

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):	<p>CO 1. To explain the difference between object oriented programming and procedural programming.</p> <p>CO 2. To understand OOP principles to create modular, reusable, and maintainable code.</p> <p>CO 3. To understand the concept of polymorphism ,virtual functions,inheritance and exception handling.</p> <p>CO 4. To understand file handling concepts using C++.</p>
8	Course Outcomes (OC):	<p>OC 1. Students can explain the key concept of OOP and their application in software development.</p> <p>OC 2. Students can Design and implement classes and objects to model real-world entities.</p> <p>OC 3. Students can apply the concepts of polymorphism, virtual functions, inheritance and exception handling in program.</p> <p>OC 4. Students can apply operator overloading, runtime polymorphism, generic Programming</p> <p>OC 5. Students can implement file handling concepts in program</p>
9	Modules:- Module 1:	<p>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.</p> <p>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.</p>
		15 Hrs

	<p>3. Constructors and Destructors: Introduction, Default Constructor, Parameterized Constructor and examples, Destructors.</p> <p>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.</p>	
	Module 2:	
	<p>5. Polymorphism: Concept of function overloading, overloaded operators, overloading unary and binary operators.</p> <p>6. Virtual Functions: Introduction and need, Pure Virtual Functions, this Pointer, abstract classes, virtual destructors.</p> <p>7. Exception Handling: Introduction, Exception Handling Mechanism, Concept of throw & catch with example.</p> <p>8. Working with Files: Introduction, File Operations, Various File Modes, File Pointer and their Manipulation.</p>	15 Hrs
10	Text Books <ol style="list-style-type: none"> Object-oriented Programming C++, Hari Mohan Pandey , Laxmi Publications C++ Programming: An Object-Oriented Approach, Behrouz A. Forouzan, Richard F. Gilberg , McGraw-Hill Education C++ How to Program , Paul Deitel, Harvey Deitel 	
11	Reference Books <ol style="list-style-type: none"> Object Oriented Programming in C++ , E Balagurusamy Object-Oriented Programming in C++ , Robert Lafore, Pearson Education. Programming with ANSI C++ , Bhushan Trivedi 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 pages.	HTML
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-Appling 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, onDbIcIck, 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 <ol style="list-style-type: none"> 1. Step by Step HTML5 by Faithe Wempen, Microsoft Press, 2011 2. The Complete Reference HTML & CSS, Thomas A. Powell. McGrawHill, 5th 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, 2nd Kindle Edition, by DT Editorial Services 6. JSON at work, Tom MArrs, O'REILLY, First edition, 2017 	
11	Reference Books <ol style="list-style-type: none"> 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
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Name of the Course: Major Practical II

Sr.No.	Heading	Particulars
1	Description the course : Including but Not limited to:	Object Oriented Programming using 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. Where readNo() 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 its sum

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 static function

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 an 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 an 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
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30 Hrs

	Advanced Web	75
Hillary	Operating System	60
	Advanced Web	80
Lary	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

Sign In	
E-mail addresss	<input type="text"/>
Password	<input type="password"/>
<input type="button" value="Sign In"/>	

- 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.

