AC –24/11/2023
Item No. – 6.2 (N)

As Per NEP 2020

University of Mumbai

Title of the program

A- U.G. Certificate in Information Technology
B- U.G. Diploma in Information Technology
C- B.Sc. (Information Technology)
D- B.Sc. (Honours) in Information Technology
E- B.Sc. (Honours with Research) in Information Technology

Syllabus for Semester –

Sem I & II

Ref: GR dated 20th April, 2023 for Credit Structure of UG

(With effect from the academic year 2024-25 Progressively)

University of Mumbai

Syllabus for Approval

(As per NEP 2020)

Sr. No.	Heading	Particulars	
1	**Title of program** **O. _____A**	A	Title of the program U.G. Certificate in Information Technology
	O. _____B	B	U.G. Diploma in Information Technology
	O. _____C	C	B.Sc. (Information Technology)
	O. _____D	D	B.Sc. (Honours) in Information Technology
	O. _____E	E	B.Sc. (Honours with Research) in Information Technology
2	**Eligibility** **O. _____A**	A	10+2 (A learner must have completed HSC or equivalent with 45% of aggregate for open category and 40% of aggregate in case of reserved candidates in one attempt with Mathematics and/or Statistics as one of the subjects **(OR)** Passed Equivalent Academic Level 4.0 with CGPA equivalent to 45% for open category and 40% in case of reserved candidates with Mathematics and/or Statistics as one of the subjects
	O. _____B	B	Under Graduate Certificate in Information Technology Academic Level 4.5
	O. _____C	C	Under Graduate Diploma in Information Technology Academic Level 5.0
	O. _____D	D	Bachelors of Science in Information Technology with minimum CGPA of 7.5 Academic Level 5.5
	O. _____E	E	Bachelors of Science in Information Technology with minimum CGPA of 7.5 Academic Level 5.5
3	**Duration of program** **R. _____**	A	One Year
		B	Two Years
		C	Three years
		D	Four years

		E	Four years
4	**Intake Capacity** **R. _____**		
5	**Scheme of Examination** **R. _____**	NEP 40% Internal 60% External, Semester End Examination Individual Passing in Internal and External Examination	
6	**Standards of Passing** **R. _____**	40% in each component	
7	**Sem. I & II Credit Structure** **R: _____A** **R: _____B** **Sem. III & IV Credit Structure** **R: _____C** **R: _____D** **Sem. V & VI Credit Structure** **R: _____E** **R: _____F**	Attached herewith	
8	**Semesters**	A	Sem I & II
		B	Sem I, II, III& IV
		C	Sem I, II, III, IV, V & VI
		D	Sem I, II, III, IV, V, VI, VII & VIII
		E	Sem I, II, III, IV, V, VI, VII & VIII
9	**Program Academic Level**	A	4.5
		B	5.0
		C	5.5
		D	6.0
		E	6.0
10	**Pattern**	Semester	
11	**Status**	New	
12	**To be implemented from Academic Year Progressively**	From Academic Year: 2023-24	

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

Preamble

1) Introduction

Information technology (IT) continues to be a dynamic and rapidly evolving field with high demand for skilled professionals. The demand for IT workers is driven by various factors, and the landscape may have evolved over a period of time. NEP envisages the multidisciplinary approach thus making IT much more applicable in all fields of life. This facilitates multi-institutional mobility of the students within India as well as abroad thus making the students attain different proficiency levels right from certificate to B.Sc Honours with Research. This new syllabus under NEP will thus enables the students for higher education, research and career in the field of IT

2) Aims and Objectives

The aims and objectives of a Bachelor of Science (B.Sc) program in Information Technology (IT) generally revolve around providing students with a comprehensive understanding of the principles, technologies, and applications within the field of information technology. The entire program collectively aim to produce graduates who are well-rounded IT professionals, capable of contributing to the design, development, and management of information technology systems in various industries. The specific details of the curriculum may vary among institutions offering B.Sc in Information Technology programs.

3) Learning Outcomes

The B. Sc. (Information Technology) Programme shall prepare and enable the graduates to:

- ✓ Demonstrate proficiency in programming languages, Data structures, Design and implement software solutions with their technical competence
- ✓ Analyze user requirements and design effective IT systems or applications.
- ✓ Apply system analysis and design methodologies to address complex business challenges.
- ✓ Acquire the skills of Database Management, Networking and Security, Web Technologies
- ✓ Plan, execute, monitor, and control IT projects.
- ✓ Analyze and solve complex IT problems using critical thinking skills.
- ✓ Apply concepts of artificial intelligence, machine learning, cloud computing, and IoT
- ✓ Effectively communicate technical information both orally and in writing.

4) Any other point (if any)

PROGRAMME SPECIFIC OUTCOMES (PSO)

On completing the B. Sc.(Information Technology) at the University of Mumbai, the graduates shall be able to

- Technical Proficiency:
  - Demonstrate a comprehensive understanding of fundamental concepts, principles, and technologies in information technology.
  - Apply programming and software development skills to design and implement IT solutions.
- System Thinking and Analysis:
  - Apply system analysis and design methodologies to analyze and address

complex problems.
    - Design and develop IT systems that meet user requirements and organizational needs.
- Database Management:
    - Design, implement, and manage relational databases to store and retrieve information effectively.
    - Demonstrate proficiency in using database management systems and querying languages.
- Networking and Security:
    - Understand and implement computer networks, protocols, and security measures.
    - Evaluate and implement security solutions to protect information systems.
- Web Technologies:
    - Develop web applications using a variety of technologies and programming languages.
    - Design and create user interfaces that adhere to web design principles.
- Project Management:
    - Apply project management principles to plan, execute, and deliver IT projects.
    - Demonstrate the ability to work effectively within project teams.
- Emerging Technologies:
    - Stay informed about and adapt to emerging technologies in the IT field.
    - Apply concepts of artificial intelligence, machine learning, cloud computing, and IoT to solve real-world problems.
- Critical Thinking and Problem-Solving:
    - Analyze and solve complex IT problems using critical thinking skills.
    - Apply problem-solving strategies to troubleshoot and resolve technical issues.
- Communication Skills:
    - Effectively communicate technical information to diverse audiences, both orally and in writing.
    - Collaborate with team members and stakeholders to achieve common goals.
- Ethics and Professionalism:
    - Demonstrate ethical behavior and professionalism in all aspects of the IT profession.
    - Adhere to ethical standards and legal considerations related to information technology.

Credit Structure of the Program (Sem I)
Under Graduate Certificate in Information Technology (Credit Structure Sem I)

Semester	Major		Minor	OE	VSC, SEC (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Cum. Cr. / Sem.	Degree/ Cum. Cr
1	**Mandatory**	**Electives**							
	6		-	2+2	VSC:2, SEC:2	AEC:2, VEC:2, IKS:2	CC:2	22	UG Certificate 44
	Programming with C - 02 Database Management Systems - 02 Practical I - 02	-	-	**OE :** Stress Management 1 Entrepreneurship Management (OE)	**VSC:** Combinational and Sequential Design02 **SEC** – 02 Office Tools for Data Management OR Fundamentals of Telecommunication Systems	**AEC:** Introduction to Communication Skills I (2) **VEC:** Indian Constitution (2) OR Law related to Intellectual Property Rights (2) **IKS:** Indian Knowledge System Series (Generic) -I	CC / Sports / NSS / Garba / Yoga		

SEMESTER I

Syllabus
B.Sc. (Information Technology)
(Sem.- I)

Major Courses

Name of the Course: Programming with C

Sr.No.	Heading	Particulars
1	**Description the course : Including but Not limited to:**	This course allows the students to understand the fundamental concepts of programming which will allow them to program applications in C.
2	**Vertical :**	Major
3	**Type :**	Theory
4	**Credits :**	2 credits (1 credit = 15 Hours for Theory in a semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. To understand the concepts of computer programming. CO 2. To understand syntax and semantics of the C language CO 3. To understand loops and decision making in programming. CO 4. To understand the use of arrays, structures, union and pointers. CO 5. To understand functions for modular code and handle errors.	
8	**Course Outcomes (OC):** OC 1. Students can build flowcharts, pseudocode for C programs. OC 2. Students can use C language syntax and semantics in their programs. OC 3. Students can implement loops and decision making. OC 4. Students can use different types of data structures in their programs. OC 5. Students can write well-structured, readable, and maintainable C code and debug programs if there are any errors.	
9	**Modules:-** **Module 1:**	
	1. Introduction: Algorithms, History of C, Structure of C Program. Program Characteristics, Compiler, Linker and preprocessor, pseudo code statements and flowchart symbols, Desirable program characteristics. Program structure. Compilation and Execution of a Program, C Character Set, identifiers and keywords, data types and sizes, constants and its types, variables, Character and character strings, typedef, typecasting **2. Type of operators**: Arithmetic operators, relational and logical operators, Increment and Decrement operators, assignment operators, the conditional operator, Assignment operators and expression, Precedence and order of Evaluation Block Structure, Initialization, C Preprocessor	**15 Hrs**
	Module 2:	

	1. Control Flow: Statements and Blocks, If-Else, Else-If, Switch, Loops- While and For Loops Do-while, Break and Continue, Goto and Labels **2.** Basics of functions. User defined and Library functions **3.** Pointer and Addresses, Pointer and Function Arguments, Pointer and Arrays. **4.** User-defined data types- structure and union	**15 Hrs**
10	**Books and References:** 1. C Programming Language, Brian W. Kernighan, Dennis M. Ritchie , 2017 2. Let Us C, Yashvant Kanetkar, BPB Publications,2008. 3. Mastering in C, K. R. Venugopal and Sudeep R. Prasad, Tata McGraw-Hill Publications. 4. A Computer Science –Structure Programming Approaches using C, Behrouz Forouzan, Cengage Learning. 5.. Schaum's outlines Programming with C, Byron S. Gottfried, Tata McGraw- Hill Publications. 6. Basics of Computer Science, by Behrouz Forouzan, Cengage Learning. 7. Programming Techniques through C, by M. G. Venkateshmurthy, Pearson 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 Total: 20 marks	**Format of Question Paper: External Examination (30 Marks)– 1 hr duration**
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)	

Name of the Course: Database Management System

Sr.No.	Heading	Particulars	
1	**Description the course : Including but Not limited to:**	The objective of the course is to present an introduction to fundamentals of database management systems, with an emphasis on how to organize, maintain and retrieve - efficiently, and effectively -information from a DBMS.	
2	**Vertical :**	Major	
3	**Type :**	Theory	
4	**Credits:**	2 credits (1 credit = 15 Hours for Theory)	
5	**Hours Allotted :**	30 Hours	
6	**Marks Allotted:**	50 Marks	
7	**Course Objectives(CO):** CO 1. To make students aware fundamentals of database system. CO 2. To give idea how ERD components helpful in database design and implementation. CO 3. To experience the students working with database using MySQL. CO 4. To familiarize the student with normalization, database protection and different DDL, DML, DQL, DCL Statements CO 5. To make students aware about importance of protecting data from unauthorized users.		
8	**Course Outcomes (OC):** OC 1. Define and describe the fundamental elements of relational database management system. OC 2. To relate the basic concepts of relational data model, entity-relationship model, relational database OC 3. Design ER-models to represent simple database application scenarios. OC 4. Understand the normalization and its role in the database design process OC 5. Transform the ER-model to relational tables, populate relational database and formulate SQL OC 6. Understand basic database storage structures and access techniques: file and page organizations, indexing methods and hashing.		
9	**Modules:-** **Module 1:**		
	1. Introduction to Databases and transactions What is database system, purpose of database system, view of data, relational databases, database architecture, transaction management **2. Data Models** The importance of data models, Basic building blocks, Business rules, The evolution of data models, Degrees of data abstraction **3. Database Design, ER-Diagram** Database design and ER Model: overview, ER-Model, Constraints, ER-Diagrams, ERD Issues, Codd's rules, Relational Schemas **4. Relational database model** Logical view of data, keys, integrity rules		**15 Hrs**

	Module 2:	
	1. Database Design theory and normalization: Basics of functional dependencies and normalization for relational databases. Relational database design and further dependencies. **2. SQL, Indexing:** Introduction to SQL, Complex queries, triggers, views, joining database tables and schema modification. Query Processing and optimization. File structure, hashing and indexing **3. Transaction management and concurrency control and recovery:** Introduction to transaction processing concepts and theory. Concurrency control technique. Database recovery technique	. **15 Hrs**
10	**Text Books** 1. "Fundamentals of Database System", Elmasri Ramez, Navathe Shamkant, Pearson Education, Seventh edition, 2017 2. Database Management Systems", Raghu Ramakrishnan and Johannes Gehrke, 3rd Edition, 2014 3. Database Systems: Design implementation and management by Carlos Coronel, Steven Morris, Peter Rob	
11	**Reference Books** 1. "Database System Concepts", Abraham Silberschatz, Henry F. Korth, S. Sudarshan, McGraw Hill, 2017 2. "MySQL: The Complete Reference", Vikram Vaswani , McGraw Hill, 2017 3. "Learn SQL with MySQL: Retrieve and Manipulate Data Using SQL Commands with Ease", Ashwin Pajankar, BPB Publications, 2020	
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 Total: 20 marks	**Format of Question Paper: External Examination (30 Marks)– 1 hr duration**
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)	

Name of the Course: Major Practical 1

Sr.No.	Heading	Particulars
1	**Description the course : Including but Not limited to:**	Programming with C -practical This course is stepping stone to learn other languages. This course provides students hands on experiences of coding exercises and projects. . Database Management System's practical approach is useful to gain the knowledge for software backend development. It benefits to user by providing data definition, data access, reduced data redundancy, data integrity, data sharing, data organizing, data consistency, data accuracy, and security
2	**Vertical :**	Major
3	**Type :**	Practical
4	**Credits :**	2 credits (60 Hours of Practical work in a semester)
5	**Hours Allotted :**	30 Hours (C Programming Practical) + 30 Hours(DBMS - Practical)
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. To provide exposure in developing algorithm, flowchart and to write efficient code. CO 2. To understand loops and decision making in programming. CO 3. To understand the arrays, structures, union. CO 4. To understand the use of function and pointers. CO 5. To Identify entities and its relationship with relational model structure. CO 6. To understand relational database using SQL and constraints implementation using create table queries. CO 7. To Understand DML operations and backing of database CO 8. To understand how to retrieve data from database and learn how to retrieve single value after performing calculations on group of values CO 9. To understand built-in functions to perform operations on data CO 10. To understand how to fetch data from two or more tables, which is joined to appear as single set of data CO 11. To understand nested and larger query as advanced fetching of data to understand concept of virtual table. CO 12. To understand how to control user access in a database.	

8	**Course Outcomes (OC):** OC 1. Students can demonstrate the concepts of datatypes, variables and operators in C. OC 2. Students can implement the concept of control statements and looping in C program. OC 3. Students can demonstrate the use of arrays, strings and structures in C OC 4. Students can implement modular C program using functions and pointers. OC 5. Students can demonstrate the use of arrays, strings and structures in C. OC 6. Students able to perform various operations such as insert, update delete and retrieve data from database using SQL queries. OC 7. Students able to perform alteration in tables and can restore and take backup of the database. OC 8. Students able to perform operations using simple SQL Queries to fetch data and learns various aggregate functions to get single value. OC 9. Students able to perform SQL Queries using JOIN keyword for joining two or more tables. OC 10. Students able to perform nested queries using in, exists operators. OC 11. Students able to create new table by joining one or more tables and learn how to hide attribute from end user. OC 12. Students able to restrict the user from accessing data in database. OC 13. Students should be able to create, manipulate the database management system to evaluate the business information problem.

