and Entrance Examinations, such as Banking, Management Entrance, UPSC/MPSC, SET/NET, GMAT/GRE to quote a few. The nature of the problems and the difficulty level of the questions is quite high and a person appearing for such exams is expected to have a thorough understanding of the concepts, to have ability to think logically, and to be able to interpret the data, presented in different manner.
2	**Vertical :**	Open Elective
3	**Type :**	Theory
4	**Credits :**	2 credits (1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):** This course revises the basic mathematical concepts learned during school career. However, the problems asked in this course would be mostly advanced and indirect, and would demand broader and critical thinking. The course aims to enhance the reasoning power and logical thinking of the learners and nurture their intellect so as to make them competent across all competitive exams. CO1. To reinforce the basic math concepts and ideas within the learners CO2. To improve the cognitive power of the learners and make them think over and apply concepts/formulae to solve math problems of indirect nature, thereby developing their problem-solving capacity. CO3. To develop rational thinking of the learners CO4. To make learners competent across all competitive and entrance examinations	
8	**Course Outcomes (OC):** After completion of the course, the learners will be able to OC1: think logically about the problems related to clocks OC2: understand the nature of the calendars, find out the day related to any date in past/future OC3: develop logical thinking and realize the hidden pattern amongst the sequence of figures/diagrams	

	OC4: understand the representation of data in various forms OC5: understand the idea behind displaying data in a web-like diagram and comparing between two sets of data OC6: develop logical thinking to extract information from various graphs, charts, and tables representing data.
9	**Modules:-** **Module 1: Logic and Data Interpretation** 1. Clocks • The proportion of the speeds of different hands of a clock • The angles between the several positions of the hands • Coincidental and collinear but oppositely directed hour-hand and minute hand 2. Calendars • Review of the standard Gregorian calendar, with emphasis on Leap Year (1900 wasn't a leap year but 2000 was!) • Number of weeks in a year • Forward movement of the days with respect to dates (E.g. 1 Jan 2023 was Sunday, but 1 Jan 2024 is Monday) 3. Figures and Images • Sequence of diagrams, identifying the various patterns by which the figures/diagrams undergo changes and then predicting the next (or in between) figure/diagram. • Understanding images of various shapes/figures in mirror and water. Finding out the actual shape from its images in water/mirror. [The problems to be asked should be of varied levels of difficulty. A few ones based on directly applying a given formula may be asked at the beginning; however, the latter ones should demand critical analysis of the given information and a thoughtful selection of the method/formula to solve the same.]
	Module 2: Data Interpretation 1. Types of data: Qualitative and Quantitative 2. Tabulation: Reading and understanding data presented in a tabular form. 3. Interpreting data represented by Bar Graph, Pie Chart, Line graph, Scatter Diagram, Histogram etc. 4. Caselet Data Interpretation – Questions/Problems based on a long paragraph of information. 5. Web-based data interpretation – Display of data in a web-like diagram, Two sets of data and their comparison, Analysing the data 6. Missing Data Interpretation - Filling the missing values in the table from the additional information given or by applying logical thinking.
10	**Text Books** 1. Data Interpretation for CAT, Nishit k Sinha 2. Data Interpretation & Analysis, Aashish Arora

<table>
<tr><td></td><td colspan="2">3. Logical and Analytical Reasoning: Useful for All Competitive Exams, A. K. Gupta</td></tr>
<tr><td>11</td><td colspan="2">Reference Books

1. Arithmetic : Subjective And Objective For Competitive Examinations, R. S. Agarwal
2. A Complete Book on Data Interpretation & Analysis and A Complete Book for Seating Arrangement and Puzzles, Adda247 Publications
3. Reasoning for Competitive Examinations, Nishit K Sinha</td></tr>
<tr><td></td><td colspan="2"><u>Scheme of the Examination</u></td></tr>
<tr><td></td><td colspan="2">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.</td></tr>
<tr><td>12</td><td>Internal Continuous Assessment: 40%</td><td>Semester End Examination: 60%</td></tr>
<tr><td>13</td><td>Continuous Evaluation through:
Quizzes, Class Tests, presentations, projects, role play, creative writing, assignments etc.
(at least 3)
<table>
<tr><th>Sr. No.</th><th>Particulars</th><th>Marks</th></tr>
<tr><td>1</td><td>A class test of 10 marks is to be conducted during each semester in an Offline mode.</td><td>10</td></tr>
<tr><td>2</td><td>Project on any one topic related to the syllabus or a quiz (offline/online) on one of the modules.</td><td>05</td></tr>
<tr><td>3</td><td>Seminar/ group presentation on any one topic related to the syllabus.</td><td>05</td></tr>
</table>
Paper pattern of the Test (Offline Mode with One hour duration):
Q1: Definitions/Fill in the blanks/ True or False with</td><td></td></tr>
</table>

	Justification. (04 Marks: 4 x 1). Q2: Attempt any 2 from 3 descriptive questions. (06 marks: 2 × 3)	

14 **Format of Question Paper:**

The semester-end examination will be of 30 marks of one hour duration covering the entiresyllabus of the semester.