	<p>8. Java Script : Handling the events</p> <p>a. Using java script, demonstrate the use of onAbort, onBlur, onChange, onClick, onDbClick events</p> <p>b. Using java script, demonstrate the use of onDragDrop, onError, onFocus events</p> <p>c. Using java script, demonstrate the use of onKeyDown, onKeyPress, onKeyUp, onLoad, onReset, onResize, onSelect, onSubmit, onUnload events</p> <p>d. Using java script, demonstrate the use of onMouseDown, onMouseMove, onMouseOut, onMouseOver, onMouseUp, onMouse events.</p> <p>e. Using java script, demonstrate the use of onKeyDown, onKeyPress, onKeyUp, onLoad, onReset, onResize, onSelect, onSubmit, onUnload events</p> <p>9. JQuery</p> <p>a. use JQuery effect in page</p> <p>b. Write a jQuery Code to find the data passed with the on() method for each element.</p> <p>c. Use JQuery Events</p> <p>d. JQuery traversal and manipulation</p> <p>10. JSON Basics and Working with JSON</p> <p>a. Creating JSON</p> <p>b. Parsing JSON</p> <p>c. Persisting JSON</p> <p>d. Demonstrate use of JSON objects in array, print array on web page using document object</p> <p>e. Read data from json file and convert it into a JavaScript object and display the data in web page using document object</p>	
<p>10</p>	<p>Text Books</p> <ol style="list-style-type: none"> Object-oriented Programming C++, Hari Mohan Pandey C++ Programming: An Object-Oriented Approach, Behrouz A. Forouzan, Richard F. Gilberg C++ How to Program, Paul Deitel, Harvey Deitel Step by Step HTML5, Faithe Wempen, Microsoft Press, 2011 The Complete Reference HTML & CSS, Thomas A. Powell. McGraw Hill, 5th Edition, 2010 	
<p>11</p>	<p>Reference Books</p> <ol style="list-style-type: none"> Object Oriented Programming in C++, E Balagurusamy Object-Oriented Programming in C++ by Robert Lafore Programming with ANSI C++, Bhushan Trivedi Demystified Object- Oriented Programming with C++, Dorothy R. Kirk Learning Web Design A Beginner's Guide to Html, CSS, JavaScript, And Web Graphics, Jennifer Niederst Robbins, O'Reilly, 5th Edition, 2018. "Web Enabled Commercial Applications Development using HTML, DHTML, Javascript, Perl CGI", Ivan Bayross, BPB, 2004 HTML 5 for Web Designers (By: Jeremy Keith) - http:// freepdf-books.com 	
<p>12</p>	<p>Internal Continuous Assessment: 40%</p>	<p>Semester End Examination: 60%</p>

13	<p>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.</p>	30 marks practical exam of 2 hours duration
14	<p>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</p>	

Vocational Skill Courses (VSC)

Name of the Course: Assembly Language Programming

Sr.No	Heading	Particulars
1	Description the course : Including but Not limited to:	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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</p>

		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 4002H and 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 1'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 1'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 1, 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 8-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	<p>Text Books</p> <p>1. 8080A/8085 Assembly Language Programming, Lance A. Leventhel, Osborne, 1978</p>
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11	Reference Books 1. Microprocessors Architecture, Programming and Applications with the 8085, Fifth Edition, Penram Publications, 2012
12	Internal Continuous Assessment: 40%
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.
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:	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
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	

<p>9</p>	<p>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.</p>	<p>30 Hrs</p>
	<p>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</p>	<p>30 Hrs</p>
<p>10</p>	<p>Text Books</p> <ul style="list-style-type: none"> • 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 	

	<ul style="list-style-type: none"> • PHP: A Beginners Guide, Vikram Vaswani, TMH 	
11	Reference Books <ul style="list-style-type: none"> • 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	

QUESTION PAPER PATTERN

(External and Internal)

I	A Theory of 2 credits is evaluated for a total of 50 Marks	
	Internal Continuous Assessment:	40%[20 Marks]
	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	
	External Semester End Examination: 60%[30 Marks]	
	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)	
II	A Practical of 2 credits is evaluated for a total of 50 Marks	
	Internal Continuous Assessment:	40%[20 Mrks]
	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.	
	Semester End Examination: 60%[30 Marks]	
	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	

Examination and Standard of Passing:

Regulations regarding the scheme of exams, number of credits and standard of passing will be asprescribed 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

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

As Per NEP 2020

University of Mumbai



Syllabus for Basket of Minor	
Board of Studies in Data Science	
UG First Year Programme	
Semester	II
Title of Paper	Credits 2/ 4
I. DS_R Programming (Minor)	2
From the Academic Year	2024-2025