	9	**Module 1:- Programming with C** **1. Practical 1**:- a. To calculate simple interest taking principal, rate of interest and number of years as input from user. Write algorithm & draw flowchart for the same. b. Write a program to find greatest of three numbers using conditional operator. Write algorithm & draw flowchart for the same. c. Write a program to check if the year entered is leap year or not. Write algorithm & draw flowchart for the same. **2. Practical 2:-** a. Write a program to calculate roots of a quadratic equation. b. Write a menu driven program using switch case to perform add / subtract / multiply / divide based on the users choice. c. Write a program to print the pattern of asterisks. **3. Practical 3** a. Write a program using while loop to reverse the digits of a number. b. Write a program to calculate the factorial of a given number. c. Write a program to print the Fibonacci series. **4. Practical 4** a. Write a program to print area of square using function. b. Write a program using recursive function. c. Write a program to square root, abs() value using function. d. Write a program using goto statement . **5. Practical 5** a. Write a program to print rollno and names of 10 students using array. b. Write a program to sort the elements of array in ascending or descending order **6. Practical 6** a. Write a program to extract the portion of a character string and print the extracted part. b. Write a program to find the given string is palindrome or not. c. Write a program to using strlen(), strcmp() function . **7. Practical 7** Write a program to swap two numbers using a function. Pass the values to be swapped to this function using call-by-value method and call-by-reference method. **8. Practical 8** a. Write a program to read a matrix of size m*n. b. Write a program to multiply two matrices using a function. **9. Practical 9** Write a program to print the structure using Title Author Subject Book ID Print the details of two students. **10. Practical 10** Create a mini project on “Bank management system”. The program should be menu driven.	**30 Hrs**

		Module 2 1. Conceptual Designing using ER Diagrams (Identifying entities, attributes, keys and relationships between entities, cardinalities, generalization, specialization etc.) 2. Perform the following: • Viewing all databases • Creating a Database • Viewing all Tables in a Database • Creating Tables (With and Without Constraints) • Inserting/Updating/Deleting Records in a Table 3. Perform the following: • Altering a Table • Dropping/Truncating/Renaming Tables • Backing up / Restoring a Database 4. Perform the following: • Simple Queries • Simple Queries with Aggregate functions 5. Queries involving • Date Functions • String Functions • Math Functions 6. Join Queries • Inner Join • Outer Join 7. Subqueries • With IN clause • With EXISTS clause 8. Converting ER Model to Relational Model and apply Normalization on database. (Represent entities and relationships in Tabular form, Represent attributes as columns, identifying keys and normalization up to 3rd Normal Form). 9. Views • Creating Views (with and without check option) • Dropping views • Selecting from a view 10. DCL statements • Granting and revoking permissions • Saving (Commit) and Undoing (rollback)	**30 Hrs**
10	**Text Books:** 1.“Fundamentals of Database System”, Elmasri Ramez, Navathe Shamkant, Pearson Education, Seventh edition, 2017 . 2.Database Management Systems”, Raghu Ramakrishnan and Johannes Gehrke, 3rd Edition, 2014		
11	**Reference Books:** 1. MASTERING C, K. R. Venugopal and Sudeep R. Prasad, Tata McGraw-Hill Publications. 2. “A Computer Science –Structure Programming Approaches using C”, Behrouz		

	Forouzan, Cengage Learning. 3. Schaum's outlines "Programming with C", Byron S. Gottfried, Tata McGraw-Hill Publications. 4. "Basics of Computer Science", Behrouz Forouzan , Cengage Learning. 5. "Programming Techniques through C", M. G. Venkateshmurthy, Pearson Publication. 6. "Programming in ANSI C", E. Balaguruswamy, Tata McGraw-Hill Education. 7. "MySQL: The Complete Reference", Vikram Vaswani , McGraw Hill, 2017. 8. "Learn SQL with MySQL: Retrieve and Manipulate Data Using SQL Commands with Ease", Ashwin Pajankar, BPB Publications, 2020.	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks.	30 marks practical exam of 2 hours duration
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	

Vocational Skill Course (VSC)

Name of the course: Combinational and Sequential Design

Sr.No.	Heading	Particulars
1	**Description the course : Including but Not limited to:**	Combinational and Sequential Design is a course that focuses on digital electronics and the design of circuits that combine multiple digital components. The course covers the theoretical and practical aspects of both combinational and sequential circuit design, as well as their applications. Digital circuits are used in many electronic devices, including computers, smartphones, and communication systems. The design of these circuits is critical to the performance and functionality of these devices. Understanding the basics of combinational and sequential design is essential for anyone interested in pursuing a career in the field of digital electronics. The course will cover the various techniques and tools used in digital circuit design, including Boolean algebra and K-map simplification. The course is highly relevant in today's technological landscape, as all modern electronics devices are based on digital circuits. The skills learned in the course are highly useful in various fields, such as computer and electronics engineering, telecommunications, and robotics. The application of combinational and sequential design is quite broad, and the skills acquired from the course can be applied in various areas. Students will be able to design digital circuits, troubleshoot and repair digital circuits, and optimize circuit performance. The course is highly interesting and engaging, providing students with the opportunity to explore and analyze complex digital circuitry. It is also connected to other courses such as Digital Logic Design, Computer Organization, and Microcontrollers. The demand for professionals with digital circuit design skills is high in various industries such as electronics, semiconductors, telecommunications, and computing. There is an increasing demand for professionals with these skills,

		and job prospects are promising for those with a solid background in digital circuit design. In summary, Combinational and Sequential Design is a course that offers students a comprehensive understanding of digital circuits' design principles and techniques. The knowledge and skills gained from this course are highly useful and applicable in various industries, with promising career prospects.
2	**Vertical :**	Vocational Skill Course(VSC)
3	**Type :**	Practical
4	**Credits :**	2 credits (60 hours in a semester)
5	**Hours Allotted :**	60 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. To provide students with a comprehensive understanding of combinational and sequential circuit design principles and techniques. CO 2. To enable students to apply Boolean algebra, K-map simplification, and other design techniques to create optimized digital circuits. CO 3. To equip students with the necessary tools and skills to implement arithmetic circuits, data path circuits, and memory circuits. CO 4. To enable students to analyze and troubleshoot digital circuits to ensure optimal performance. CO 5. To provide students with hands-on practical experience in designing and implementing digital circuits using simulation software and real-world hardware.	
8	**Course Outcomes (OC):** OC 1. Students can explain the differences between combinational and sequential circuits, and identify their different applications. OC 2. Students can define the concept of Boolean algebra and its importance in digital circuit design. OC 3. Students can explain and apply the principles of K-map simplification and other design techniques. OC 4. Students can design and construct combinational circuits using Boolean algebra and K-maps. OC 5. Students can design and implement arithmetic circuits such as adders, subtractors, and multipliers. OC 6. Students can design and implement data path circuits such as registers, multiplexers, and decoders. OC 7. Students can implement digital circuits using breadboards, logic probes, and oscilloscopes. OC 8. Students can troubleshoot and verify the correctness of digital circuits using real-world hardware and measure their performance using various metrics.	
9	**Modules:-** **Module 1:**	

		1. Study of Logic gates and their ICs and universal gates: a. Study of AND, OR, NOT, XOR, XNOR, NAND and NOR gates b. Study of IC 7400, 7402, 7404, 7408, 7432, 7486, 74266 c. Implement AND, OR, NOT, XOR, XNOR using NAND gates. d. Implement AND, OR, NOT, XOR, XNOR using NOR gates. **2. Implement the given Boolean expressions using minimum number of gates.** a. Verifying De Morgan's laws. b. Implement other given expressions using minimum number of gates. c. Implement other given expressions using minimum number of ICs. **3. Implement combinational circuits.** a. Design and implement combinational circuit based on the problem given and minimizing using K-maps. (Various Equations, SOP, POS forms can be given) **4. Implement code converters.** a. Design and implement Binary – to – Gray code converter. b. Design and implement Gray – to – Binary code converter. c. Design and implement Binary – to – BCD code converter. d. Design and implement Binary – to – XS-3 code converter. **5. Implement Adder and Subtractor Arithmetic circuits.** a. Design and implement Half adder and Full adder. b. Design and implement BCD adder. c. Design and implement XS – 3 adder. d. Design and implement binary subtractor. e. Design and implement BCD subtractor. b. Design and implement XS – 3 subtractor.	**30 Hrs**
	Module 2:		
		6. Implement Arithmetic circuits. a. Design and implement a 2-bit by 2-bitultiplier. b. Design and implement a 2-bit comparator. **7. Implement Encode and Decoder and Multiplexer and Demultiplexers.** a. Design and implement 8:3 encoder. b. Design and implement 3:8 decoder. c. Design and implement 4:1 multiplexer. Study of IC 74153, 74157 d. Design and implement 1:4 demultiplexer. Study of IC 74139 e. Implement the given expression using IC 74151 8:1 multiplexer. f. Implement the given expression using IC 74138 3:8 decoder. **8. Study of flip-flops and counters.** a. Study of flip-flops and counters. b. Study of IC 7473. c. Study of IC 7474. d. Study of IC 7476. e. Conversion of Flip-flops.	**30 Hrs**

	f. Design of 3-bit synchronous counter using 7473 and required gates. g. Design of 3-bit ripple counter using IC 7473. **9. Study of counter ICs and designing Mod-N counters.** a. Study of IC 7490, 7492, 7493 and designing mod-n counters using these. b. Designing mod-n counters using IC 7473 and 7400 (NAND gates) **10. Design of shift registers and shift register counters.** a. Design serial – in serial – out, serial – in parallel – out, parallel – in serial – out, parallel – in parallel – out and bidirectional shift registers using IC 7474. b. Study of ID 7495. c. Implementation of digits using seven segment displays.	
10	**Text Books** 1. Digital Electronics and Logic Design, N. G. Palan, Technova	
11	**Reference Books** 1. Digital Principles and Applications, Malvino and Leach, Tata McGrawHill 2. Modern Digital Electronics, R. P. Jain, Tata McGrawHill 3. Digital Design, M. Morris R. Mano, Michael D. Ciletti, Pearson Education, 2012	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks.	30 marks practical exam of 2 hours duration
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	

Skill Enhancement Course (SEC)

Name of the Course: Office Tools for Data Management

Sr.No.	Heading	Particulars
1	**Description the course:**	• **Introduction:** The MS Access course offers a comprehensive understanding of Microsoft's relational database management system, making it a valuable skill in today's data-driven environment. This course is designed to empower individuals with the tools needed to efficiently organize, manage, and analyse data. • **Relevance and Usefulness:** It provides practical insights into leveraging a relational database system for enhanced efficiency and organization. The MS Access course is useful for individuals seeking to enhance their data management skills. • **Applications:** With applications in various sectors, from business to research and project management, MS Access is versatile. It facilitates the creation of databases for tasks ranging from contact management to complex systems for inventory and financial analysis. • **Interest and Connection with Other Courses:** Its practical applications and user-friendly interface make it attractive to individuals looking to boost their data management skills. The MS Access course establishes a practical link with other data-related courses, offering foundational knowledge in database management. It complements courses in data analysis, business intelligence, and information systems. • **Demand in the Industry:** As businesses increasingly rely on data for decision-making, there is a growing demand for professionals skilled in database management. Proficiency in MS Access is particularly sought after in roles involving data organization, analysis, and reporting. • **Job Prospects:** Professionals completing the MS Access course are well-positioned for roles requiring efficient data management and analysis. Job prospects include positions in database administration, data analysis, and business intelligence, where MS Access proficiency is a valuable asset.
2	**Vertical :**	Skill Enhancement Course(SEC)
3	**Type :**	Practical
4	**Credits :**	2 credits
5	**Hours Allotted :**	60 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):**	

	CO 1. Participants will grasp essential database concepts, including tables, relationships, and normalization principles. CO 2. Participants will design and construct well-organized databases in MS Access, showcasing proficiency in table design and data validation. CO 3. Participants will master the creation of complex queries in MS Access, enabling them to extract specific information efficiently. CO 4. Participants will develop expertise in crafting user-friendly forms and interfaces in MS Access, optimizing data entry processes. CO 5. Participants will generate comprehensive reports in MS Access, demonstrating skills in grouping, sorting, and presenting data for meaningful analysis.	
8	**Course Outcomes (OC):** OC 1. Participants can explain normalization importance, identify table relationships, and justify database design choices. OC 2. Participants create well-structured MS Access databases with proper relationships, data types, and normalization. OC 3. Participants execute advanced queries in MS Access, retrieving specific information based on diverse criteria. OC 4. Participants design intuitive MS Access forms, incorporating controls for an efficient and user-friendly data entry experience. OC 5. Participants produce insightful MS Access reports, organizing and presenting data effectively for analysis.	
9	**Modules:- All Practicals are based on MS Access** **Module 1:**	
	Practical 1: A. Getting familiar with MS Access Ribbon options. B. With the help of access wizard Create Database. Add 2 Tables. In each table add 5 columns of different data types. Add 10-10 entries in each table. Add necessary integrity constraints. C. Use the Table Wizard to create a table. Add and delete fields in an existing table. Establish an input mask and validation rule for fields within a table. Switch between the Design and Datasheet views of a table. **Practical 2:** A. Create and use an Input Mask to enter the data in sample table. B. Adding records in table by using Datasheet View, using a Form and using SQL. C. Create the Employee Database with necessary table and data and then implement the following transitions: • Delete the record for Kelly Marder. • Change Pamela Milgrom's salary to $59,500. • Use the Replace command to change all occurrences of "Manager" to "Supervisor". **Practical 3:** A. Create the Bookstore database with necessary table and data and modify the database to accommodate the following:	**30 Hrs**

		i. Add the book Exploring Microsoft Office 2000 Vol II (ISBN: 013-011100-7) by Grauer/Barber, published in 1999 by Prentice Hall, selling for $45.00. ii. Change the price of Memory Management for All of Us to $29.95. iii. Delete The Presentation Design Book. B. Create a table employ with (idno, name, job, age, salary). Insert 10 records. Create a query to display the information of all managers. Create a query to display the names of employs who"s salary is >15000. C. Use the Form Wizard to create a form, Move and size controls within a form. Use the completed form to enter data into the associated table. **Practical 4:** A. Add fields to an existing table. Use the Lookup Wizard to create a combo box. Add controls to an existing form to demonstrate inheritance. Add command buttons to a form. B. Generate and use various the queries using Query Wizards. C. Generate and use various the Query with User Input. D. Demonstrate use of Expression Builder. **Practical 5:** A. Use the report wizard to create a new report. Modify an existing report by adding, deleting, and/or modifying its controls. B. Create a query containing a calculated control. Then, create report based on that query. Use the Sorting and Grouping command to add a group header and group footer to a report. C. Use action queries to modify a database. Create a crosstab query to display summarized values from a table.	
		Module 2:	
		Practical 6: A. Create and Open a database with multiple tables; Identify the one-to-many relationships within the database and to produce reports based on those relationships. B. Create and Open a database with multiple tables; Identify the one-to-one relationships within the database and to produce reports based on those relationships. C. Create and Open a database with multiple tables; Identify the Many-to-Many relationships within the database and to produce reports based on those relationships. **Practical 7:** A. Demonstrate use of look up tables. B. Use the Report Wizard to create a report having the following requirements: i. Select the LastName field from the Author table. ii. Select the Title and Price fields from the Book table. iii. Select the PubName field from the Publisher table.	**30 Hrs**

	iv. View the data by Publisher. v. Add a grouping level using LastName. vi. Sort the report by the Title field in ascending order. vii. Choose Stepped layout and Portrait orientation. viii. Type Book List as the report's title. C. Define the relationship between two tables and add a subform to a form. **Practical 8:** A. Import an Access table from an Excel workbook. Create a one-to-many relationship between tables in a database. Create a multiple-table query. B. Import external data from the Excel spreadsheet file Bookstore. i. Make sure Import the source data into a new table in the current database is selected. ii. Select the Author worksheet. iii. Make sure that First Row Contains Column Headings is selected. iv. For the AuthorID field, set the Data Type option to Long Integer and set the Indexed option to Yes (No Duplicates). v. Select Choose my own primary key and make sure the AuthorID field is selected. vi. Save the table with the name Author. C. Export data from access to various formats. **Practical 9:** A. Relationships: Create and Use Author and Book Table. i. Create a relationship between the AuthorID field in the Author table and the AuthorCode field in the Book table. Put a checkmark in the box labeled Enforce Referential Integrity. ii. Create a relationship between the PubID field in the Publisher table and the PubID field in the Book table. Put a checkmark in the box labeled Enforce Referential Integrity. B. Create a switchboard; Use the Link Tables command to associate tables in one database with the objects in a different database. C. Create an AutoExec and a Close Database macro and demonstrate the use. **Practical 10:** A. Create the College Library database find out the following: - i. Total no. of copies of books subject wise. ii. A report displays all books group by Publisher. iii. A report displays all books group by Book Title. iv. A report displays all books group by Book Edition B. Demonstrate the use of Database Splitter Wizard by splitting database. C. Make Access database as an executable-only	
10	**Online reference/Text Books** 1. https://www.quackit.com/microsoft_access/tutorial/	

	2. https://www.tutorialspoint.com/ms_access/index.htm 3. Access 2016 in easy steps, by Mike McGrath, In Easy Steps, 1st Edition, 2017 4. Relational Databases and Microsoft Access, by Ron McFadyen, 1st Edition	
11	**Reference Books** 1. MICROSOFT ACCESS 2019 by David Murray, Kendall Hunt Publishing, 1st Edition, 2020. 2. Step by Step Microsoft Access 2013, by Joyce Cox and Joan Lambert, 1st Edition, Microsoft Press, 2013 3. Access 2019 Bible, by Michael Alexander, Richard Kusleika, Wiley, 1st Edition, 2018 4. Access 2019 For Dummies, by Laurie A. Ulrich, Ken Cook, Wiley, 1st Edition, 2018	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks.	30 marks practical exam of 2 hours duration
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	

Name of the Course: Fundamentals of Telecommunication Systems

Sr.No.	Heading	Particulars
1	**Description the course :** **Including but Not limited to:**	The course on Fundamentals of Telecommunication Systems aims to provide an in-depth understanding of the basic concepts and theories of signals and systems, as well as their applications in the field of telecommunication engineering. The course also focuses on the latest trends in 5G technology, providing students with insights into the driver, pillars, and challenges of 5G networks. Relevance and Usefulness: The course is highly relevant to students pursuing degrees in electronics and communication engineering, as well as those interested in telecommunications engineering. By focusing on key concepts and terminologies, such as sets, mappings, functions, and systems operators, the course provides a foundation for understanding both the theoretical and

		practical aspects of signals and systems. Additionally, the course helps students understand the role of 5G technology in enabling advanced wireless communication and the internet of things (IoT), which can be useful for developing innovative applications and services. Application and Interest: By completing the course, students will be equipped to apply their knowledge and skills in a range of industries and sectors, including telecommunication, internet of things, and wireless communication. The course is also highly engaging, as it covers several fascinating topics, including wireless communication, 5G technology, and IoT, among others. Connections with Other Courses: The course has links with other courses in electronics and communication engineering, including digital signal processing, telecommunication theory and practice, mobile communication, Information Technology and internet of things. Demand in the Industry and Job Prospects: Graduates with a background in signals and systems and 5G technology are in high demand in the telecommunication industry, as there is an increasing need for professionals who can design, implement, and oversee advanced communication networks. Specializations in 5G technology and signals and systems can open up a range of job prospects, including roles such as telecommunications engineer, network architect, systems engineer, and wireless communication developer, among others. In conclusion, the course in signals and systems and 5G technology is highly relevant and useful for students pursuing degrees in electronics and communication engineering and Information Technology. The course is engaging and provides a solid foundation in key concepts and technologies, enabling students to pursue a range of job prospects within the telecommunication industry.
2	**Vertical :**	Skill Enhancement Course(SEC)
3	**Type :**	Theory
4	**Credits :**	2 credits (30 hours in a semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. Identify the fundamental concepts and terminologies of signals and systems theory through an introduction to sets, mappings, functions, and systems operators.	