Note: Attempt any TWO questions out of THREE.			
Q.No.1	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5/OC6	15 Marks
Q.No.2	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5/OC6	15 Marks
Q.No.3	Module 1 and 2	Attempt any **THREE** out of **FOUR**. (Each question of 5 marks) (a) Question based on OC1/OC2 (b) Question based on OC3 (c) Question based on OC4 (d) Question based on OC5/OC6	15 Marks

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

AC – 20/04/2024
Item No. – 6.6 Sem. II (9c)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of Open Elective (OE)	
Board of Studies in Zoology	
UG First Year Programme	
Semester - II	
Title of Paper	**Credits 2/ 4**
I) OE3A: Nutrition, Health and Fitness	**2**
II)	
III)	
From the Academic Year	**2024-25**

OE2: Nutrition, Health and Fitness

9	**Module 1: Nutrition, Health and Fitness-I**	**15hr**
	1.1. Introduction to the basic concept of food, nutrition and nutrients. Classification of Food, Classification of Nutrients	**03hr**
	1.2 Carbohydrates: 1.2.1 Definition, sources, daily requirements, functions. 1.2.2 Effects of too high and too Low carbohydrates on health. 1.2.3 Digestion and absorption of carbohydrate.	**04hr**
	1.3 Lipids: 1.3.1 Definition, Fatty acids: types and sources 1.3.3 Daily requirements, functions.	**03hr**
	1.4 Proteins: 1.4.1 Definition, sources of proteins, daily requirements, functions. 1.4.2 Types of amino acids, functions. 1.4.3 Effect of too high and too low proteins in diet on health.	**05hr**
	Module 2: Nutrition, Health and Fitness-II	**15hr**
	2.1 Dietary Fiber: Classification, sources, composition, properties, and nutritional significance. **2.2 Minerals & Trace Elements:** bio- availability & requirements, sources, deficiency & excess (Calcium, Sodium, Potassium, Phosphorus, Iron, Fluoride, Zinc, Selenium, Iodine, Chromium) **2.3 Vitamins:** Types, requirements, sources, deficiency & excess. **2.4 Water:** Functions, daily requirements, Water balance.	**09hr**
	2.5 Social health problems: Smoking, Alcohol addiction, Drug addiction **2.6 Nutrition for special conditions:** Introduction to Nutrition for physical fitness and sport **2.7** Feeding problems in children.	**06hr**
	Suggested assignment topics: Study of relevant topics such as food rich in various nutrients, Body Mass Index Calculation, Holistic health, Community health and nutrition, Benefits of Yoga, etc.	

10.	**Text Books:** 1. Swaminathan M (2007): Essentials of Food and Nutrition (Vol. I & II), 2nd Ed. Bappco 2. Srilakshmi B (2017): Nutrition Science,6th Multicolour Ed. New Age International (P) Ltd. 3. Nutrient Requirements and Recommended Dietary Allowance for Indians, Indian Council of Medical Research: New Delhi.
11.	**Reference Books:** 1. Mann J and Truswell S (2017): Essentials of Human Nutrition, 5th Ed. Oxford University Press. 2. Robinson CH and Lawler M (1990): Normal and Therapeutic Nutrition. 17th Revised Ed. Macmillan USA. 3. Roday S (2012): Food Science and Nutrition, 2nd Ed. Oxford University Press

12	**Internal Continuous Assessment: 40% (20 marks)**	**External, Semester End Examination : 60% Individual Passing in Internal and External Examination** (30 marks)	
13	**Continuous Evaluation through:** Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc.(at least 3)	As per paper pattern 01.00 hour	
14	**Format of Question Paper:** for the final examination		
	Time 1.0 Hr		**Max. Marks 30**
	Q.1. Questions in the form of MCQ and answer in one sentence. (Overall equal weightage for both modules I & II) Q1a. Five questions in the form of MCQ (5 marks) Q1b. Five questions of answer in one line (5 marks)		**10**
	Q.2 Answer any one of the following (based on Module I) a. b.		**06**
	Q.3. Answer any one of the following (based on Module II) a. b.		**06**
	Q4. Write short note any two of the four from module I and II (equal weightage) a. b. c. d.		**08**

Sign of the BOS Coordinator **Dr. Vaishali Somani** **BOS in Zoology**	**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**