Name of the Course: DS_R Programming

Sr.No.	Heading	Particulars
1	Description the course : Including but Not limited to:	R-Programming is a course that provides a comprehensive introduction to the R programming language, widely used in data analysis, statistics, and machine learning. The course covers the basics of R programming, including its user interface, objects, functions, writing own functions, and scripts. Students will learn how to use packages and help pages in R programming and work with R objects such as atomic vectors, matrices, arrays, lists, and data frames. They will also learn about different data subsetting and manipulation techniques and get familiar with working with different environments and scoping rules. The course includes working with programs, strategies, if statements, else statements, lookup tables, code comments, and S3 systems. Students will gain an understanding of loops, expected values, expand.grid, repeat loops, and how to write fast, vectorized code. The course will also cover the basic applications of R programming for data science, and machine learning
2	Vertical :	Minor
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:	<p>CO 1. To provide students with a strong foundation in R programming basics, including its user interface, objects, functions, and scripts.</p> <p>CO 2. To help students master the use of R packages and help pages to carry out data analysis tasks more efficiently.</p> <p>CO 3. To enable students to work with R objects such as atomic vectors, matrices, arrays, lists, data frames, and understand loading and saving data for effective analysis.</p> <p>CO 4. To teach students how to use R notation techniques such as selecting values, shuffling a deck, and modulating values and different data subsetting techniques.</p> <p>CO 5. To enable students to work with R programming environments, including their introduction, different kinds of scoping rules, assignment,</p>

	evaluation, closures, and how to debug them more effectively.
8	<p>Course Outcomes:</p> <p>OC 1. Students will have the ability to write their own functions, manage arguments and understand scripts in the R programming language.</p> <p>OC 2. Students will proficiently use packages and help pages in R programming for the better resolution of the challenges of data analysis.</p> <p>OC 3. Students will gain a strong foundation in R objects, different data frames, working with loading data, saving data, and data coercions.</p> <p>OC 4. Students will have a comprehensive understanding of R notation techniques such as selecting values, shuffling a deck, and modulating values and different data subsetting techniques.</p> <p>OC 5. Students will be able to work effectively in R programming environments, including their introduction, different kinds of scoping rules, assignment, evaluation, closures, and debugging.</p> <p>OC 6. Students will understand programs in R programming that includes strategies for different tasks while working with if statements, else statements lookup tables, and code comments.</p> <p>OC 7. Students will have the ability to understand S3 systems, attributes, generic functions, methods, classes, and S3 and R5 debugging implications.</p> <p>OC 8. Students will have the ability to use different loops and functions like expand.grid and able to write fast loops, understand how vectorized code works, and will apply it in practice while working with large datasets.</p>
9	<p>Modules:-</p> <p>Module 1: (15 hours)</p> <ol style="list-style-type: none"> R Basics: The R User interface, objects, functions, sample with replacement, writing own functions, arguments, scripts Packages and Help pages: Packages, Help packages R Objects: Atomic Vectors, Attributes, Matrices, Arrays, Class, Coercion, Lists, data frames, loading data, saving data R Notation: Selecting values, deal a card, shuffling a deck, dollar signs and double brackets Modifying Values: Changing values in place, logical subsetting, missing information Environments: Introduction, working with environments, scoping rules, assignment, evaluation, closures <p>Module 2: (15 hours)</p> <ol style="list-style-type: none"> Programs: Strategy, if statements, else statements, lookup tables, code comments S3: The S3 system, attributes, generic functions, methods, classes, S3 and debugging, S4 and R5 Loops: Expected values, expand.grid, for loops, while loops, repeat loops, Speed: Vectorized code, how to vectorize? writing fast loops, vectorized code in practice R for data science R for machine learning

10	Text and References: 1. Hands-On Programming with R, Garrett Grolemond, O' Reilly, 2014 2. R Programming: A Step-by-Step Guide for Absolute Beginners. Daniel Bell, Guzzler Media, 2020	
11	In 10 above	
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)	

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

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

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

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

As Per NEP 2020

University of Mumbai



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

OPEN ELECTIVE – II

Programme Name: B.Com. (Business Economics)

Course Name: Elementary Mathematics for Economics

Total Credit: 4

University Assessment: 100 Marks

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

Course Objectives:

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

Course Outcome:

CO1: Demonstrate a sound understanding of fundamental mathematical concepts.