	CO 2. Demonstrate knowledge of the properties of continuous-time signals and systems, transformations of the independent variable, properties of functions, and representation of arbitrary functions. CO 3. Demonstrate knowledge of the properties of discrete-time signals and systems, transformations of the independent variable, properties of sequences, and representation of arbitrary sequences. CO 4. Analyze the drivers for 5G technology, identify the 10 pillars of 5G, and describe the evolution of wireless communication from LTE technology to beyond 4G. CO 5. Discuss the 5G internet of things (IoT), explain networking reconfiguration and virtualization support, and identify the mobility and quality of service control in 5G networks. CO 6. Evaluate the challenges of small cells in 5G mobile networks and identify the capacity limits and achievable gains with densification.	
8	**Course Outcomes (OC):** OC 1. Identify the fundamental concepts and terminologies of signals and systems theory through an introduction to sets, mappings, functions, and systems operators. OC 2. Demonstrate knowledge of the properties of continuous-time signals and systems, transformations of the independent variable, properties of functions, and representation of arbitrary functions. OC 3. Demonstrate knowledge of the properties of discrete-time signals and systems, transformations of the independent variable, properties of sequences, and representation of arbitrary sequences. OC 4. Analyze the drivers for 5G technology, identify the 10 pillars of 5G, and describe the evolution of wireless communication from LTE technology to beyond 4G. OC 5. Discuss the 5G internet of things (IoT), explain networking reconfiguration and virtualization support, and identify the mobility and quality of service control in 5G networks. OC 6. Evaluate the challenges of small cells in 5G mobile networks and identify the capacity limits and achievable gains with densification.	
9	**Modules:-** **Module 1: Signals and Systems:** 1. **Signals and Systems:** Introduction, Signals, Systems, Why Signals and Systems? Preliminaries, Overviews, Sets, Mappings, Functions, Sequences, Abuse of notations, System operators, Basic Signal Properties. 2. **Continuous-Time Signals and Systems:** Overview, Transformations of the Independent Variable, Transformations and the Dependent Variable, Properties of functions, Elementary functions, Representation of Arbitrary Functions using elementary functions, Continuous -time systems, Properties of systems, 3. **Discrete-Time Signals and Systems:** Overview, Transformations of the independent variable, Properties of Sequences, Elementary Sequences, Representing Arbitrary Sequences Using Elementary Sequences, Discrete-Time Systems, Properties of Systems	**15 Hrs**
	Module 2: Fundamentals of 5G Networks	
	4. **Drivers for 5G:** Introduction, Historical trend of Wireless Communication, Evolution of LTE technology to beyond 4G, 5G	**15 Hrs**

	Roadmap, 10 pillars of 5G, 5G in Europe, 5G in Asia, 5G in Asia, 5G Architecture 5. **The 5G Internet:** Introduction, Internet of Things and Context-Awareness, Networking Reconfiguration and Virtualisation Support, Mobility, Quality of Service Control, Emerging Approach for Resource Over-Provisioning 6. **Small Cells for 5G Mobile Networks:** Introduction, What are small cells? Capacity Limits and Achievable Gains with Densification, Mobile Data Demand, Demand vs Capacity, Small-Cell Challenges, Conclusions and future directions	
10	**Text Books:** 1. Signals and Systems, Michael Adams, University of Victoria, 3rd Edition, 2012 2. Fundamentals of 5G Mobile Networks, Edited by Jonathan Rodriguez, Wiley Publications, 2015	
11	**Reference Books** 1. Signals and Systems, Michael Adams, University of Victoria, 3rd Edition, 2012 2. Fundamentals of 5G Mobile Networks, Edited by Jonathan Rodriguez, Wiley Publications, 2015	
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 Total: 20 marks	**Format of Question Paper: External Examination (30 Marks)– 1 hr duration**
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)	

OPEN ELECTIVE SYLLABUS

AC – 20.04.2024
Item No. – 5.4 (N) Sem I (7a)

As Per NEP 2020

University of Mumbai

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

OE1: Stress Management I

Sr. No.	Heading	Particulars
1	**Description the course:** **Including but Not limited to:**	The course is designed to understand stress, response to stress, coping and various coping mechanisms that people in general use in various settings in life. It introduces to a important connection between stress and stress management with physical and mental health. The course provides a guideline for managing stress in work, family and personal life. It also tries to bring upon aspects of Indian life and its association with stress and its management. Various interventions discussed are useful for people in general and psychologist and in particular. The four units include stress and stress psychophysiology and Stress and Illness/Disease and Intervention; Intrapersonal and interpersonal life-situation Interventions and Relaxation techniques; Exercise and strategies for decreasing stressful behaviors and Occupational Stress; Stress: Family and Elderly
2	**Vertical :**	~~Major/Minor~~/ Open Elective /~~Skill Enhancement / Ability Enhancement/Indian Knowledge System~~
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**: 1) To understand concept of stress 2) To impart knowledge and understanding of the basic concepts and modern trends in Stress Management 3) To foster interest in Stress Management as a field of study and research 4) To make the students aware of the practical applications of the various concepts in Stress Management in daily life, in the Indian context 5) To learn about psychophysiology and Stress and Illness/Disease	

8	**Course Outcomes**: 1) Students are able to find and explain various concepts of stress. 2) Students can explain the role of psycho physiology plays in stress, illness and disease. Students can give example and site researches for the same. 3) Students can compare different types of stressors and contrast to them to different kind of situations. 4) Students can explain Intrapersonal and interpersonal Interventions to manage stress.
9	**Modules**:-
	Module 1: Stress and stress psychophysiology and Stress and Illness/Disease and Intervention (15 Hours)
	1. The pioneers, stress theory, the stressor, stress reactivity, definition of stress, stress management goals 2. Stress psychophysiology: Brain, Endocrine system, autonomic nervous system, cardiovascular system, gastrointestinal system, muscles and skin, symptoms and stress 3. Hot reactors, psychosomatic disease, stress and the immunological system, stress and serum cholesterol, specific conditions, posttraumatic stress disorder, stress and other conditions **4.** Intervention: a model of stress, setting up roadblocks, comprehensive stress management, eustress and a model, taking control and making a commitment
	Module 2: Intrapersonal and interpersonal life-situation Interventions and Relaxation techniques (15 Hours)
	1. Intrapersonal Interventions: eliminating unnecessary stressors, nutrition and stress, noise and stress, life events and stress, hassles and chronic stress, success analysis 2. Interpersonal Interventions: asserting oneself, Conflict resolution, communication, time management, social support networking 3. Meditation and autogenic training and Imagery 4. Progressive relaxation, biofeedback and other relaxation techniques
10	**Text Books:** Greenberg, J. S. (2008). Comprehensive Stress Management. (10th ed). New York: McGraw Hill publications.
11	**Reference Books:** 1) Olpin, M. & Hesson, M. (2021). Stress Management for Life: A Research-Based Experiential Approach. 5th Edition 2) Bam, B. P. (2008). Winning Habits: Techniques for Excellence in Sports. New Delhi: Pearson Power, Dorling Kindersley India pvt ltd. 3) Hariharan, M., & Rath, R. (2008). Coping with Life Stress: The Indian Experience. New Delhi: Sage publications India pvt ltd. 4) Rice, P.L. (1999). Stress and Health. (3rd ed). Brooks/Cole publishing co.

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: (20 marks)** **a) Question Paper Pattern for Class Test Examination (10 Marks)** **1.** Fill in the Blanks/ match pairs/ MCQ/True False (All are compulsory): **5 Marks** **2.** Short Notes (Any Three out of Five) **5 Marks** **b) Completion of following activities as a part of CIE (10 Marks)** Classroom Presentations/ Assignments /Movie Review / Essay Submission/ Book review/ Field Visit Report / Educational Activity Report/ Presentation / Role play/ creative writing assignment: **10 Marks**	
14	**(B) External / Semester End Examination Marks: 30 Time: 1 Hours** **Each question is for 15 marks. Two out of Three questions to be attempted.** Q.1 Fill in the blanks (Based on all units). Marks 15 Q.2 Essay Type Questions (Based on Unit I). Marks 15 Q.3 Essay Type Questions (Based on Unit II). Marks 15	

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 – 20/04/2024
Item No. – 7.7 Sem. I (1b)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Board of Studies in Commerce	
UG First Year Programme	
Semester	**I**
Title of Paper	**Credits 2**
I) Entrepreneurship Management	**Credits 2**
2)	
From the Academic Year	**2024-25**

OE Sem 1

ENTREPRENEURSHIP MANAGEMENT

PROGRAM	**B.COM**
SEMESTER	**I**
COURSE TITLE	**ENTREPRENEURSHIP MANAGEMENT**
VERTICLE /CATEGORY	**OE**
COURSE LEVEL	**4.5**
COURSE CODE	
COURSE CREDIT	**2**
HOURS PER WEEK THEORY	**2**
HOURS PER WEEK PRACTICAL/TUTORIAL	NA

COURSE OBJECTIVE
This course provides an overview of the business, understanding and significance of the business in economy.
COURSE OUTCOME
CO1: Learners will recognize the fundamental components of the business
CO2: Evaluate the impact of traditional and modern business activities
CO3: Learners will be able to apply theoretical knowledge to real world scenarios within the business sector.
CO4: To create comprehensive understanding of the risks and challenges associated with business world

ORGANISATION OF THE COURSE

UNIT NO	COURSE UNITS AT A GLANCE	TOTAL HOURS
1	Introduction to Entrepreneurship	15
2	Entrepreneurship Management	15
	TOTAL HOURS	30

COURSE DESIGN

Unit 1 : Introduction to Entrepreneurship (15)

- Introduction: Concept and importance of entrepreneurship, factors Contributing to Growth of Entrepreneurship, Entrepreneur and Manager, Entrepreneur and Intrapreneur, Types of Entrepreneurs
- Competencies of an Entrepreneur, Entrepreneurship Training and Development centers in India. Incentives to Entrepreneurs in India. Options available to entrepreneurs- franchising and outsourcing. Cases on takeover, mergers and acquisitions in India and at global level. Women Entrepreneurs: Problems and Promotion. Social Entrepreneurship-Definition, importance

PEDAGOGICAL APPROACH: Lecture Method. Case studies, assignment

Unit 2: ENTREPRENEURSHIP MANAGEMENT (15)

- Idea generation – sources and methods Identification and classification of ideas. Environmental Scanning and SWOT analysis Preparation of project plan – Components of an ideal business plan – market plan, financial plans, operational plan, and HR plan. Project formulation – project report significance and content
- Meaning and definition (evolution) Role and importance, Policies governing SMEs Organizational structure Steps in setting up a small unit,

PEDAGOGICAL APPROACH: Lecture Method, Assignments and Visits

REFERENCES:-

1. Small scale industries and entrepreneurship, Dr. Vasant Desai, Himalayan Publishing House
2. Management of small scale industries, Dr. Vasant Desai, Himalayan Publishing House
3. Management of small scale industries, J.C. Saboo Megha Biyani, Himalayan Publishing House
4. Dynamics of entrepreneurial development and Management, Dr. Vasant Desai, Himalayan Publishing
5. Entrepreneurship development, Moharanas and Dash C.R., RBSA Publishing, Jaipur
6. Beyond entrepreneurship, Collins and Lazier W, Prentice Hall, New Jersey, 1992
7. Entrepreneurship, Hisrich Peters Shephard, Tata McGraw Hill
8. Fundamentals of entrepreneurship, S.K. Mohanty, Prentice Hall of India
9. A Guide to Entrepreneurship, David Oates, Jaico Publishing House, Mumbai, Edn 2009

Total 50 Marks: with 2 Credits
30 Marks External and 20 Marks Internal

30 Marks External

DURATION: 1 Hour MARKS: 30

Any 2 out of 3

Q. 1 Answer the following a. b.	(15 Marks)
Q. 2 Answer the following a. b.	(15 Marks)
Q. 3 Answer the following a. b.	(15 Marks)

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20 Marks Internal

1) Class Test	(05 Marks)
2) Assignment	(05 Marks)
3) Presentation	(05 Marks)
4) Group Discussion	(05 Marks)
5) Quiz	(05 Marks)
6) Case Study	(05 Marks)

Note: 1) Any Four out of the above can be taken for the internal Assessment.
2) The internal Assessment shall be conducted throughout the Semester.

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

ABILITY ENHANCEMENT COURSE SYLLABUS

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
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- Doff, Adrian and Christopher Jones. *Language in Use* (Intermediate and Upper Intermediate). CUP, 2004.
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- Goodale, Malcolm. P*rofessional Presentations Video Pack: A Video Based Course*. Cambridge University Press, 1998.
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- Raman, Meenakshi, and Singh, Prakash. *Business Communication*. India, Oxford University Press, 2006.
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- 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.
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- 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**

EXAM PATTERN
B.Sc.(I.T.)

QUESTION PAPER PATTERN

(External and Internal)

<table>
<tr><td rowspan="4">I</td><td colspan="2">A Theory of 2 credits is evaluated for a total of 50 Marks</td></tr>
<tr><td>Internal Continuous Assessment:</td><td>40%[20 Marks]</td></tr>
<tr><td colspan="2">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
Total: 20 marks</td></tr>
<tr><td colspan="2">External Semester End Examination: 60%[30 Marks]</td></tr>
<tr><td colspan="3">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)</td></tr>
<tr><td rowspan="4">II</td><td colspan="2">A Practical of 2 credits is evaluated for a total of 50 Marks</td></tr>
<tr><td>Internal Continuous Assessment:</td><td>40%[20 Mrks]</td></tr>
<tr><td colspan="2">Continuous Evaluation through:
Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks.</td></tr>
<tr><td colspan="2">Semester End Examination: 60%[30 Marks]</td></tr>
<tr><td colspan="3">Format of Question Paper: Duration 2 hours. Certified copy of Journal is compulsory to appear for the practical examination(30 Marks)
Practical Slip:
Q1. From Module 1 13 marks
Q2. From Module 2 12marks
Q3. Journal and Viva 05 marks</td></tr>
</table>

Examination and Standard of Passing:

Regulations regarding the scheme of exams, number of credits and standard of passing will be as prescribed by the University of Mumbai.

A student is said to have passed if he/she secures 40% of marks allotted in each head of passing. External evaluation of 30 marks and Internal evaluation of 20 marks are treated as separate heads of passing.

The Ten Point Grading System prescribed by the University of Mumbai will be as follows:

Letter Grades and Grade Points

Semester GPA/ Program CGPA Semester/ Program	**% of Marks**	**Alpha-Sign / Letter GradeResult**	**Grade Points**
9.00-10.00	90.0-100	O (Outstanding)	10
8.00-<9.00	80.0-<90.0	A+ (Excellent)	9
7.00-<8.00	70.0-<80.0	A (Very Good)	8
6.00-<7.00	60.0-<70.0	B+ (Good)	7
5.50-<6.00	55.0-<60.0	B (Above Average)	6
5.00-<5.50	50.0-<55.0	C (Average)	5
4.00-<5.00	40.0-<50.0	P (Pass)	4
Below 4.00	Below 40	F (Fail)	0
Ab (Absent)	-	Absent	0

This syllabus is applicable to IDOL students as well, w.e.f. 2025-26

Appendix B

Justification for B.Sc. (Information Technology)

1.	Necessity for starting the course:	**A large amount of The demand for IT professionals is consistently high, and individuals with a B.Sc in IT can find opportunities in various sectors, including technology companies, healthcare, finance, government, and more.**
2.	Whether the UGC has recommended the course:	**Yes**
3.	Whether all the courses have commenced from the academic year 2024-2025	**To be implemented from 2024-2025 onwards**
4.	The courses started by the University are self-financed, whether adequate number of eligible permanent faculties are available?:	**Self-financed** **Yes. Some experts are called as visiting faculties**
5.	To give details regarding the duration of the Course and is it possible to compress the course?:	**4 years. Not possible to compress the program**
6.	The intake capacity of each course and no. of admissions given in the current academic year:	**60 seats for one division. Admissions will be held from 2024-2025 onwards**
7.	Opportunities of Employability / Employment available after undertaking these courses:	**B.Sc in Information Technology can open up a wide range of opportunities and employment prospects across various industries. Additionally, as technology continues to advance, new roles and specialties within the IT field are continually emerging, providing diverse career paths for IT graduates.**

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. – 6.2 (N)

As Per NEP 2020

University of Mumbai

Title of the program

A- U.G. Certificate in Information Technology
B- U.G. Diploma in Information Technology
C- B.Sc. (Information Technology)
D- B.Sc. (Honours) in Information Technology
E- B.Sc. (Honours with Research) in Information Technology

Syllabus for Semester –

Sem I & II

Ref: GR dated 20th April, 2023 for Credit Structure of UG

(With effect from the academic year 2024-25 Progressively)

University of Mumbai

Syllabus for Approval

(As per NEP 2020)

Sr. No.	Heading	Particulars	
1	**Title of program** **O. _____A**	A	Title of the program U.G. Certificate in Information Technology
	O. _____B	B	U.G. Diploma in Information Technology
	O. _____C	C	B.Sc. (Information Technology)
	O. _____D	D	B.Sc. (Honours) in Information Technology
	O. _____E	E	B.Sc. (Honours with Research) in Information Technology
2	**Eligibility** **O. _____A**	A	10+2 (A learner must have completed HSC or equivalent with 45% of aggregate for open category and 40% of aggregate in case of reserved candidates in one attempt with Mathematics and/or Statistics as one of the subjects **(OR)** Passed Equivalent Academic Level 4.0 with CGPA equivalent to 45% for open category and 40% in case of reserved candidates with Mathematics and/or Statistics as one of the subjects
	O. _____B	B	Under Graduate Certificate in Information Technology Academic Level 4.5
	O. _____C	C	Under Graduate Diploma in Information Technology Academic Level 5.0
	O. _____D	D	Bachelors of Science in Information Technology with minimum CGPA of 7.5 Academic Level 5.5
	O. _____E	E	Bachelors of Science in Information Technology with minimum CGPA of 7.5 Academic Level 5.5
3	**Duration of program** **R. _____**	A	One Year
		B	Two Years
		C	Three years
		D	Four years

		E	Four years
4	**Intake Capacity** **R. _____**		
5	**Scheme of Examination** **R. _____**	NEP 40% Internal 60% External, Semester End Examination Individual Passing in Internal and External Examination	
6	**Standards of Passing** **R. _____**	40% in each component	
7	**Sem. I & II Credit Structure** **R: _____A** **R: _____B** **Sem. III & IV Credit Structure** **R: _____C** **R: _____D** **Sem. V & VI Credit Structure** **R: _____E** **R: _____F**	Attached herewith	
8	**Semesters**	A	Sem I & II
		B	Sem I, II, III& IV
		C	Sem I, II, III, IV, V & VI
		D	Sem I, II, III, IV, V, VI, VII & VIII
		E	Sem I, II, III, IV, V, VI, VII & VIII
9	**Program Academic Level**	A	4.5
		B	5.0
		C	5.5
		D	6.0
		E	6.0
10	**Pattern**	Semester	
11	**Status**	New	
12	**To be implemented from Academic Year Progressively**	From Academic Year: 2023-24	

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

Preamble

1) Introduction

Information technology (IT) continues to be a dynamic and rapidly evolving field with high demand for skilled professionals. The demand for IT workers is driven by various factors, and the landscape may have evolved over a period of time. NEP envisages the multidisciplinary approach thus making IT much more applicable in all fields of life. This facilitates multi-institutional mobility of the students within India as well as abroad thus making the students attain different proficiency levels right from certificate to B.Sc Honours with Research. This new syllabus under NEP will thus enables the students for higher education, research and career in the field of IT

2) Aims and Objectives

The aims and objectives of a Bachelor of Science (B.Sc) program in Information Technology (IT) generally revolve around providing students with a comprehensive understanding of the principles, technologies, and applications within the field of information technology. The entire program collectively aim to produce graduates who are well-rounded IT professionals, capable of contributing to the design, development, and management of information technology systems in various industries. The specific details of the curriculum may vary among institutions offering B.Sc in Information Technology programs.