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

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

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

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

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

Reference Books:

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

INTERNAL CONTINUOUS ASSESSMENT: 40%

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

SEMESTER END EXAMINATION: 60%

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

**Sign of the
Offg. Dean
Prof. Kavita Laghate
Faculty of Commerce
& Management**

**Sign of the
Offg. Associate Dean
Dr. Ravikant
Balkrishna Sangurde
Faculty of Commerce**

**Sign of the
Offg. Associate
Dean
Prin. Kishori Bhagat
Faculty of
Management**

**Sign of the
Offg. Dean
Prof. Kavita Laghate
Faculty of
Commerce &
Management**

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

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
लेखन कौशल्ये १- (कार्यालयीन लेखनव्यवहार आणि पत्रव्यवहार)	2
From the Academic Year	2024-25

Sr. No.	Heading	Particulars
1	Description the course : Including but Not limited to :	<p style="text-align: center;">लेखन कौशल्ये१- (कार्यालयीन लेखनव्यवहार आणि पत्रव्यवहार)</p> <p>लेखन ओळख ते लेखन कौशल्य हा बराच मोठा प्रवास आहे. वाचन आणि लेखनाच्या सरावाने, लेखन कौशल्य विकसित करता येते. बहुतेक वेळा आपण मिळवलेले ज्ञान हे लिखित स्वरूपात मांडावे लागते. त्यासाठी आपण लेखन कौशल्याचे योग्य उपयोजन करतो. लेखन म्हणजे मजकूर तंतोतंत उतरवणे नव्हे. एखादे निवेदन, वृत्त, निबंध, पुस्तकाची टिपणे, अर्ज यांसाठी लेखन आवश्यक असते. कार्यालयीन पत्रव्यवहार, कार्यवृत्ते, नोंदी, जाहिरात, टिप्पणी ही सर्व उपयोजित लेखन कौशल्ये आहेत. कार्यालयीन पत्रव्यवहार करणे हे एक वेगळ्या प्रकारचे कौशल्य आहे. त्यातील काही उपयोजन कौशल्यांचा विचार या अभ्यासपत्रिकेत अपेक्षित आहे. कार्यालयीन लेखन व्यवहार आणि पत्रव्यवहार या अभ्यासपत्रिकेत शिकविला जाईल.</p>
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
6	Marks Allotted:	50
7	Course Objectives: (List some of the course objectives) १. कार्यालयीन लेखन व्यवहार स्वरूप समजावून सांगणे. २. कार्यालयीन पत्रव्यवहाराचे स्वरूप समजावून सांगणे. ३. प्रभावी कार्यालयीन लेखनासाठी आवश्यक असणाऱ्या क्षमता आणि तंत्रांचा परिचय करून देणे.	
8	Course Outcomes: (List some of the course outcomes) १. विद्यार्थ्यांना कार्यालयीन लेखन व्यवहाराचे स्वरूप समजेल. २. विद्यार्थ्यांना कार्यालयीन पत्रव्यवहाराचे स्वरूप समजेल. ३. प्रभावी कार्यालयीन लेखनासाठी आवश्यक असणाऱ्या तंत्रांचा विद्यार्थ्यांना परिचय होईल.	
9	Modules:- Per credit One module can be created घटक एक घटक एक : कार्यालयीन लेखनव्यवहार - १. जाहीर निवेदन आणि माहितीपत्रक २. इतिवृत्त लेखन ३. टिप्पणी लेखन (६० मिनिटांच्या १५ तासिका) श्रेयांकन १.	

घटक दोन : घटक दोन : पत्रव्यवहार -२	
<p>१.कार्यालयीन/प्रशासनिक पत्र</p> <p>२. नोकरीसाठी अर्जलेखन</p> <p>३. पत्रात्मक लेखन : नवी रूपे (शुभेच्छा, निमंत्रण)</p> <p>(६० मिनिटांच्या १५ तासिका) श्रेयांकन १.</p>	
10	Text Books: N.A.
11	Reference Books: संदर्भसूची : <ol style="list-style-type: none"> १. प्रशासनिक लेखन, भाषा संचालनालय, महाराष्ट्र शासन, मुंबई, १९६६ २. भाषिक सर्जन आणि उपयोजन, राजन गवस, अरुण शिंदे, गोमटेश्वर पाटील, दर्या प्रकाशन, पुणे, २०१२ ३. परब प्रकाश, व्यावहारिक मराठी, मिथुन प्रकाशन, डोंबिवली पूर्व, मुंबई, १९८९ ४. नाईक सदानंद, राजभाषा मराठी, व्यावहारिक मराठी, प्रका-नागरी सेवा प्रबोधिनी, मुंबई, २००२ ५. तावरे स्नेहल (संपा.), व्यावहारिक मराठी, स्नेहवर्धन प्रकाशन, पुणे, चौथी आवृत्ती, २०११ ६. केतकी मोडक, संतोष शेणई, सुजाता शेणई (संपा.), उपयोजित मराठी, पद्मगंधा प्रकाशन, २०१२ ७. नसीराबादकर ल. रा., व्यवहारिक मराठी, भाषा विकास संशोधन संस्था, कोल्हापूर २०२३
12	Internal Continuous Assessment: 40%
	External, Semester End Examination 60% Individual Passing in Internal and External Examination
13	Continuous Evaluation through: Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc. (at least 3)
	अंतर्गत चाचणी परीक्षा : २० गुण चाचणी परीक्षा /लेखी/ ऑनलाईन/ प्रकल्प/ गृहपाठ - २० गुण
14	Format of Question Paper: for the final examination बहिर्गत परीक्षा ३० गुण (वेळ एक तास) <ul style="list-style-type: none"> ● एकूण तीन प्रश्न विचारावेत. ● प्रत्येक घटकावर अंतर्गत पर्याय असलेले प्रत्येकी १० गुणांचे दोन प्रश्न विचारावेत. ● तिसरा प्रश्न हा घटक १ आणि २ वर आधारित अंतर्गत पर्यायासह दोन टीपा/लघुप्रश्न स्वरूपाचा असावा.

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Dean
Name of the Faculty

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Name of the Offg. Dean
Name of the Faculty

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 :	<p style="text-align: center;">हिन्दी भाषा : कौशल के आधार</p> <p>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।</p>
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) <ol style="list-style-type: none"> 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	<p>Course Outcomes: (List some of the course outcomes)</p> <p>CO-1) विद्यार्थियों को लेखन, वाचन कौशल के ज्ञान प्राप्ति के साथ मौलिक अभिव्यक्ति में बदलाव आएगा।</p> <p>CO-2) विद्यार्थियों का लेखन, वाचन कौशल द्वारा मानसिक विकास होगा, पठन-शक्ति, शैली का विकास होगा।</p> <p>CO-3) विद्यार्थियों को लेखन, भाषण कौशल से भाषिक-शक्ति, शैलियों का संवर्धन होगा विशेषज्ञता आएगी।</p> <p>CO-4) विद्यार्थियों को लेखन, वाचन, श्रवण, भाषण कौशल की विशेषताओं और उपयोगिता का ज्ञान प्राप्त होगा।</p>									
9	<p>Modules:-</p> <table border="1" data-bbox="248 695 1518 1440"> <thead> <tr> <th data-bbox="248 695 467 751">इकाई</th> <th data-bbox="467 695 1255 751">पाठ</th> <th data-bbox="1255 695 1518 751">व्याख्यान संख्या</th> </tr> </thead> <tbody> <tr> <td data-bbox="248 751 467 1098">इकाई -1</td> <td data-bbox="467 751 1255 1098"> 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 </td> <td data-bbox="1255 751 1518 1098">व्याख्यान- 15 क्रेडिट- 01</td> </tr> <tr> <td data-bbox="248 1098 467 1440">इकाई -2</td> <td data-bbox="467 1098 1255 1440"> 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 </td> <td data-bbox="1255 1098 1518 1440">व्याख्यान- 15 क्रेडिट- 01</td> </tr> </tbody> </table>	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
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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	<p>संदर्भ ग्रंथ सूची -</p> <ol style="list-style-type: none"> 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	<p>Continuous Evaluation through: <u>मूल्यांकन प्रारूप</u> आंतरिक मूल्यांकन- 20- अंक</p> <p>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</p>	
13	<p>Format of Question Paper: <u>बाह्य मूल्यांकन- लिखित परीक्षा- 30- अंक</u></p> <p><u>निम्नलिखित तीन में से किन्हीं दो प्रश्नों के उत्तर लिखिए</u></p>	<p>परीक्षा अवधि- 01 घंटा</p> <p><u>30 अंक</u></p> <p>कुलयोग- 30 अंक</p>