3) Learning Outcomes

The B. Sc. (Information Technology) Programme shall prepare and enable the graduates to:

- ✓ Demonstrate proficiency in programming languages, Data structures, Design and implement software solutions with their technical competence
- ✓ Analyze user requirements and design effective IT systems or applications.
- ✓ Apply system analysis and design methodologies to address complex business challenges.
- ✓ Acquire the skills of Database Management, Networking and Security, Web Technologies
- ✓ Plan, execute, monitor, and control IT projects.
- ✓ Analyze and solve complex IT problems using critical thinking skills.
- ✓ Apply concepts of artificial intelligence, machine learning, cloud computing, and IoT
- ✓ Effectively communicate technical information both orally and in writing.

4) Any other point (if any)

PROGRAMME SPECIFIC OUTCOMES (PSO)

On completing the B. Sc.(Information Technology) at the University of Mumbai, the graduates shall be able to

- Technical Proficiency:
  - Demonstrate a comprehensive understanding of fundamental concepts, principles, and technologies in information technology.
  - Apply programming and software development skills to design and implement IT solutions.
- System Thinking and Analysis:
  - Apply system analysis and design methodologies to analyze and address

complex problems.
    - Design and develop IT systems that meet user requirements and organizational needs.
- Database Management:
    - Design, implement, and manage relational databases to store and retrieve information effectively.
    - Demonstrate proficiency in using database management systems and querying languages.
- Networking and Security:
    - Understand and implement computer networks, protocols, and security measures.
    - Evaluate and implement security solutions to protect information systems.
- Web Technologies:
    - Develop web applications using a variety of technologies and programming languages.
    - Design and create user interfaces that adhere to web design principles.
- Project Management:
    - Apply project management principles to plan, execute, and deliver IT projects.
    - Demonstrate the ability to work effectively within project teams.
- Emerging Technologies:
    - Stay informed about and adapt to emerging technologies in the IT field.
    - Apply concepts of artificial intelligence, machine learning, cloud computing, and IoT to solve real-world problems.
- Critical Thinking and Problem-Solving:
    - Analyze and solve complex IT problems using critical thinking skills.
    - Apply problem-solving strategies to troubleshoot and resolve technical issues.
- Communication Skills:
    - Effectively communicate technical information to diverse audiences, both orally and in writing.
    - Collaborate with team members and stakeholders to achieve common goals.
- Ethics and Professionalism:
    - Demonstrate ethical behavior and professionalism in all aspects of the IT profession.
    - Adhere to ethical standards and legal considerations related to information technology.

Credit Structure of the Program (Sem II)

Under Graduate Certificate in Information Technology (Credit Structure Sem II)

Semester	Major		Minor	OE	VSC, SEC (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Cum. Cr. / Sem.
1	**Mandatory**	**Electives**						
	6	-	MN:2	2+2	VSC:2, SEC:2	AEC:2, VEC:2	CC:2	22
	OOPs with C++ - 02 Web Designing - 02 Practical II - 02	-	Industry and Service Management - (ISM)	**OE :** Leadership Styles Content Writing	**VSC:** Assembly Language Programming (PRACTICAL) **SEC:** PL/SQL (PRACTICAL)	**AEC:** Marathi (भाषिक कौशल्यांचे उपयोगज १ (भाषण व निवेदन कौशल्ये)) OR Hindi (हिंदी भाषा – कौशल के आधार) **VEC:** Foundation of Behavioral Skills – Basic Level - (FBS)	**CC:** Introduction to cultural activities OR Introduction to Sports, Physical Literacy, Health & Fitness and Yoga OR National service scheme (NSS)	

SEMESTER II

Syllabus
B.Sc. (Information Technology)
(Sem.- II)

Major Courses

Name of the Course: Object Oriented Programming using C++

Sr.No.	Heading	Particulars
1	**Description the course : Including but Not limited to:**	This course provides students knowledge and skills to understand and implement the object oriented skills. It will help them to implement OOP solutions to real-world problems.
2	**Vertical :**	Major
3	**Type :**	Theory
4	**Credits :**	2 credits (1 credit = 15 Hours for Theory in a semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. To explain the difference between object oriented programming and procedural programming. CO 2. To understand OOP principles to create modular, reusable, and maintainable code. CO 3. To understand the concept of polymorphism ,virtual functions,inheritance and exception handling. CO 4. To understand file handling concepts using C++.	
8	**Course Outcomes (OC):** OC 1. Students can explain the key concept of OOP and their application in software development. OC 2. Students can Design and implement classes and objects to model real-world entities. OC 3. Students can apply the concepts of polymorphism, virtual functions, inheritance and exception handling in program. OC 4. Students can apply operator overloading, runtime polymorphism, generic Programming OC 5. Students can implement file handling concepts in program	
9	**Modules:-** **Module 1:**	
	1. Object Oriented Methodology: Introduction, Advantages and Disadvantages of Procedure Oriented Languages, Application of OOPS, Principles of OOPS: Objects, Classes, Data Abstraction and Data Encapsulation, Inheritance, Polymorphism, Dynamic Binding, Message Passing. 2. Classes and Objects: Simple classes (Class specification, class members accessing), Defining member functions, passing object as an argument, Returning object from functions, friend classes, friend function.	**15 Hrs**

	3. Constructors and Destructors: Introduction, Default Constructor, Parameterized Constructor and examples, Destructors. 4. Program development using Inheritance: Introduction, Advantages provided by inheritance, choosing the access specifier, Derived class declaration, derived class constructors, class hierarchies, multiple inheritance, multilevel inheritance, hybrid inheritance.	
	Module 2:	
	5. Polymorphism: Concept of function overloading, overloaded operators, overloading unary and binary operators. 6. Virtual Functions: Introduction and need, Pure Virtual Functions, this Pointer, abstract classes, virtual destructors. 7. Exception Handling: Introduction, Exception Handling Mechanism, Concept of throw & catch with example. 8. Working with Files: Introduction, File Operations, Various File Modes, File Pointer and their Manipulation.	**15 Hrs**
10	**Text Books** 1. Object-oriented Programming C++, Hari Mohan Pandey , Laxmi Publications 2. C++ Programming: An Object-Oriented Approach, Behrouz A. Forouzan, Richard F. Gilberg , McGraw-Hill Education 3. C++ How to Program , Paul Deitel, Harvey Deitel	
11	**Reference Books** 1. Object Oriented Programming in C++ , E Balagurusamy 2. Object-Oriented Programming in C++ , Robert Lafore, Pearson Education. 3. Programming with ANSI C++ , Bhushan Trivedi 4. Demystified Object- Oriented Programming with C++, Dorothy R. Kirk	
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 Total: 20 marks	**Format of Question Paper:** **External Examination (30 Marks)– 1 hr duration**
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)	

Name of the Course: Web Designing

Sr.No	Heading	Particulars
1	**Description the course : Including but Not limited to:**	The objective of Web Designing course is to provide instructions on creating and maintaining a web page for publishing on the Internet. Students will be able to use HTML editor to author pages that include text and graphics..
2	**Vertical :**	Major
3	**Type :**	Theory
4	**Credits :**	2 credits (1 credit = 15 Hours for in a semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. To understand the fundamentals of Internet, and the principles of web design CO 2. To develop basic websites using HTML and Style Sheets. CO 3. To understand different style sheets used in web designing. CO 4. To implement JavaScript as a tool to add dynamism to static HTML pages.	
8	**Course Outcomes (OC):** OC 1. Learners will be able to use the HTML programming language OC 2. Learners will be able to execute web pages designed using HTML OC 3. Describe the concepts of World Wide Web, and the requirements of effective web design OC 4**.** List various tags in html and **use** these to **create** web page OC 5 : Gain necessary skills for designing and developing web applications	
9	**Modules:-** **Module 1:**	
	1. Introduction to HTML 5: What Is HTML? Understanding HTML Tags, Setting Up the Document Structure: Specifying the Document Type, Creating the HTML, Specifying a Page Title. Formatting Text by Using Tags: Creating Headings, Applying Bold and Italic Formatting, Applying Superscript and Subscript Formatting, Using Monospace and Preformatted Text. Using Lists and Backgrounds: Creating Bulleted and Numbered Lists, Creating Definition Lists, Inserting Special Characters, Inserting Horizontal Lines, Choosing Background and Foreground Colors. Creating Hyperlinks and Anchors- Hyperlinking to a Web Page, Creating Hyperlinking to an E-Mail Address, Hyperlinking to Other Content. **Style Sheets and Graphics**: Introduction to Style Sheets: Understanding Styles, Constructing Style Rules, Creating Styles for Nested Tags, Applying Styles to Hyperlinks, Creating and Linking to External Style Sheets.	**15 Hrs**

		Formatting Text by Using Style Sheets: Specifying a Font Family, Specifying a Font Size and Color, Applying Bold and Italics, Applying Strikethrough and Underlining, Creating Inline Spans, Adjusting Spacing Between Letters. Formatting Paragraphs by Using Style Sheets: Indenting Paragraphs, Applying a Border to a Paragraph, Specifying the Horizontal Alignment of a Paragraph, **Displaying Graphics** Selecting a Graphics Format, Preparing Graphics for Web Use, Inserting Graphics, Arranging Elements on the Page, Controlling Image Size and Padding, Hyperlinking from Graphics, Using Thumbnail Graphics, Including Alternate Text for Graphics, Adding Figure Captions 2. Page Layout and Navigation- Creating Navigational Aids , Creating a Text-Based and Graphical Navigation Bar, Creating an Image Map, Creating Tables, Specifying the Size of a Table, Specifying the Width of a Column, Merging Table Cells. Formatting Tables-Applying Table Borders, Applying Borders by Using Attributes, Applying Borders by Using Styles, Changing Cell Padding, Spacing, and Alignment. Setting Horizontal and Vertical Alignment **Creating User Forms**- Creating a Basic Form- Creating a Text Box,Special Field types for E-Mail and Web Addresses, Creating a Text Area, Creating a Submit or Clear Button, Creating Check Boxes and Option Buttons, Additional Input Types in HTML5 Incorporating Sound and Video- What's New with Audio and Video in HTML5?,Embedding Video Clips- Introducing the <video> Tag, The <embed> Tag: Your Fallback Plan, Placing a Video Clip on a Web Page. Incorporating Audio on a Web Page- Playing Audio with the <audio> Tag, Placing an Audio Clip on a Web Page	
	Module 2:		
		1. JavaScript: Introduction to JavaScript: Variable, statements, Operators, Comments, constructs, Functions, expressions, JavaScript console, Scope, Events, Strings, String Methods, Numbers, Number Methods, Dates, Date Formats, Date,Methods,Arrays, Array Methods, Booleans, Comparisons, Control Structures: Conditions, Switch, Loop For, Loop While, Break. **Operators**: Arithmetic Operators, Assignment Operators, Comparison Operators, Logical Operators, Bitwise Operators Statements: Conditional Statements – if else, switch, Loops – while, do while, for, for in, for of, Loop Control – break, continue, labels JavaScript Objects: User-defined Objects, with Keyword, Native Objects – Array, String, Date, Math, Number, RegExp, Cookies Events and Event Handlers: HTML Events, DOM Events, DOM Event Listener,onAbort, onBlur, onChange, onClick, onDblClick, onError, onFocus, onKeyDown,onKeyPress, onKeyUp, onLoad, onMouseDown, onMouseMove, onMouseOut,onMouseOver, onMouseUp, onReset, onResize, onSelect, onSubmit, onUnload 2. Basics of JQuery, JQuery selection and events, JQuery Effects, JQuery traversal and manipulation, Data attributes and templates, jQuery Plugins.	**15 Hrs**

	3. JSON – JSON: Introduction, JSON Grammar, JSON Values, JSON Tokens, Syntax, JSON vs. XML, Data Types, Objects, Arrays, Creating JSON, JSON Object, Parsing JSON, Persisting JSON, Data Interchange, JSON HTML, JSONP	
10	**Text Books** 1. Step by Step HTML5 by Faithe Wempen, Microsoft Press,2011 2. The Complete Reference HTML & CSS, Thomas A. Powell. McGrawHill, 5 th Edition,2010 3. The Complete Reference JavaScript Thomas A. Powell &Fritz Schneider McGrawHill 3rd 2012 4. Web Technologies: HTML, JAVASCRIPT, PHP, JAVA, JSP, XML and AJAX, Black Book Kindle Edition,by Kogent Learning Solutions Inc 5. HTML 5 Black Book, Covers CSS 3, JavaScript, XML, XHTML, AJAX, PHP and jQuery, 2ed Kindle Edition,by DT Editorial Services 6. JSON at work ,Tom MArrs,O'REILLY,First edition,2017	
11	**Reference Books** 1. Learning Web Design A Beginner's Guide to Html, CSS, JavaScript, And Web Graphics, Jennifer Niederst Robbins, O'Reilly, 5th Edition,2018. 2. Ivan Bayross, "Web Enabled Commercial Applications Development using HTML, DHTML, Javascript, Perl CGI", BPB, 2004 3. HTML 5 for Web Designers (By: Jeremy Keith) – http:// freepdf-books.com 4. Introduction to JavaScript Object Notation: A To-the-Point Guide to JSON kindle Edition by Lindsay Bassett, O'REILLY	
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 Total: 20 marks	**Format of Question Paper: External Examination (30 Marks)– 1 hr duration**
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)	

Name of the Course: Major Practical II

Sr.No.	Heading	Particulars
1	**Description the course :** **Including but Not limited to:**	**Object Oriented Programming usng C++ Practical** OOP encourages modular objects for reusable code, ensures well-organized and maintainable code via encapsulation, inheritance, and polymorphism, allowing flexibility and easy updates. Additionally, OOP models real-world scenarios, enhancing system understanding. **Web Designing Practical** Applying basic programming principles to the construction of websites

2	**Vertical :**	Major Practical
3	**Type :**	Practical
4	**Credits :**	2 credits (Total 60 hrs; 1 credit = 15 Hours for Theory or 30 Hours of Practical work in a semester)
5	**Hours Allotted :**	60 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. To explain the important characteristics of the C++ programming language. CO 2. To combine components of the C++ programming language to develop structured program. CO 3. To demonstrate the skills essential to compile, debug, and test C++ programs correctly. CO 4. To understand how to effectively implement HTML. CO 5. To develop the concept of basic and advanced text formatting. CO 6. To understand Hyper linking, Designing of webpage.	
8	**Course Outcomes (OC):** OC 1. Utilize C++ characteristics in software design and development. OC 2. Explain object-oriented techniques and explain how C++ supports them. OC 3. Employ C++ to demonstrate practical skill developing object-oriented solutions. OC 4. Examine a problem statements and design and develop object-oriented software using good coding practices and procedures. OC 5. Design static web pages using Hyper Text Markup Language (HTML). OC 6. Use their learned skills, knowledge and abilities to develop web sites OC 7. Collect information from the user with HTML Forms. OC 8. Enhance the look of web pages by implementing audio and video	
9	**Module I**	
	1. a. Write a C++ program to create a simple calculator. b. Write a C++ program to convert seconds into hours, minutes and seconds. c. Write a C++ program to find the volume of a square, cone, and rectangle. 2. a. Write a C++ program to find the greatest of three numbers. b. Write a C++ program to find the sum of even and odd n natural numbers c. Write a C++ program to generate all the prime numbers between 1 and n, where n is a value supplied by the user 3. a. Write a C++ program using classes and object Student to print name of the student, roll_no. Display the same. b. Write a C++ program for Structure bank employee to print name of the employee, account_no. & balance. Display the same also display the balance after withdraw and deposit	**30 Hrs**

c. Design the class Demo which will contain the following methods: readNo(), factorial() for calculating the factorial of a number, reverseNo() will reverse the given number, isPalindrome() will check the given number is palindrome, isArmstrong() which will calculate the given number is armStrong or not. WherereadNo() will be private method.

d. Write a program to demonstrate function definition outside class and accessing class members in function definition.

4.

a. Write a friend function for adding the two complex numbers, using a single class

b. Write a friend function for adding the two different distances and display its sum, using two classes.

c. Write a friend function for adding the two matrix from two different classes and display itssum

d. Write a Program to find Maximum out of Two Numbers using friend function.

Note: Here one number is a member of one class and the other number is member of some other class.

5.

a. Design a class Complex for adding the two complex numbers and also show the use of constructor.

b. Design a class Geometry containing the methods area() and volume() and also overload the area()function

c. Design a class StaticDemo to show the implementation of static variable and staticfunction

d. Write a C++ program to overload new/delete operators in a class.

e. Write a C++ Program to generate Fibonacci Series by using Constructor to initialize the Data Members.

6.

a. Overload the operator unary(-) for demonstrating operator overloading

b. Overload the operator + for adding the timings of two clocks, And also pass objects as an argument.

c. Overload the + for concatenating the two strings. For e.g “Py” +“thon” =Python

7.

a. Implement the concept of method overriding.

b. Show the use of virtual function

c. Show the implementation of abstract class.

8.

a. Write a C++ Program that illustrate single inheritance.

b. Write a C++ Program that illustrate multiple inheritance.

c. Write a C++ Program that illustrate multi-level inheritance.

d. Write a C++ Program that illustrate Hierarchical inheritance.

9.

a. Show the implementation of exception handling

b. Show the implementation for exception handling for strings
c. Show the implementation of exception handling for using the pointers.