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Dean
Name of the Faculty

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Name of the Faculty

As Per NEP 2020

University of Mumbai



Title of the Course Indian Constitution

Semester – Sem I

Syllabus for Two Credit

(With effect from the academic year 2024-25)

PROGRAM	BA /BSc/ BCOm
SEMESTER	I
COURSE TITLE	Indian Constitution
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
<ul style="list-style-type: none"> • Learners will be enabled to understand the basics of Indian Constitution. • Significantly the learners will understand the significance and functionality of Fundamental Rights, Fundamental Duties and Directive Principles. • The learners will be enabled to understand the role of Indian Judiciary in Protecting Fundamental Rights.
COURSE OUTCOME
CO1: Learners will be empowered to understand the basic structure, nature of Indian Constitution
CO2: Learners will understand their and other citizens fundamental rights and duties towards the nation.
CO3: Learners will be equipped with the role of Indian Judiciary in protecting Fundamental Rights of citizens and will be able to describe areas of criminal justice, law and society through a critical analysis of the subject.
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ORGANISATION OF THE COURSE

UNIT NO	COURSE UNITS	HOURS PER WEEK
1	Indian Constitution: Characteristics	10
2	Fundamental Rights, Fundamental Duties and Directive Principles of State Policy	10
3	Judiciary: Introduction to Supreme Court, Powers, and Functions of the Supreme Court Introduction to High Court Powers and Functions of the High Court Public Interest Litigation, Judicial Activism	10
TOTAL HOURS		30

COURSE DESIGN

UNIT TITLE	OUTCOME	DESCRIPTION	PEDAGOGICAL APPROACH
INTRODUCTION TO CONSTITUTION	Learners will understand the importance of preamble in the implementation of constitution.	Constitution meaning of the term, Significance of constitution, Preamble, Features of constitution and basic structure of Indian Constitution	Chalk and talk method, Case laws
FUNDAMENTAL RIGHTS, FUNDAMENTAL DUTIES AND DIRECTIVE PRINCIPLES	Learners will understand the fundamental rights and duties towards the nation and people.	Fundamental rights (Art 12 to Art 35), Fundamental Duties and Directive Principles of state policy	Chalk and talk method, Case laws
JUDICIARY	Learners will be able to summarize the process of judicial review and identify criteria used by courts to evaluate the constitutionality of criminal law of India.	Introduction to Supreme Court, Powers, and Functions of the Supreme Court, Introduction to High Court, Powers and Functions of the High Court, Public Interest Litigation and Judicial Activism.	Chalk and talk method, Case laws.