10.

a. Design a class FileDemo open a file in read mode and display the total number of words and lines in the file.
b. Design a class to handle multiple files and file operations
c. Design a editor for appending and editing the files

Module II

1 Use of Basic and Advanced Tags, Lists and Backgrounds

a. Understanding elements, Tags and basic structure of HTML files
b. Design a web page using basic and advanced text formatting tags.
c. Design a web page using ordered, unordered list and description list.
d. Design a web page by choosing Background and Foreground Colors
e. Design a web page using Nested list and special characters.
f. Write an HTML code to display your CV on a web page.

2 Creating Hyperlinks, Anchors and style sheets

a. Design a web page with links to different pages and allow navigation between web pages.
b. Design a web page that automatically redirects the user to Other Content
c. Creating Hyperlinking to an E-Mail Address
d. Design a web page for creating Styles for Nested Tags
e. Design a web page by applying Styles to Hyperlinks
f. Design a web page by Creating and Linking to External Style Sheets.

3 Formatting Text and Paragraph by Using Style Sheets and displaying graphics

a. Design a web page by using text formatting tags
b. Design a web page using Indenting Paragraphs, Applying Border to a Paragraph and Specifying Horizontal Alignment of a Paragraph
c Implement a web page by creating inline spans and adjusting space between lines
d. Implement a web page by inserting a image and controlling the image size and padding
e. Design a web page by making image as a hyperlink
f. Develop a web page by using thumbnail graphics and also implement text for graphics

4 Tables , Page Layout and Navigation

a. Display a time table and display it in tabular format,
b. Write an html program to get the following output

NAME	SUBJECT	MARKS

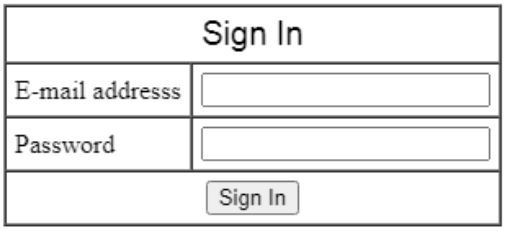
30 Hrs

Hillary	Advanced Web	75
	Operating System	60
Lary	Advanced Web	80
	Operating System	75
	Total Average: 72.5	

c. Design a table by merging the table cells.
d. Design a web page by Creating a Text-Based Navigation Bar
e . Design a web page by Creating a Graphical Navigation Bar
f. Design a web page with Image Map

5. Forms and Introducing video and audio tags

a. Design a web page with a form that uses all types of controls.
b. Design an admission form for any course in your college with text, pass word fields, check boxes, radio button and reset button.
c. Write a program to get the following output



d. Design a web page by placing a Video Clip on a Web Page
e. Design a web page by placing an Audio Clip on a Web Page
f. Design a web page embedding image, audio and video.

6 .Basics of java script
a. Using JavaScript, design a web page to accept a number from the user and print its Factorial.
b. Using JavaScript, a web page that prints Fibonacci series/any given series.
c. Write a JavaScript program to display all the prime numbers between 1 and 100.
d. Write a JavaScript program to accept a number from the user and display the sum of its digits.

7. Java Script: Validating User fields
a. Demonstrate the use of Document object methods.
b. Using java script, demonstrate validating Text Input Fields, Drop-down Lists and Checkboxes
c. Using java script, demonstrate validating Radio buttons and Validating Multi-Select Boxes
d. Write a Java script to prompt for users name and display it on the screen.

	8. Java Script : Handling the events a.Using java script, demonstrate the use of onAbort, onBlur, onChange, onClick, onDblClick events b. Using java script, demonstrate the use of onDragDrop, onError, onFocus events c. Using java script, demonstrate the use of onKeyDown, onKeyPress, onKeyUp, onLoad, onReset, onResize, onSelect, onSubmit, onUnload events d. Using java script, demonstrate the use of onMouseDown, onMouseMove, onMouseOut, onMouseOver, onMouseUp, onMove events. e. Using java script, demonstrate the use of onKeyDown, onKeyPress, onKeyUp, onLoad, onReset, onResize, onSelect, onSubmit, onUnload events 9. JQuery a. use JQuery effect in page b. Write a jQuery Code to find the data passed with the on() method for each element. c. Use JQuery Events d. JQuery traversal and manipulation 10. JSON Basics and Working with JSON a. Creating JSON b. Parsing JSON c. Persisting JSON d. Demonstrate use of JSON objects in array, print array on web page using document object e. Read data from json file and convert it into a JavaScript object and display the data in web page using document object	
10	Text Books 1. Object-oriented Programming C++, Hari Mohan Pandey 2. C++ Programming: An Object-Oriented Approach, Behrouz A. Forouzan, Richard F. Gilberg 3. C++ How to Program, Paul Deitel, Harvey Deitel 4. Step by Step HTML5, Faithe Wempen, Microsoft Press,2011 5. The Complete Reference HTML & CSS, Thomas A. Powell. McGraw Hill, 5th Edition,2010	
11	**Reference Books** 1. Object Oriented Programming in C++, E Balagurusamy 2. Object-Oriented Programming in C++ by Robert Lafore 3. Programming with ANSI C++, Bhushan Trivedi 4. Demystified Object- Oriented Programming with C++, Dorothy R. Kirk 5. Learning Web Design A Beginner's Guide to Html, CSS, JavaScript, And Web Graphics, Jennifer Niederst Robbins, O'Reilly, 5th Edition,2018. 6. "Web Enabled Commercial Applications Development using HTML, DHTML, Javascript, Perl CGI", Ivan Bayross, BPB, 2004 7. HTML 5 for Web Designers (By: Jeremy Keith) – http:// freepdf-books.com	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**

13	**Continuous Evaluation through:** Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks.	30 marks practical exam of 2 hours duration
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	

Vocational Skill Courses (VSC)

Name of the Course: Assembly Language Programming

Sr.No.	Heading	Particulars
1	**Description the course : Including but Not limited to:**	Introduction: The 8085 Assembly Language Programming course covers the principles and practices of writing low-level software that controls the 8085 microprocessor. This course provides an in-depth understanding of the 8085 microprocessor architecture and its instruction set, as well as how to write, debug, and optimize assembly language programs for this microprocessor. Relevance and Usefulness: The course is relevant to computer science/engineering students interested in learning about microprocessors and embedded systems programming. The course provides the fundamental knowledge and skills required to design and implement computer systems with low-level software control. Assembly language programming is the foundation of modern computer technology, which makes the course relevant to anyone interested in computer systems and programming. Application and Interest: The course is essential for students aspiring to work in the field of embedded systems, microcontroller/microprocessor programming, or any programming role that involves low-level software development. By the end of the course, students will be able to write efficient and optimized assembly language programs that control the functionality of a microprocessor. Connection with Other Courses: 8085 Assembly Language Programming is a fundamental course that provides an understanding of how computer systems work at the lowest level. It connects with several other computer science courses, such as Computer Organization and Architecture, Operating Systems, Compiler Design, and Embedded Systems Design. Demand in the Industry and Job Prospects: There is a high demand in the industry for programmers who possess knowledge of low-level software development, such as programming microprocessors with assembly language. Many industries, including aerospace, automotive, healthcare, and consumer electronics, require low-level software development skills in their employees. Job prospects for graduates with expertise in 8085 Assembly language

		programming are abundant in these sectors. Job roles may include embedded software engineer, hardware engineer, firmware developer, software developer, and testing/validation engineer.
2	**Vertical :**	Vocational Skill Course(VSC)
3	**Type :**	Practical
4	**Credits :**	2 credits (60 hours in a semester)
5	**Hours Allotted :**	60 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives(CO):** CO 1. To gain a thorough understanding of the 8085 microprocessor architecture and its associated instruction set. CO 2. To develop the ability to write and debug assembly language programs for the 8085 microprocessor. CO 3. To learn the principles of computer organization and how they relate to the 8085 microprocessor. CO 4. To become proficient in the use of 8085 assembly language programming tools, simulators, and debuggers. CO 5. To learn how to interface different input/output devices with the 8085 microprocessor. CO 6. To understand the concept of interrupts and how they are used in 8085 assembly language programming.	
8	**Course Outcomes(CO):** OC 1. Explain the architecture of the 8085 microprocessor and its associated instruction set. OC 2. Identify the different types of registers and their functions in the microprocessor. OC 3. Describe the memory organization and addressing modes of the 8085 microprocessor. OC 4. Write assembly language programs for the 8085 microprocessor using various instructions and addressing modes. OC 5. Debug and troubleshoot assembly language programs for the 8085 microprocessor using simulators and debuggers. OC 6. Implement conditional branching and looping constructs in assembly language programs. OC 7. Use 8085 assembly language programming tools, such as editors, assemblers, and emulators for developing and testing programs. OC 8. Simulate microprocessor operations using emulators and debuggers. OC 9. Connect input/output devices, such as LEDs, switches, and displays, to the 8085 microprocessor. OC 10.	
9	**Modules:-** **Module 1:**	
	1. Perform the following Operations related to memory locations. a. Store the data byte 32H into memory location 4000H. b. Exchange the contents of memory locations 2000H and 4000H **2. Simple assembly language programs.**	**30 Hrs**

a. Subtract the contents of memory location 4001H from the memory location 2000H and place the result in memory location 4002H.
b. Subtract two 8-bit numbers.
c. Add the 16-bit number in memory locations 4000H and 4001H to the 16-bit number in memory locations 4002H and 4003H. The most significant eight bits of the two numbers to be added are in memory locations 4001H and 4003H. Store the result in memory locations 4004H and 4005H with the most significant byte in memory location 4005H.
d. Add the contents of memory locations 40001H and 4001H and place the result in the memory locations 4002Hand 4003H.
e. Subtract the 16-bit number in memory locations 4002H and 4003H from the 16-bit number in memory locations 4000H and 4001H. The most significant eight bits of the two numbers are in memory locations 4001H and 4003H. Store the result in memory locations 4004H and 4005H with the most significant byte in memory location 4005H.
f. Find the l's complement of the number stored at memory location 4400H and store the complemented number at memory location 4300H.
g. Find the 2's complement of the number stored at memory location 4200H and store the complemented number at memory location 4300H.

3. Packing and unpacking operations.

a. Pack the two unpacked BCD numbers stored in memory locations 4200H and 4201H and store result in memory location 4300H. Assume the least significant digit is stored at 4200H.
b. Two digit BCD number is stored in memory location 4200H. Unpack the BCD number and store the two digits in memory locations 4300H and 4301H such that memory location 4300H will have lower BCD digit.

4. Register Operations

a. Write a program to shift an eight bit data four bits right. Assume that data is in register C.
b. Program to shift a 16-bit data 1 bit left. Assume data is in the HL register pair
c. Write a set of instructions to alter the contents of flag register in 8085.
d. Write a program to count number of I's in the contents of D register and store the count in the B register.

5. Multiple memory locations.

a. Calculate the sum of series of numbers. The length of the series is in memory location 4200H and the series begins from memory location 4201H. a. Consider the sum to be 8 bit number. So, ignore carries. Store the sum at memory location 4300H. b. Consider the sum to be 16 bit number. Store the sum at memory locations 4300H and 4301H
b. Multiply two 8-bit numbers stored in memory locations 2200H and 2201H by repetitive addition and store the result in memory locations 2300H and 2301H.
c. Divide 16 bit number stored in memory locations 2200H and 2201H by the 8 bit number stored at memory location 2202H. Store the quotient in memory locations 2300H and 2301H and remainder in memory locations 2302H and 2303H.

	d. Find the number of negative elements (most significant bit 1) in a block of data. The length of the block is in memory location 2200H and the block itself begins in memory location 2201H. Store the number of negative elements in memory location 2300H e. Find the largest number in a block of data. The length of the block is in memory location 2200H and the block itself starts from memory location 2201H. Store the maximum number in memory location 2300H. Assume that the numbers in the block are all 8 bit unsigned binary numbers.	
	Module 2:	
	1. Calculations with respect to memory locations. a. Write a program to sort given 10 numbers from memory location 2200H in the ascending order. b. Calculate the sum of series of even numbers from the list of numbers. The length of the list is in memory location 2200H and the series itself begins from memory location 2201H. Assume the sum to be 8 bit number so you can ignore carries and store the sum at memory location 2Sample problem: c. Calculate the sum of series of odd numbers from the list of numbers. The length of the list is in memory location 2200H and the series itself begins from memory location 2201H. Assume the sum to be 16-bit. Store the sum at memory locations 2300H and 2301H. d. Find the square of the given numbers from memory location 6100H and store the result from memory location 7000H e. Search the given byte in the list of 50 numbers stored in the consecutive memory locations and store the address of memory location in the memory locations 2200H and 2201H. Assume byte is in the C register and starting address of the list is 2000H. If byte is not found store 00 at 2200H and 2201H f. Two decimal numbers six digits each, are stored in BCD package form. Each number occupies a sequence of byte in the memory. The starting address of first number is 6000H Write an assembly language program that adds these two numbers and stores the sum in the same format starting from memory location 6200H g. Add 2 arrays having ten 8-bit numbers each and generate a third array of result. It is necessary to add the first element of array 1 with the first element of array-2 and so on. The starting addresses of array I, array2 and array3 are 2200H, 2300H and 2400H, respectively **2. Assembly programs on memory locations.** a. Write an assembly language program to separate even numbers from the given list of 50 numbers and store them in the another list starting from 2300H. Assume starting address of 50 number list is 2200H b. Write assembly language program with proper comments for the following: c. A block of data consisting of 256 bytes is stored in memory starting at 3000H. This block is to be shifted (relocated) in memory from 3050H onwards. Do not shift the block or part of the block anywhere else in the memory.	**30 Hrs**

	d. Add even parity to a string of 7-bit ASCII characters. The length of the string is in memory location 2040H and the string itself begins in memory location 2041H. Place even parity in the most significant bit of each character. e. A list of 50 numbers is stored in memory, starting at 6000H. Find number of negative, zero and positive numbers from this list and store these results in memory locations 7000H, 7001H, and 7002H respectively f. Write an assembly language program to generate Fibonacci number. g. Program to calculate the factorial of a number between 0 to 8. **3. String operations in assembly programs.** a. Write an 8085 assembly language program to insert a string of four characters from the tenth location in the given array of 50 characters b. Write an 8085 assembly language program to delete a string of 4 characters from the tenth location in the given array of 50 characters. c. Multiply the 8-bit unsigned number in memory location 2200H by the 8-bit unsigned number in memory location 2201H. Store the 8 least significant bits of the result in memory location 2300H and the 8 most significant bits in memory location 2301H. d. Divide the 16-bit unsigned number in memory locations 2200H and 2201H (most significant bits in 2201H) by the B-bit unsigned number in memory location 2300H store the quotient in memory location 2400H and remainder in 2401H e. DAA instruction is not present. Write a sub routine which will perform the same task as DAA. **4. Calculations on memory locations.** a. To test RAM by writing '1' and reading it back and later writing '0' (zero) and reading it back. RAM addresses to be checked are 40FFH to 40FFH. In case of any error, it is indicated by writing 01H at port 10 b. Arrange an array of 8 bit unsigned no in descending order c. Transfer ten bytes of data from one memory to another memory block. Source memory block starts from memory location 2200H where as destination memory block starts from memory location 2300H d. Write a program to find the Square Root of an 8 bit binary number. The binary number is stored in memory location 4200H and store the square root in 4201H. e. Write a simple program to Split a HEX data into two nibbles and store it in memory **5. Operations on BCD numbers.** a. Add two 4 digit BCD numbers in HL and DE register pairs and store result in memory locations, 2300H and 2301H. Ignore carry after 16 bit. b. Subtract the BCD number stored in E register from the number stored in the D register c. Write an assembly language program to multiply 2 BCD numbers	
10	**Text Books** 1. 8080A/8085 Assembly Language Programming, Lance A. Leventhel, Osborne, 1978	

11	**Reference Books** 1. Microprocessors Architecture, Programming and Applications with the 8085, Fifth Edition, Penram Publications, 2012	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks.	30 marks practical exam of 2 hours duration
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	

Skill Enhancement Courses (SEC)

Name of the course : Web Programming

Sr.No.	Heading	Particulars
1	**Description the course : Including but Not limited to:**	This course covers a range of topics aimed at equipping students with the skills and knowledge needed to create visually appealing, functional, and user-friendly websites. The course provides an insight into emerging technologies to design and develop state of the art web applications using client-side scripting, server-side scripting, and database connectivity. website development includes all related development tasks, such as client-side scripting, server-side scripting, server and network security configuration, eCommerce development, and content management system (CMS) development. Website design is a combination of different elements that work together to create an effective and user-friendly experience. These include the use of typography, layout, color theory, grid systems, motion graphics, and responsive designs.
2	**Vertical :**	Skill Enhancement Course(SEC)
3	**Type :**	Practical
4	**Credits:**	2 credits (1 credit = 30 Hours of Practical work in a semester)
5	**Hours Allotted :**	60 Hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO)** **CO1:** To understand how to use Java script objects and XML. **CO2:** To create well organized, styled web pages **CO3:** To add versatility to a web page using jQuery **CO4:** To deploy a local web server and run a simple web application. **CO5:** To read and process data in MySQL using PHP. **CO6:** To understand usage of Bootstrap	
8	**Course Outcomes (OC)** OC1: Knowledge in different java script objects. OC2: How to use XML with CSS and XSL OC3: validate a form using jQuery OC4: handle asynchronous requests OC4: Write and deploy PHP with database and to simplify web development. OC5: Create a responsive layout using the Bootstrap	