CONTINUOUS ASSESSMENT TESTS (CAT) & SEMESTER END EXAMINATION (SEE)			
NATURE OF ASSESSMENT	MARKS	METHODOLOGY	COURSE OUTCOME
CAT 1 *	10	Online Quiz, Open book test, Class test, Assignment and Viva	CO1
CAT 2 *	10	Online Quiz, Open book test, Class test, Assignment and Viva	CO1, CO2
CAT 3 *	10	Online Quiz, Open book test, Class test, Assignment and Viva	CO3
SEE	30	Four 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

*Any Two for 20 marks

ESSENTIAL READINGS	Durga Das Basu- Introduction to the Constitution of India
ADDITIONAL READINGS	J. N. Pande – Constitution of India

Syllabus Drafting Committee
 Dr. Swati Rautela Professor and Head Department of Law
 Dr. Rajeshri Varhadi Professor and In charge Director
 Dr. Sanjay Jadhav Associate Professor
 Prof. Uma Nehare Assistant Professor

Signature:
Prof. Kavita Laghate
 Chairman of Board of Studies in Value Education

AC –28/06/2024

Item No. – 5.7 (N)

University of Mumbai



Syllabus for Extension Work in Vertical VI - CC

Board of Studies in Extension Work

UG First Year Program

Semester

II

Title of Paper

Credit

Extension Work

2

From the Academic Year

2024-25

Introduction

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

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

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

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

Aim of Extension Work under NEP:

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

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

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

Key objectives of Extension Work under NEP:

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

Extension Work Activities:

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

THE EXTENSION DIMENSION (Reach to Unreached)

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

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

I) Vocational Career Oriented Projects

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

II) Community Oriented Projects

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

Given below are the activities / programs to be conducted by the colleges as a part of Extension Work as enlisted topics. The learner will focus on enlisted topics and participate in following activities during Semester II in this academic year.

ACTIVITIES FOR SEMESTER II = 2 Credits

Sr. No.	Unit	No. of Lectures
1.	<p><u>Organising & Participation in Training Session</u></p> <p>Every learner should attend the orientation / training session organised by their college for orientation of annual extension work program. Attendance is compulsory. In this session the learners will be oriented about the activities to be conducted during the semester followed by question-and-answer session. The learner must read resource material and guideline carefully and plan his / her activities for the semester during academic year.</p>	2 Lectures
2.	<p><u>Participation in Project /Activities</u> (as given below)</p> <p>In this session learners will be oriented about any 5 Topics selected by college (preferably which are not taken in Semester 1) for awareness under Extension Work. The college may select more than 5 topics if the enrolment of learners is more than 200. The learners will participate in activities based on these topics selected by college.)</p> <ol style="list-style-type: none"> 1. Maharashtra Policy for women. 2. Status of women in India. / Women achievers of modern India 3. Banking procedures. 4. Legal procedures. 5. Violence against women / Laws protecting women/ Inheritance laws. 6. Child Labour. 7. Environment- pollution and its effect / Save Trees and Natural Resources 8. Water Harvesting. 	22 Lectures including guidance for practice session, preparations and actual conduct of program.

9. Pollution (Noise pollution / industrial pollution etc.)
10. Issues related to LGBT.
11. HIV –AIDS / Covid 19 etc.
12. Consumer Awareness (Act 2019), Need and Importance
13. E-waste management
14. Stress and Harassment.
15. Global warming
16. Importance of Ethics and Values
17. Old Age Homes / Status of Senior Citizens
18. Distance Education Opportunities
19. First Aid Awareness
20. Voting rights / Human Rights

Learners will be oriented and motivated to participate in minimum four activities given below based on above topics:

1. Seminar /conferences, discussion sessions, debate, rallies
2. Competitions (essay/creative writing, elocution, poster/ video/ rangoli making etc. – Minimum 2 competitions)
3. Extension Work group activities of other groups in the college.
4. Prepare your PPT, design your posters / charts.
5. Survey / short term academic courses / innovative programs.
6. Field visit / field work / case studies / developing innovative engineering models / projects
7. Participation in Street Plays
8. Event / hospitality / human resource management program /assignment
9. Novel formulation development (pharmacy),
10. Self-medication survey (pharmacy),

Learners are required to prepare short videos (duration 3-4 minutes) of the activity where the college will organize such competition.