	9	**Modules:** **Module 1:** **1. Write JavaScript code for** a. Demonstrating different JavaScript Objects such as String, RegExp, Math, Date b. Demonstrating different JavaScript Objects such as Window, Navigator, History, Location, Document c. Storing and Retrieving Cookies **2. Create a XML file with Internal / External DTD and display it using** a. CSS b. XSL **3. Write PHP scripts for- Performing certain mathematical operations such as calculating factorial / finding Fibonacci Series / Displaying Prime Numbers in a given range / Evaluating Expressions** **4. Write PHP scripts for** a. Retrieving data from HTML forms b. Working with Arrays c. Working with Files (Reading / Writing) **5. Advanced PHP** a. Write a PHP program to demonstrate use of sessions and cookies. b. Write a PHP program to demonstrate use of filters.	**30 Hrs**
		Module 2 **6. PHP and MySQL** a. Write a PHP program to create: Create a database College b. Create a table Department (Dname, Dno, Number_of_faculty) c. Write a PHP program to create a database named “College”. Create a table named “Student” with following fields (sno, sname, percentage). Insert 3 records of your choice. Display the names of the students whose percentage is between 35 to 75 in a tabular format. **7. Write a PHP program** a. Update rows in a table b. Delete rows from a table **8. Design a PHP page for authenticating a user** **9. Write PHP scripts for** a. Storing and Retrieving Cookies b. Storing and Retrieving Sessions **10. Perform the following using Bootstrap:** a. Create a responsive layout using the Bootstrap grid system b. Create a simple Bootstrap navbar with dropdown menus c. Create a basic Bootstrap form with validation	**30 Hrs**
	10	**Text Books** • HTML 5 Black Book, Covers CSS 3, JavaScript, XML, XHTML, AJAX, PHP and jQuery, 2ed, Dreamtech Press, 2016 • Web Programming and Interactive Technologies, scriptDemics, StarEdu Solutions India, 2018	

	• PHP: A Beginners Guide, Vikram Vaswani, TMH	
11	**Reference Books** • HTML, XHTML, and CSS Bible Fifth Edition, Steven M. Schafer, WILEY, 2011 • Learning PHP, MySQL, JavaScript, CSS & HTML5, Robin Nixon, O'Reilly, 2018 • PHP, MySQL, JavaScript & HTML5 All-in-one for Dummies, Steve Suehring, Janet Valade Wiley, 2018	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks.	30 marks practical exam of 2 hours duration
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	

Name of the Course: PLSQL Practical

Sr.No.	Heading	Particulars	
1	**Description the course : Including but Not limited to:**	PL/SQL ,Oracle's procedural extension language for SQL, allows developers to include procedural language components such as loops, conditional statements and functions. The course enables students with practical experience in using PL/SQL for effective database programming and development.	
2	**Vertical :**	Skill Enhancement Course(SEC)	
3	**Type :**	Practical	
4	**Credits :**	2 credits	
5	**Hours Allotted :**	60 Hours	
6	**Marks Allotted:**	50 Marks	
7	**Course Objectives(CO):** CO 1. Comprehend the basics of PL/SQL and gain knowledge about control and conditional statement in PL/SQL. CO 2. Understand working with cursors,collections and composite data types in PL/SQL. CO 3. Develop expertise in creating stored procedures and functions. CO 4. Explore the use of triggers to automate responses to events within the database. CO 5. Understand the concept of Exception handling. CO 6. Design modular applications using packages.		
8	**Course Outcomes (OC):** OC 1. Use PL/SQL variables ,data types, control and conditional statement. OC 2. Apply sequences and cursor in PL/SQL. OC 3. Work with Collection and Composite Data Types. OC 4. Develop PL/SQL structures like functions, procedures and triggers for database applications. OC 5. Handle errors and exceptions in PL/SQL programs. OC 6. Develop PL/SQL packages.		
9	**Modules:-** **Module 1:**		
	1. **PL/SQL Basics**- Use of variables, Write executable statement, Interacting with Oracle Server, Create anonymous PL/SQL block,Sequences 2. **Control Structure in PL/SQL**- Using while loop, Do loop, For loop, Use of GOTO statement 3. **Create conditional statement using PL/SQL**- Using if statement, Using if else statement, Using elsif ladder, Using case expression. 4. **Create cursor in PL/SQL**- Implicit cursor, Explicit cursor, Parameterized cursor **5. Collection and Composite Data Types** - Working with Collections,Working with Composite Data Types		**30 Hrs**

	Module 2:	
	1. Creation of Procedures in PL/SQL **2. Functions in PL/SQL** 3. **Creation of Trigger –** Create Row level trigger, Create Statement level trigger, Create instead of trigger 4. **Handling exceptions**- Creation of user defined exception, Creation of system defined exception 5. **Creation of Package in PL/SQL**	**30 Hrs**
10	**Text Books** 1. Programming with PL/SQL for Beginners , H. Dand, R. Patil and T. Sambare, X –Team 2. Oracle pl/sql Programming ,Feuerstein, S., & Pribyl, B. ," O'Reilly Media, Inc.".	
11	**Reference Books** 1. Oracle Database PL/SQL Language Reference, 12c Release 1 (12.1) E50727-04 , Alpern, D., Belden, E., Agrawal, S., Baer, H., Castledine, S., Chang, T., & Yang, M. 2. Oracle PL/SQL for dummies , Rosenblum, M., & Dorsey, P. (2006), John Wiley & Sons. 3. PL/SQL Programming ,Ivan Bayross, BPB	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks.	30 marks practical exam of 2 hours duration
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	

MINOR
COURSE
SYLLABUS

AC – 20/04/2024
Item No. – 7.8 Sem. II (5a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of Minor	
Ad- hoc Board of Studies in B. Com. (Management Studies)	
UG First Year Programme	
Semester	**II**
Title of Paper	**Credits 2/ 4**
Industry and Service Management I (Basics of I & S)	2
From the Academic Year	**2024-25**

Sr. No.	Heading	Particulars
1	**Description the course:** **Including but not limited to:**	Management is not only an essence in all fields but it is a prevalent tool in the hands of corporates to governments. From planning to controlling and from budgeting to reporting, all managerial elements are the most essential parts of daily life. So the learners need to know about all aspects from rural development to creating artificial intelligence. They will understand how to develop India, one of the fifth most powerful economies in the world. It is expected that the learners should learn how to develop our economy and management for the future generation from these managerial facets.
2	**Vertical :**	Major/Minor/Open Elective /Skill Enhancement / Ability Enhancement/Indian Knowledge System (Choose By √)
3	**Type :**	Theory / Practical
4	**Credit**:	2 credits
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted**:	50 Marks
7	**Course Objectives:** 1. Differentiate between different types of industries and their defining characteristics 2. Apply industry analysis frameworks to assess competitive landscapes 3. Evaluate the impact of various factors on industry performance and service delivery 4. Design and analyze service models for optimal customer experience.	

8	**Course Outcomes**: 1. Learners should Differentiate between various industry types and their characteristics 2. Identify the key factors influencing industry performance and competition 3. Understand the core principles of service management and customer experience 4. Analyse the challenges and opportunities unique to service businesses

9	**Modules**: -
	Module 1: Basics of Industry Management
	a) Concept of Industry Management, Characteristics of IM, Types, Prose and Corns of Industry Management b) Industry Analysis: Framework of Porter's Five Forces, Industry Life Cycle, Technological advancement, Government regulations
	Module 2: Basics of Service Management
	a) Concept of service and service Management, characteristics of services, importance of service industry b) Scope and Classification of services - Specialized services, Customer services and Industrial services, Reasons for growth of service industry in India.
10	**Text Books:** • *Service Sector in India - recent policy initiative a New century publication 2008* • *A. Vijaykumar Service Sector management - An Indian perspective - Bhattacharjee, Jaico publishing House 2011.*

	Reference Books: • Industry Analysis by Michael E. Porter • Operations Management by Roberta F. Shang and Kenneth S. Meizer • Competitive Strategy by Michael E. Porter • Good Strategy Bad Strategy by Richard Rumelt • *Service marketing - Temani V. K. Prism Publication* • *Management of Service Sector - Bhatia B. S. VP Publication*

12	**Internal Continuous Assessment: 40%**	**External, Semester End Examination Individual Passing in Internal and External 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:** for the final examination **External Paper Pattern (30 Marks)** Q1. Case Study Analysis 10 Marks Q2. Answer the following (Any One) 10 marks A Or B Q3. Answer the following (Any One) 10 Marks A Or B	

Sign of the BOS Chairman **Prof. Dr. Kanchan Fulmali** **BOS in BMS**	**Sign of the Offg. Associate Dean** **Dr. Ravikant Balkrishna Sangurde** **Faculty of Commerce**	**Sign of the Offg. Associate Dean** **Prin. Kishori Bhagat** **Faculty of Management**	**Sign of the Offg. Dean** **Prof. Kavita Laghate** **Faculty of Commerce & Management**

OPEN ELECTIVE SYLLABUS

AC – 20/04/2024
Item No. – 7.7 Sem. II (5a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of Open Electives	
Ad- hoc Board of Studies in B. Com. (Management Studies)	
UG First Year Programme	
Semester	**II**
Title of Paper	**Credits 2/ 4**
Leadership Management	**2**
From the Academic Year	**2024-25**

Sr. No.	Heading	Particulars
1	**Description the course:** **Including but not limited to:**	Management is not only an essence in all fields but it is a prevalent tool in the hands of corporates to governments. From planning to controlling and from budgeting to reporting, all managerial elements are the most essential parts of daily life. So the learners need to know about all aspects from rural development to creating artificial intelligence. They will understand how to develop India, one of the fifth most powerful economies in the world. It is expected that the learners should learn how to develop our economy and management for the future generation from these managerial facets.
2	**Vertical :**	Major/Minor/Open Elective /Skill Enhancement / Ability Enhancement/Indian Knowledge System (Choose By √)
3	**Type :**	Theory / Practical
4	**Credit**:	2 credits
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted**:	50 Marks
7	**Course Objectives**: 1. To acquaint the learners with basic fundamentals of leadership. 2. To orient & apply the theoretical & practical perspective of leadership in the changing dynamics of the society.	

8	**Course Outcomes**: 1. Generate social sensitization among youth of the nation. 2. Students will explore various leadership theories and their applications in real-world scenarios 3. Learner should develop effective communication skills for leading and motivating teams 4. Analyze the dynamics of teamwork and foster a collaborative work environment

9	**Modules**: -
	Module 1: Leaders & Leadership
	a) Definition of Leader & leadership, Traits/qualities of a successful leader, Skill sets required for an effective leader – Role of communication in leadership. b) Leadership Styles – Women as Leaders - Time Management & Leadership – Tools & techniques for effective time management.
	Module 2: Theories & Trends in Leadership
	a) Theories of Leadership – Great Man Theory of Leadership – Trait Theory of Leadership- Transactional & Transformational Leadership Theory. b) Leadership Training – Concept – Need for leadership - Youth Leadership - Principles of youth leadership – Social leadership – Need, Success stories of successful business & social leaders.
10	**Text Books:** ● *Ramaswamy. V S & Namakumari. S, MARKETING MANAGEMENT-PLANNING IMPLEMENTATION AND CONTROL, Macmillan Business Books, New Delihi, 2002, Hall Of India, New Delhi,*

11	**Reference Books:** ● Khanna, S.S. Human resource Management (Text and Cases). S. Chand, New Delhi. ● Chhabra, T.N.,Human Resource Management, Dhanpat Rai & Co., Delhi. ● Aswathappa K.,Human Resource Management ata McGraw, Hill, New Delhi. ● Robbins, Stephen P. Organisational Behaviour. Pearsons Education, New Delhi ● Leadership and Self-Deception: Getting Out of the Box by The Arbinge ● Dare to Lead by Brené Brown ● Multipliers: How the Best Leaders Multiply Intelligence, Influence, and Capability of Others by Liz Wiseman ● The Management Challenge by Manfred Kets de Vries ● High-Output Management by Andrew Grove	
12	**Internal Continuous Assessment: 40%**	**External, Semester End Examination Individual Passing in Internal and External 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:** for the final examination **External Paper Pattern (30 Marks)** Q1. Case Study Analysis 10 Marks Q2. Answer the following (Any One) 10 marks A Or B Q3. Answer the following (Any One) 10 Marks A Or B	

Sign of the BOS Chairman **Prof. Dr. Kanchan Fulmali** **BOS in BMS**	**Sign of the Offg. Associate Dean** **Dr. Ravikant Balkrishna Sangurde** **Faculty of Commerce**	**Sign of the Offg. Associate Dean** **Prin. Kishori Bhagat** **Faculty of Management**	**Sign of the Offg. Dean** **Prof. Kavita Laghate** **Faculty of Commerce & Management**

AC – 20.04.2024
Item No. – 5.10 (N) Sem II (14a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Board of Studies in ENGLISH	
UG First Year Programme	
Semester II	
Title of Paper	**Credits 2/4**
Content Writing	**2**
From the Academic Year	**2024-2025**

Sr. No.	Heading	Particulars
1	**Description the course :** **Including but Not limited to :**	**Content Writing** In the digital age, content writing has emerged as a skill sought after by businesses and other institutions. With the growing impact of online media and social media, there is a need for writers who understand the media, and who possess the language skills required to generate quality content. Through this course, students can explore the potentially lucrative career option of content writing. It will introduce them to the basics of the craft and make them aware of the techniques employed in content writing. This course will also tap into and channelize the students' creative potential while enhancing their employability.
2	**Vertical :**	Open Elective
3	**Type :**	Theory
4	**Credit**:	2 credits (1 credit = 15 Hours for Theory in a semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted**:	50 Marks
7	**Course Objectives:** 1. To introduce learners to the fundamentals of Content Writing 2. To make the learners aware of the various media, including social media, for which content is written 3. To expose the learners to the various techniques of writing and editing content 4. To promote creative thinking and expression by the learners 5. To equip learners for Content Writing as a potential career option	

8	**Course Outcomes**: At the end of the course, learners will: ● Develop an understanding of the basic concepts in Content Writing ● Exhibit the ability to understand and differentiate among the various media for which content is written ● Develop the ability to write content and edit it suitably ● Exercise creative writing skills. ● To develop analytical, researching, and better comprehension skills.
9	**Modules**:-
	Module 1: Introduction to Content Writing (15 lectures)
	● Need/Demand for and Scope of Content Writing ● Role of the Content Writer ● Content Writing in the age of the internet ● Principles of Content Writing ● Process of Content Writing ● Types of Content Writing - emails, blogs, headlines, social media posts ● Ethics of Content Writing - Avoiding plagiarism in Content Writing, Use of Artificial Intelligence (AI)
	Module 2: Process of Content Writing (15 lectures)
	● Understanding the brief, research, and preparation, brainstorming ● Writing emails, blogs, headlines, social media posts ● Types of social media – Facebook, Instagram, x (formerly Twitter) etc. ● Effective use of hashtags, captions, and titles ● New types of content – Topical posts, reels, memes and GIFs ● Editing and Proofreading ● Importance of the readership/ audience
10	**Text Books:** **Not Applicable**

11	**References:** Web link Resources: https://www.mindler.com/blog/how-to-become-a-content-writer-in-india/ https://www.clearvoice.com/blog/10-types-content-writers-use/ https://study.com/articles/What_is_a_Content_Writer.html https://www.entrepreneur.com/article/247908 https://www.locationrebel.com/b2b-writing/ https://wordpress.com/support/prevent-content-theft/ https://blog.unisquareconcepts.com/content-writing/what-is-plagiarism-why-is-it- important-for-blog-writing/ Feldar, Lynda. Writing for the Web: Creating Compelling Web Content Using Words, Pictures, and Sound. New Riders, CA, USA. ISBN-13: 978-0321794437, ISBN- 10: 9780321794437. James, Anthony. Blog Writing: The Content Creation Blueprint. Amazon digital services LLD-KDP print US, 2018. Jones, Colleen. Clout: The Art and Science of Influential Web Content. New Riders, CA, USA. ISBN-13: 978-0321733016, ISBN-10: 0321733010. Nielsen, Jakob and Budiu, Raluca. Mobile Usability. New Riders, CA, USA. ISBN- 13: 978-0321884480, ISBN-10: 0321884485. Redish, Janice. Letting Go Of The Words: Writing Web Content That Works. Morgan Kaufmann. ISBN: 0123859301. Robinson Joseph. Content Writing Step-by-step. Amazon Digital Services LLC--KDP print US, 2020. ISBN: 9798603871929. Williams, Andy. How to Write Great Website Content in 2019. Independently published. ISBN: 1731384467.	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**
13	**Continuous Evaluation through:** ● Writing/editing / analyzing content as per the principles studied (10 marks) ● Participation in classroom activities including presentations, discussions, and writing tasks (formal schedules may be prepared for the same before the semester-end examination.) (05 marks) ● Overall attendance (05 marks) (Percentage of learners' attendance in class to be considered) **Suggested Activities:** ▪ Writing content for various media ▪ Editing content ▪ Analyzing content from popular blogs and social media channels Creating memes, GIFs, reels, or topical posts	

14	**Format of Question Paper:** for the final examination • Q.1. Short notes (2 out of 4) – On Module 1 10 marks • Q.2. A. Writing and editing tasks (2 out of 4) - On Module 2 10 marks o Email o Blog post o Headlines o Editing unseen content provided Q. 3. Answer in 2-3 lines (5 out of 7) On both Modules 10 marks

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**

ABILITY ENHANCEMENT COURSE SYLLABUS

AC – 20.04.2024
Item No. – 5.6 (N) Sem II 1(c)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of AEC	
Board of Studies in Marathi	
UG First Year Programme	
Semester	**II**
Title of Paper	**Credits**
भाषिक कौशल्यांचे उपयोजन – १ (भाषण व निवेदन कौशल्ये)	**2**
From the Academic Year	**2024-25**

Sr. No.	Heading	Particulars
1	**Description the course :** **Including but Not limited to :**	**भाषिक कौशल्यांचे उपयोजन – १** **(भाषण व निवेदन कौशल्ये)** राष्ट्रीय शैक्षणिक धोरण- २०२० नुसार पदवीच्या प्रथम वर्षातील एका सत्रात क्षमता विकसन अभ्यासक्रम (Ability Enhancement Course) या शीर्षकांतर्गत आधुनिक भारतीय भाषेचे अध्ययन अनिवार्य करण्यात आले आहे. आधुनिक भारतीय भाषेचा प्रस्तुत अभ्यासक्रम व अध्ययन प्रामुख्याने भाषा क्षमता विकसन केंद्री असावे, असेही या धोरणात नमूद करण्यात आले आहे. त्यामुळे या अभ्यासपत्रिकेच्या अध्ययनातून विद्यार्थ्यांना भाषिक कौशल्यांचा तपशीलवार परिचय करून देणे तसेच ती कौशल्ये आत्मसात करण्याची संधी उपलब्ध करून देणे अभिप्रेत आहे. या पार्श्वभूमीवर भाषण व निवेदन कौशल्ये या दोन भाषिक कौशल्यांचा परिचय करून देणारी ही अभ्यासपत्रिका आहे. या अभ्यासपत्रिकेच्या अध्ययनातून भाषण व निवेदनाचे स्वरूप, विविध कार्यक्रम व घटना-प्रसंगीची भाषणे व निवेदन, विविध स्वरूपांच्या भाषण व निवेदनाची पूर्वतयारी, त्यासाठी आवश्यक क्षमता व तंत्रांचा व भाषिक-आंगिक-वाचिक कौशल्यांचा परिचय व्हावा, असे अपेक्षित आहे. या अभ्यासपत्रिकेचे अध्ययन करणाऱ्या विद्यार्थ्यांमध्ये भाषण व निवेदनाची जाण व क्षमता विकसित होईल, हे लक्षात घेऊन प्रस्तुत अभ्यासपत्रिकेची आखणी करण्यात आली आहे.
2	**Vertical :**	Ability Enhancement Course
3	**Type :**	Theory + Practical
4	**Credit**:	02 (1 credit = 15 Hours for Theory in a Semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted**:	50 Marks
7	**Course Objectives** : १. विविध कार्यक्रम व घटना-प्रसंगीच्या भाषणाचे स्वरूप समजावून सांगणे. २. विविध घटना प्रसंगीच्या निवेदनाचे स्वरूप समजावून सांगणे. ३. प्रभावी भाषण करण्यासाठी आवश्यक असणाऱ्या क्षमता आणि तंत्रांचा परिचय करून देणे. ४. प्रभावी निवेदन करण्यासाठी आवश्यक असणाऱ्या क्षमता आणि तंत्रांचा परिचय करून देणे. ५. प्रत्यक्ष भाषण आणि निवेदन करण्याची संधी उपलब्ध करून देणे.	
8	**Course Outcomes** : १. विद्यार्थ्यांना विविध कार्यक्रम व घटना-प्रसंगी करावयाच्या भाषणाचे स्वरूप कळेल. २. विद्यार्थ्यांना विविध कार्यक्रम व घटना-प्रसंगी करावयाच्या निवेदनाचे स्वरूप कळेल. ३. विविध कार्यक्रम व घटना-प्रसंगी करावयाच्या भाषणासाठी आवश्यक असणाऱ्या क्षमता आणि तंत्रांचा विद्यार्थ्यांना परिचय होईल. ४. विविध कार्यक्रम व घटना-प्रसंगी करावयाच्या निवेदनासाठी आवश्यक असणाऱ्या क्षमता आणि तंत्रांचा विद्यार्थ्यांना परिचय होईल. ५. विद्यार्थ्यांना प्रत्यक्ष भाषण आणि निवेदन करण्याची संधी उपलब्ध होईल व त्यांच्या क्षमता विकसित होतील.	

9	**Modules (अभ्यास घटक) :**	
	Module 1 (घटक- ०१) : भाषण कौशल्य	
	१. भाषण : संकल्पना, भाषण : स्वरूप वैविध्य, भाषण प्रकार. २. भाषण कौशल्याचे उपयोजन : भाषणाची पूर्वतयारी, भाषण संहिता (लिखित व मौखिक), भाषिक-आंगिक-वाचिक कौशल्ये (६० मिनिटांच्या १५ तासिका, श्रेयांकन - १)	
	Module 2 (घटक- ०२) : निवेदन कौशल्य	
	१. निवेदन : संकल्पना, निवेदनाचे स्वरूप वैविध्य, निवेदनाचे प्रकार. २. निवेदन कौशल्याचे उपयोजन : निवेदनाची पूर्वतयारी, निवेदन संहिता (लिखित व मौखिक), काल-परिस्थिती भान, भाषिक-वाचिक कौशल्ये. (६० मिनिटांच्या १५ तासिका, श्रेयांकन -१)	
10	**Text Books :** N.A.	
11	**Reference Books:** १. केळकर अशोक, वैखरी : भाषा आणि भाषाव्यवहार, स्नेहवर्धन प्रकाशन, पुणे, २०००. २. तौर पृथ्वीराज (संपा०), मराठी भाषिक कौशल्य विकास, अथर्व पब्लिकेशन्स, धुळे, २०१८. ३. नसिराबादकर ल० रा० व्यावहारिक मराठी, भाषा संशोधन केंद्र, कोल्हापूर, २०२३. ४. केळकर अशोक, मध्यमा : भाषा आणि भाषाव्यवहार, *मराठी भाषा आणि वाचिक अभिनय*, मेहता पब्लिशिंग हाऊस, पुणे, १९९६. ५. भाषिक सर्जन आणि उपयोजन, राजन गवस, अरूण शिंदे, गोमटेश्वर पाटील, दर्या प्रकाशन, पुणे, २०१२	
12	**Internal Continuous Assessment: 40%**	**External, Semester End Examination 60% Individual Passing in Internal and External Examination**
13	**Continuous Evaluation through:** अंतर्गत मूल्यमापन : २० गुण चाचणी परीक्षा / मौखिक परीक्षा / प्रकल्पलेखन, नियत कार्य (Assignment) / सादरीकरण/ प्रश्नमंजूषा उपरोक्त कोणत्याही पद्धतीचा अवलंब करून अंतर्गत मूल्यमापन करता येईल. (प्रत्यक्ष उपस्थिती किंवा ऑनलाईन पद्धती)	
14	**Format of Question Paper: (बहिर्गत परीक्षेच्या प्रश्नपत्रिकेचे स्वरूप)** बहिर्गत परीक्षा ३० गुण (वेळ एक तास) ● एकूण तीन प्रश्न विचारावेत. ● प्रत्येक घटकावर अंतर्गत पर्याय असलेले प्रत्येकी १० गुणांचे दोन प्रश्न विचारावेत. ● तिसरा प्रश्न हा घटक १ आणि २ वर आधारित दहा गुणांचा वस्तुनिष्ठ स्वरूपाचा असावा.	

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. – 5.6 (N) Sem II (5a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of AEC	
Board of Studies in HINDI	
UG First Year Programme	
Semester	**II**
Title of Paper	**Credits**
हिन्दी भाषा : कौशल के आधार	**2**
From the Academic Year	**2024-25**

Sr. No.	Heading	Particulars
1	**Description the course :** **Including but Not limited to :**	**हिन्दी भाषा : कौशल के आधार** हिंदी राजभाषा होने के साथ-साथ भारत में बोलीजने वाली एक प्रमुख भाषा है। भारत के अधिकांश निवासी और यहां तक कि भारत के बाहर बसनेवाले भारतवंशी भी अपने दैनिक आपसी वार्तालाप, कार्य-व्यवहार में हिंदी भाषा का ही प्रयोग करते हैं। विश्व की प्रमुख पांच भाषाओं के अंतर्गत हिंदी का अस्तित्व है, इस दृष्टि से हिंदी को लेकर विभिन्न प्रकार के कौशल सीखे और सिखाए जा सकते हैं। विद्यार्थियों के लिए हिंदी एक सामान्य भाषा होने के साथ विशेष भाषा तब बन जाती है जब वह हिंदी के माध्यम से अपने कौशल में अभिवृद्धि करें, हिंदी के माध्यम से रोजगार के कई अवसरों को प्राप्त करें। इस दृष्टि से पाठ्यक्रम अत्यंत लाभवर्धक और उपयोगी सिद्ध होगा। हिंदी भाषा में कौशल विकास की असीम संभावनाएं हैं और कौशल के विभिन्न आयाम जुड़े हुए हैं जो अलग-अलग दिशाओं में देखे जा सकते हैं। पाठ्यक्रम विद्यार्थियों में लेखन, वाचन कौशल की अभिवृद्धि करने के साथ रोजगारपरक अवसर प्रदान करता है।
2	**Vertical :**	Open Elective
3	**Type :**	Theory
4	**Credit**:	2 credits (1 credit = 15 Hours for Theory in a semester)
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted**:	50 Marks
7	**Course Objectives**: (List some of the course objectives) 1. विद्यार्थियों को लेखन, वाचन कौशल का ज्ञान देना एवं रोजगार के अवसरों से जोड़ना। 2. विद्यार्थियों को लेखन, वाचन कौशल से परिचय करते हुए अभिव्यक्ति की शैलियों का विकास करना। 3. विद्यार्थियों को भाषण कला के विविध रूपों को समझाना, मौलिकता में अभिवृद्धि लाना एवं विशेषज्ञता दिलाना। 4. विद्यार्थियों को श्रवण कौशल की विशेषताओं से परिचय कराते हुए श्रवण कौशल के लाभों से अवगत कराना।	

8 **Course Outcomes**: (List some of the course outcomes)

CO-1) विद्यार्थियों को लेखन, वाचन कौशल के ज्ञान प्राप्ति के साथ मौलिक अभिव्यक्ति में बदलाव आएगा।

CO-2) विद्यार्थियों का लेखन, वाचन कौशल द्वारा मानसिक विकास होगा, पठन-शक्ति, शैली का विकास होगा।

CO-3) विद्यार्थियों को लेखन, भाषण कौशल से भाषिक-शक्ति, शैलियों का संवर्धन होगा विशेषज्ञता आएगी।

CO-4) विद्यार्थियों को लेखन, वाचन, श्रवण, भाषण कौशल की विशेषताओं और उपयोगिता का ज्ञान प्राप्त होगा।

9 **Modules**:-

इकाई	पाठ	व्याख्यान संख्या
इकाई -1	1. लेखन कौशल का अर्थ एवं स्वरूप 2. लेखन कौशल की उपयोगिता एवं महत्व 3. लेखन कौशल की विधियाँ 4. लेखन कौशल के भेद एवं विशेषताएँ 5. वाचन कौशल का अर्थ, स्वरूप एवं विशेषताएँ 6. वाचन कौशल की उपयोगिता 7. वाचन कौशल की विधियाँ एवं विशेषताएँ	व्याख्यान- 15 क्रेडिट- 01
इकाई -2	8. भाषण कौशल का अर्थ एवं स्वरूप 9. भाषण कौशल का महत्व एवं उपयोगिता 10. भाषण कौशल की विशेषताएँ 11. भाषण कौशल की विधियाँ 12. श्रवण कौशल का अर्थ एवं स्वरूप 13. श्रवण कौशल का महत्व एवं उपयोगिता 14. श्रवण कौशल की विशेषताएँ	व्याख्यान- 15 क्रेडिट- 01

10 **संदर्भ ग्रंथ सूची** -

1. हिंदी भाषा शिक्षण के विविध आयाम - प्राध्यापक डॉ. राठौर, किनले एडिशन
2. अभिनव पत्र लेखन - डॉ अनिल सिंह
3. हिंदी के व्यावहारिक रूप - डॉ संतोष मोटवानी, परिदृश्य प्रकाशन, मुंबई
4. हिंदी भाषा लेखन कौशल - गुलीबाबा पब्लिकेशन प्राइवेट लिमिटेड

11	**Internal Continuous Assessment: 40%**	**External, Semester End Examination 60% Individual Passing in Internal and External Examination**
12	**Continuous Evaluation through:** **<u>मूल्यांकन प्रारूप</u>** ***आंतरिक मूल्यांकन- 20- अंक*** रचनात्मक कार्य, प्रकल्प इत्यादि- 10 अंक, कक्ष शिक्षण के दौरान सहभागिता इत्यादि - 05 अंक अकादमिक, व्यावसायिक एवं कौशल संवर्धन गतिविधियाँ- 05 अंक कुलयोग -**20 अंक**	
13	**Format of Question Paper:** ***बाह्य मूल्यांकन- लिखित परीक्षा- 30- अंक*** ***परीक्षा अवधि- 01 घंटा*** ***निम्नलिखित तीन में से किन्हीं दो प्रश्नों के उत्तर लिखिए*** ***30 अंक*** कुलयोग- **30 अंक**	

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

VALUE EDUCATION
COURSE
SYLLABUS

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

Mr. Bhooshan Mailkani
Dr. Vinita Pimple

Signature
Prof. Kavita Laghate

Chairman of Board of Studies in Value Education

CO-CURRICULAR COURSE SYLLABUS

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

University of Mumbai

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Academic Authorities,
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Room No. 128, M. G. Road, Fort,
Mumbai – 400 032.
Tel. 022-68320033

Re- accredited with A ++ Grade (CGPA 3.65) by NAAC
Category- I University Status awarded by UGC

No. AAMS_UGS/ICC/2024-25/234 Date: 14th February, 2025

CIRCULAR:-

Attention of all the Principals of the Affiliated Colleges, Directors of the Recognized Institutions and the Head University Departments is invited to this office Circular No. AAMS_UGS/ICC/2024-25/04 dated 11th June, 2023 relating to the NEP UG & PG Syllabus.

They are hereby informed that the recommendations made by the Ad-hoc Board of Studies in N.C.C./N.S.S./Sports Co-Curricular at its meeting held on 06th February, 2025 has been accepted by the Hon'ble Vice Chancellor as per the powers confirmed upon him under Section 12 (7) of the Maharashtra Public Universities Act, 2016 and that in accordance therewith syllabus of **Co-Curricular Course Introduction to Sports, Physical Literacy, Health and Fitness & Yog Sem II** as per appendix (NEP 2020) with effect from the academic year 2024-25.

(The said circular is available on the University's website www.mu.ac.in).

MUMBAI – 400 032
14th February, 2025

(Dr. Prasad Karande)
REGISTRAR

To,

The Principals of the Affiliated Colleges, Directors of the Recognized Institutions and the Head, University Departments.

BOS/06/02/2025

Copy forwarded with Compliments for information to:-

1) The Chairman, Board of Deans,
2) The Dean, Faculty of Interdisciplinary,
3) The Chairman, Ad-hoc Board of Studies in **N.C.C./N.S.S./Sports Co-Curricular**,
4) The Director, Board of Examinations and Evaluation,
5) The Director, Department of Students Development,
6) The Director, Department of Information & Communication Technology,
7) The Director, Centre for Distance and Online Education (CDOE), Vidyanagari,
8) The Deputy Registrar, Admissions, Enrolment, Eligibility & Migration Department (AEM).

Copy forwarded for information and necessary action to :-	
1	The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Dept)(AEM), dr@eligi.mu.ac.in
2	The Deputy Registrar, Result unit, Vidyanagari drresults@exam.mu.ac.in
3	The Deputy Registrar, Marks and Certificate Unit,. Vidyanagari dr.verification@mu.ac.in
4	The Deputy Registrar, Appointment Unit, Vidyanagari dr.appointment@exam.mu.ac.in
5	The Deputy Registrar, CAP Unit, Vidyanagari cap.exam@mu.ac.in
6	The Deputy Registrar, College Affiliations & Development Department (CAD), deputyregistrar.uni@gmail.com
7	The Deputy Registrar, PRO, Fort, (Publication Section), Pro@mu.ac.in
8	The Deputy Registrar, Executive Authorities Section (EA) eau120@fort.mu.ac.in He is requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to the above circular.
9	The Deputy Registrar, Research Administration & Promotion Cell (RAPC), rapc@mu.ac.in
10	The Deputy Registrar, Academic Appointments & Quality Assurance (AAQA) dy.registrar.tau.fort.mu.ac.in ar.tau@fort.mu.ac.in
11	The Deputy Registrar, College Teachers Approval Unit (CTA), concolsection@gmail.com
12	The Deputy Registrars, Finance & Accounts Section, fort draccounts@fort.mu.ac.in
13	The Deputy Registrar, Election Section, Fort drelection@election.mu.ac.in
14	The Assistant Registrar, Administrative Sub-Campus Thane, thanesubcampus@mu.ac.in
15	The Assistant Registrar, School of Engg. & Applied Sciences, Kalyan, ar.seask@mu.ac.in
16	The Assistant Registrar, Ratnagiri Sub-centre, Ratnagiri, ratnagirisubcentre@gmail.com
17	The Director, Centre for Distance and Online Education (CDOE), Vidyanagari, director@idol.mu.ac.in
18	Director, Innovation, Incubation and Linkages, Dr. Sachin Laddha pinkumanno@gmail.com
19	Director, Department of Lifelong Learning and Extension (DLLE), Dlleuniversityofmumbai@gmail.com

Copy for information :-	
1	P.A to Hon'ble Vice-Chancellor, vice-chancellor@mu.ac.in
2	P.A to Pro-Vice-Chancellor pvc@fort.mu.ac.in
3	P.A to Registrar, registrar@fort.mu.ac.in
4	P.A to all Deans of all Faculties
5	P.A to Finance & Account Officers, (F & A.O), camu@accounts.mu.ac.in

To,

1	The Chairman, Board of Deans pvc@fort.mu.ac.in
2	**Faculty of Humanities,** **Dean** 1. Prof.Anil Singh Dranilsingh129@gmail.com **Associate Dean** 2. Dr.Suchitra Naik Naiksuchitra27@gmail.com 3.Prof.Manisha Karne mkarne@economics.mu.ac.in
	Faculty of Commerce & Management, **Dean** 1. Dr.Kavita Laghate kavitalaghate@jbims.mu.ac.in **Associate Dean** 2. Dr.Ravikant Balkrishna Sangurde Ravikant.s.@somaiya.edu 3. Prin.Kishori Bhagat kishoribhagat@rediffmail.com

	Faculty of Science & Technology **Dean** 1. Prof. Shivram Garje ssgarje@chem.mu.ac.in **Associate Dean** 2. Dr. Madhav R. Rajwade Madhavr64@gmail.com 3. Prin. Deven Shah sir.deven@gmail.com
	Faculty of Inter-Disciplinary Studies, **Dean** 1.Dr. Anil K. Singh aksingh@trcl.org.in **Associate Dean** 2.Prin.Chadrashekhar Ashok Chakradeo cachakradeo@gmail.com
3	Chairman, Board of Studies,
4	The Director, Board of Examinations and Evaluation, dboee@exam.mu.ac.in
5	The Director, Board of Students Development, dsd@mu.ac.in@gmail.com DSW direcotr@dsw.mu.ac.in
6	The Director, Department of Information & Communication Technology, director.dict@mu.ac.in

BOS - 06/02/2025
12 (7) of M.P.U.A. 2016
Item No. - 1

As Per NEP 2020

University of Mumbai

Syllabus for Sports Co-Curricular Vertical - 6	
Board of Studies in NCC/NSS/Sports Co-Curricular	
UG First Year Programme	
Semester	**II**
Title of Paper	**Credits**
I) Sports, Physical Literacy, Health and Fitness & Yog	**2**
From the Academic Year	**2024-25**

Semester II

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 understand the importance of Physical Education, Sports, & Physical Activity
2. To increase participation of students in various games and sports and fitness activities
3. To develop the physical as well as mental health through physical activity
4. To create interest regarding sports , physical fitness to inculcate healthy habits for lifelong

1.3 Program outcomes:

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

1. The student will participate in various games, sports and physical activities and they will also learn the technical and tactical experience of it.
2. Students will understand the importance and benefits of participation in any fitness activity or sports.
3. Own choice based activities will be the stress buster for the students and this will inculcate healthy habits in the students
4. Students will able to organize, plan activities and will develop administrative qualities through these events
5. Students acquire the knowledge of Physical Education, Sports and Yoga and understand the purpose and its development.
6. The student learns to plan, organize and execute sports events.
7. Student will learn theoretical and practical aspects of game of his choice to apply at various levels for teaching, learning and coaching purposes efficiently.
8. Student acquires the knowledge of opted games, sports and yoga and also learns the technical and tactical experience of it.
9. Student will learn to apply knowledge of Physical fitness and exercise management to lead better quality life.
10. Students will understand and learn different dimension of active life style.

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1.4 Programme Duration: The structure of the Credit Couse in Sports has two semesters in total covering a period of two years i.e. 2 credits in each semester till the fourth semester as per the guidelines of NEP 2020.

1.5 Modes of Internal & External Evaluation: Students will submit a hard copy of the report of total 60 hours spent for semester II in any physical activities/ training sessions/ Sports events/ yoga/ adventure activities/ any sports/ gym or pilates / to the teacher. Students will be evaluated on the basis of activities participated for the semester II.

1.6 Modules at Glance – Semester II

Module No.	Unit	Content	No. of Practical Hours
1	I	**Importance of Physical Education and Sports**	15
	II	**Participation in any physical activities**	15
2	III	**Volunteering in any sports events or fitness events**	15
	IV	**Participation in University or any other Sports competitions**	15
Total No. of Hours			**60**

Module No.	Unit	Content
1	**I**	**1.1 Importance of Physical Education and Sports & Yoga** • Development of physical health as well as mental health through Physical Activities. • Group Sports & Fitness Activities • Fitness activities conducted by any sports/fitness instructor such as Yoga, Zumba, Aerobics etc.
	II	**1.2 Participation in any Physical activities** • Participation in any sports practice sessions conducted by our college/ any club / any institution • Completion of any Yoga/ Pilates/ Gym course/ any fitness related course • Participation in any other physical activities of the interest of student
2	**III**	**2.1 Volunteering in any sports events or fitness events** • Volunteering done in sports or fitness events organized by the college • Volunteering in any other fitness or sports activities organized by NGO or local clubs
	IV	**2.2 Participation in University or any other Sports competitions** • Participation in University Intercollegiate/ Inter Zonal / West Zone/ All India / National / State tournaments organized by University of Mumbai or State or District Sports Federation • Participation in any other intra college competition organized by college • Participation in any recognized Sports or Fitness competitions

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).

Students will submit a brief report of 60 hours spent for Semester II in any of the physical activities along with geo tagged photo, receipt, sports training session's attendance, course certificates, etc. Report should include the explanation of the following questions. A report can have multiple physical activities done for the completion of 60 hours per semester. For eg. A student can enroll himself/ herself in Yoga/ Gym and any sport simultaneously and can give proof of the attendance for the same in the report. A student must complete 60 hours in any physical activity. Students should also enroll themselves as volunteers for any sports and fitness events held in the college.

1. Why did the student select a physical activity mentioned in the report?
2. What were the benefits and experience after the completion of the 60 hours of physical activity?
3. What were the challenges faced by the student during the activity?
4. Geotagged photos of the activity clicked in the beginning, during and on the last day of the activity.
5. Enrollment receipts, ID card, certificate of the activity.
6. Conclusion remark by the student.

Semester II (50 Marks - 2 Credits)

Internal Evaluation (20 Marks)

Sr. No.	Particulars	Marks
1	Presentation **OR** Project **OR** Assignment **(Students must include the Geo Tagged photos, Enrolment receipt, Certificate etc. in the report)**	10
2	Volunteering in any Sports / Fitness activities conducted by college or local clubs or NGO	10

Semester End Examination (30 Marks)

Question No.	Particulars	Marks
1	VIVA Conducted by teacher/ Sports In charge/ Sports Director regarding participation in Physical / Sports / Fitness activities / Fitness or Yoga Course completed by students **OR** Participation in Sports Competitions Conducted by University at State or National Level (Students who have represented Mumbai University or College at Intercollegiate / Inter Zonal / West Zone Inter University / All Indi Inter University/ International tournament) Students who have represented in the above mentioned competitions should be exempted from VIVA and should be evaluated on the basis of his/ her performance in the above mentioned competitions.	30
Total		30

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. Uppal, A.K.(1992) Physical Fitness. New Delhi: Friend Publication
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

University of Mumbai

Website – mu.ac.in
Email id - dr.aams@fort.mu.ac.in
aams3@mu.ac.in

Academic Authorities,
Meetings &Services (AAMS)
Room No. 128, M. G. Road, Fort,
Mumbai – 400 032.
Tel. 022-68320033

Re- accredited with A ++ Grade (CGPA 3.65) by NAAC
Category- I University Status awarded by UGC

No. AAMS_UGS/ICC/2024-25/ 219 Date: 31st January, 2025

CIRCULAR:-

Attention of all the Principals of the Affiliated Colleges, Directors of the Recognized Institutions and the Head University Departments is invited to this office Circular No. AAMS_UGS/ICC/2024-25/04 dated 11th June, 2023 relating to the NEP UG & PG Syllabus.

They are hereby informed that the recommendations made by the Ad-hoc Board of Studies in N.C.C./N.S.S./Sports Co-Curricular at its meeting held on 23rd November, 2024 and subsequently passed by the Board of Deans at its meeting held on 30th December, 2024 **vide** item No. 8.1 (N) have been accepted by the Academic Council at its meeting held on 27th January, 2025 **vide** item No. 8.1 (N) and that in accordance therewith to introduce 2 Credit Programme Co-Curricular Course Foundation and Exploration of Performing Fine Arts Sem II as per appendix (NEP 2020) with effect from the academic year 2024-25.

(The said circular is available on the University's website www.mu.ac.in).

MUMBAI – 400 032
31st January, 2025

(Dr. Prasad Karande)
REGISTRAR

To,

The Principals of the Affiliated Colleges, Directors of the Recognized Institutions and the Head, University Departments.

AC 8.1 (N) /27/01/2025

Copy forwarded with Compliments for information to:-

1) The Chairman, Board of Deans,
2) The Dean, Faculty of Interdisciplinary,
3) The Chairman, Ad-hoc Board of Studies in **N.C.C./N.S.S./Sports Co-Curricular**,
4) The Director, Board of Examinations and Evaluation,
5) The Director, Department of Students Development,
6) The Director, Department of Information & Communication Technology,
7) The Director, Centre for Distance and Online Education (CDOE), Vidyanagari,
8) The Deputy Registrar, Admissions, Enrolment, Eligibility & Migration Department (AEM).

Copy forwarded for information and necessary action to :-	
1	The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Dept)(AEM), dr@eligi.mu.ac.in
2	The Deputy Registrar, Result unit, Vidyanagari drresults@exam.mu.ac.in
3	The Deputy Registrar, Marks and Certificate Unit,. Vidyanagari dr.verification@mu.ac.in
4	The Deputy Registrar, Appointment Unit, Vidyanagari dr.appointment@exam.mu.ac.in
5	The Deputy Registrar, CAP Unit, Vidyanagari cap.exam@mu.ac.in
6	The Deputy Registrar, College Affiliations & Development Department (CAD), deputyregistrar.uni@gmail.com
7	The Deputy Registrar, PRO, Fort, (Publication Section), Pro@mu.ac.in
8	The Deputy Registrar, Executive Authorities Section (EA) eau120@fort.mu.ac.in He is requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to the above circular.
9	The Deputy Registrar, Research Administration & Promotion Cell (RAPC), rapc@mu.ac.in
10	The Deputy Registrar, Academic Appointments & Quality Assurance (AAQA) dy.registrar.tau.fort.mu.ac.in ar.tau@fort.mu.ac.in
11	The Deputy Registrar, College Teachers Approval Unit (CTA), concolsection@gmail.com
12	The Deputy Registrars, Finance & Accounts Section, fort draccounts@fort.mu.ac.in
13	The Deputy Registrar, Election Section, Fort drelection@election.mu.ac.in
14	The Assistant Registrar, Administrative Sub-Campus Thane, thanesubcampus@mu.ac.in
15	The Assistant Registrar, School of Engg. & Applied Sciences, Kalyan, ar.seask@mu.ac.in
16	The Assistant Registrar, Ratnagiri Sub-centre, Ratnagiri, ratnagirisubcentre@gmail.com
17	The Director, Centre for Distance and Online Education (CDOE), Vidyanagari, director@idol.mu.ac.in
18	Director, Innovation, Incubation and Linkages, Dr. Sachin Laddha pinkumanno@gmail.com
19	Director, Department of Lifelong Learning and Extension (DLLE), Dlleuniversityofmumbai@gmail.com

Copy for information :-	
1	P.A to Hon'ble Vice-Chancellor, vice-chancellor@mu.ac.in
2	P.A to Pro-Vice-Chancellor pvc@fort.mu.ac.in
3	P.A to Registrar, registrar@fort.mu.ac.in
4	P.A to all Deans of all Faculties
5	P.A to Finance & Account Officers, (F & A.O), camu@accounts.mu.ac.in

To,

1	The Chairman, Board of Deans pvc@fort.mu.ac.in
2	**Faculty of Humanities,** **Dean** 1. Prof.Anil Singh Dranilsingh129@gmail.com **Associate Dean** 2. Dr.Suchitra Naik Naiksuchitra27@gmail.com 3.Prof.Manisha Karne mkarne@economics.mu.ac.in
	Faculty of Commerce & Management, **Dean** 1. Dr.Kavita Laghate kavitalaghate@jbims.mu.ac.in **Associate Dean** 2. Dr.Ravikant Balkrishna Sangurde Ravikant.s.@somaiya.edu 3. Prin.Kishori Bhagat kishoribhagat@rediffmail.com

	Faculty of Science & Technology **Dean** 1. Prof. Shivram Garje ssgarje@chem.mu.ac.in **Associate Dean** 2. Dr. Madhav R. Rajwade Madhavr64@gmail.com 3. Prin. Deven Shah sir.deven@gmail.com
	Faculty of Inter-Disciplinary Studies, **Dean** 1.Dr. Anil K. Singh aksingh@trcl.org.in **Associate Dean** 2.Prin.Chadrashekhar Ashok Chakradeo cachakradeo@gmail.com
3	Chairman, Board of Studies,
4	The Director, Board of Examinations and Evaluation, dboee@exam.mu.ac.in
5	The Director, Board of Students Development, dsd@mu.ac.in@gmail.com DSW direcotr@dsw.mu.ac.in
6	The Director, Department of Information & Communication Technology, director.dict@mu.ac.in

AC – 27/01/2025
Item No. – 8.1

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Ad- hoc Board of Studies in N.C.C./N.S.S./Sports Co-Curricular	
UG First Year Programme - Co-Curricular Course	
Semester	**II**
Title of Paper	**Credits**
Foundation and Exploration of Performing Fine Arts	**2**
From the Academic Year	**2024-25**

Semester II
As per NEP 2020

Foundation and Exploration of Performing and Fine Arts

Syllabus for Two Credits Programme

With effect from Academic Year 2024-2025

Aims and Objectives

- To study the foundation and essentials of performing arts.
- To understand the chronicles of Indian Artistry.
- To comprehend the modern art forms.
- To explore various career opportunities in fine arts.

Learning Outcomes

The course will enable the learner to

- Identify and trace the historical evolution of Indian performing and fine arts.
- Analyze the transition from traditional to modern art forms in performing arts.
- Identify and describe a range of career paths in the fine and performing arts.

Modules at Glance

Semester I

Module No.	Unit	Content	No. of Hours
1	I	Foundation of Performing Arts	08
	II	Essential Skill Sets in Performing Arts	07
2	III	Chronicles of Indian Artistry	08
	IV	Contemporary and Modern Art	07
Total No. of Hours			**30**

Module No.	Unit	Content
1	**I**	**1.1 Foundation of Performing Arts** • Introduction to Performing Arts • Historical Evolution and Cultural Significance of Performing Arts • Basic Elements of Performing Arts
	II	**1.2 Essential Skill Sets in Performing Arts** • Character Development and Analysis

		• Emotional Exploration and Expression • Fundamentals of Voice Modulation and Projection • Improvisation Skills • Scene Study and Script Interpretation • Career Options in Performing Arts
2	**III**	**2.1 Chronicles of Indian Artistry** • Indus Valley Civilization • Folk and Tribal Art Forms • Impact of Aesthic Art on Sacred Architecture • Revival and Preservation of Ancient Indian Art
	IV	**2.2 Contemporary and Modern Art** • Modern Trends in Indian Art • Eminent Contemporary Artists of India • Career Options in Fine Arts

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

Semester End Examination (30 Marks)

Question No.	Particulars	Marks
1	**Objective Type Questions (All Units)**	06
2	**Descriptive Question(s) on Unit I** The Question may be divided into sub questions: Attempt any 2 out of 4 (Each of 3 Marks)	06
3	**Descriptive Question(s) on Unit II** The Question may be divided into sub questions: Attempt any 2 out of 4 (Each of 3 Marks)	06
4	**Descriptive Question(s) on Unit III** The Question may be divided into sub questions: Attempt any 2 out of 4 (Each of 3 Marks)	06
5	**Descriptive Question(s) on Unit IV** The Question may be divided into sub questions: Attempt any 2 out of 4 (Each of 3 Marks)	06
Total		30

Reference Books

- *Hennessey, B. (2019). The artist's career handbook: A guide to building your career as a visual artist. Allworth Press.*
- *Kapila, V. (2002). Indian art: A history. Penguin India.*
- *Mitter, P. (2001). Indian art. Oxford University Press.*
- *Chekhov, M. (2002). To the actor: On the technique of acting. Routledge.*
- *Strasberg, L. (1987). A dream of passion: The development of the method. Plume.*
- *Dehejia, V. (1997). Indian art. Phaidon Press.*
- *Nath, A. (2013). Preservation of art and architecture in ancient India. Bharatiya Kala Prakashan.*
- *Chawla, K. (2010). Opportunities in fine arts careers. Vikas Publishing House.*
- *Preece, R. (2011). Careers in art and design. Kogan Page.*

- *Dalmia, Y. (2001).* The making of modern Indian art: The progressives. *Oxford University Press.*

EXAM PATTERN
B.Sc.(I.T.)

QUESTION PAPER PATTERN

(External and Internal)

<table>
<tr><td rowspan="4">I</td><td colspan="2">A Theory of 2 credits is evaluated for a total of 50 Marks</td></tr>
<tr><td>Internal Continuous Assessment:</td><td>40%[20 Marks]</td></tr>
<tr><td colspan="2">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
Total: 20 marks</td></tr>
<tr><td colspan="2">External Semester End Examination: 60%[30 Marks]</td></tr>
<tr><td colspan="3">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)</td></tr>
<tr><td rowspan="4">II</td><td colspan="2">A Practical of 2 credits is evaluated for a total of 50 Marks</td></tr>
<tr><td>Internal Continuous Assessment:</td><td>40%[20 Mrks]</td></tr>
<tr><td colspan="2">Continuous Evaluation through:
Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks.</td></tr>
<tr><td colspan="2">Semester End Examination: 60%[30 Marks]</td></tr>
<tr><td colspan="3">Format of Question Paper: Duration 2 hours. Certified copy of Journal is compulsory to appear for the practical examination(30 Marks)
Practical Slip:
Q1. From Module 1 13 marks
Q2. From Module 2 12marks
Q3. Journal and Viva 05 marks</td></tr>
</table>

Examination and Standard of Passing:

Regulations regarding the scheme of exams, number of credits and standard of passing will be as prescribed by the University of Mumbai.

A student is said to have passed if he/she secures 40% of marks allotted in each head of passing. External evaluation of 30 marks and Internal evaluation of 20 marks are treated as separate heads of passing.

The Ten Point Grading System prescribed by the University of Mumbai will be as follows:

Letter Grades and Grade Points

Semester GPA/ Program CGPA Semester/ Program	**% of Marks**	**Alpha-Sign / Letter GradeResult**	**Grade Points**
9.00-10.00	90.0-100	O (Outstanding)	10
8.00-<9.00	80.0-<90.0	A+ (Excellent)	9
7.00-<8.00	70.0-<80.0	A (Very Good)	8
6.00-<7.00	60.0-<70.0	B+ (Good)	7
5.50-<6.00	55.0-<60.0	B (Above Average)	6
5.00-<5.50	50.0-<55.0	C (Average)	5
4.00-<5.00	40.0-<50.0	P (Pass)	4
Below 4.00	Below 40	F (Fail)	0
Ab (Absent)	-	Absent	0

This syllabus is applicable to IDOL students as well, w.e.f. 2025-26

Appendix B

Justification for B.Sc. (Information Technology)

1.	Necessity for starting the course:	**A large amount of The demand for IT professionals is consistently high, and individuals with a B.Sc in IT can find opportunities in various sectors, including technology companies, healthcare, finance, government, and more.**
2.	Whether the UGC has recommended the course:	**Yes**
3.	Whether all the courses have commenced from the academic year 2024-2025	**To be implemented from 2024-2025 onwards**
4.	The courses started by the University are self-financed, whether adequate number of eligible permanent faculties are available?:	**Self-financed** **Yes. Some experts are called as visiting faculties**
5.	To give details regarding the duration of the Course and is it possible to compress the course?:	**4 years. Not possible to compress the program**
6.	The intake capacity of each course and no. of admissions given in the current academic year:	**60 seats for one division. Admissions will be held from 2024-2025 onwards**
7.	Opportunities of Employability / Employment available after undertaking these courses:	**B.Sc in Information Technology can open up a wide range of opportunities and employment prospects across various industries. Additionally, as technology continues to advance, new roles and specialties within the IT field are continually emerging, providing diverse career paths for IT graduates.**

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