	<p>The learners will be oriented about various career development opportunities in University of Mumbai, and schemes of student development by the Government.</p> <p><u>Learners will be oriented and given an opportunity for:</u></p> <ul style="list-style-type: none"> - Script writing / Direction for street play. - Composing / Singing (Songs, Powada) - Playing Musical Instrument during the event. - Participation in various college and university level competitions. - Participate in Cultural Performance / Organising Committee for Festival / Programs / Event Management. 	
3	<p><u>Participation Video / Stage Performance / Assignment / Report Writing and submission</u></p> <ul style="list-style-type: none"> - Present your report / video during the college program. - All learners enrolled in Extension Work can make activity video or stage performance (3-4 minutes duration) creating awareness about any social issues / topics enlisted here followed by assignment / report writing as per format. - College will organise a program in the hall / classroom for all learners and give them an opportunity to present their assignment / report with PPT / video presentation followed by question answer session / test / interview by the college. 	6 Lectures including guidance for practice session, preparations and actual conduct of program.

Evaluation Pattern

Internal Assessment

Sr. No.	Assessment Criteria	Maximum Marks
1	Attendance, punctuality, completion of hours, participation in programs, presentations and feedback.	10
2	Proficiency in required skill sets, overall performance, submission of written report / assignments and expected development.	10
	Total	20 Marks

External Assessment

(Based on Extension Work guidelines and five enlisted topics chosen by the college.)

Question Paper Pattern

Time: 1.00 Hours

Total Marks 30

Instructions: 1. All questions are compulsory.

2. Figures to the right indicate maximum marks.

Q.1. Rewrite the following statement by choosing correct alternative given below. - 06 Marks
(6 statements. One mark each)

Q.2. Write short Notes On (Any Two out of Four) - 06 Marks

Q.3. Answer the following questions. (Any Three out of Five) - 18 Marks

References:

- Guidelines for Extension Work published by Department of Lifelong Learning and Extension, University of Mumbai.
- Agricultural Extension: Principles and Methods" by "Ray V. Herren (2008)
- Agricultural Extension by G. S. R. Murthy (2010)
- Introduction to Agricultural Extension by S. S. Acharya (2015)
- Agricultural Extension in Developing Countries by R. W. Snapp (2012)
- Extension Communication and Management by B. M. Panda (2016)

**Sign of BOS Chairman
Prof. Kunal Jadhav
Ad-hoc Board of
Studies in Extension
Work**

**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**



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
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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 :-

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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

	<p>Faculty of Science & Technology</p> <p>Dean</p> <p>1. Prof. Shivram Garje ssgarje@chem.mu.ac.in</p> <p>Associate Dean</p> <p>2. Dr. Madhav R. Rajwade Madhavr64@gmail.com</p> <p>3. Prin. Deven Shah sir.deven@gmail.com</p>
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3	Chairman, Board of Studies,
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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

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.

1.4 Programme Duration: The structure of the Credit Course 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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

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Category- I University Status awarded by UGC

No. AAMS_UGS/ICC/2024-25/ 2\9

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
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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

	<p>Faculty of Science & Technology</p> <p>Dean</p> <p>1. Prof. Shivram Garje ssgarje@chem.mu.ac.in</p> <p>Associate Dean</p> <p>2. Dr. Madhav R. Rajwade Madhavr64@gmail.com</p> <p>3. Prin. Deven Shah sir.deven@gmail.com</p>
	<p>Faculty of Inter-Disciplinary Studies,</p> <p>Dean</p> <p>1. Dr. Anil K. Singh aksingh@trcl.org.in</p> <p>Associate Dean</p> <p>2. Prin. Chadrashekhhar Ashok Chakradeo cachakradeo@gmail.com</p>
3	Chairman, Board of Studies,
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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 <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• Character Development and Analysis

		<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Indus Valley Civilization • Folk and Tribal Art Forms • Impact of Aesthetic Art on Sacred Architecture • Revival and Preservation of Ancient Indian Art
	IV	2.2 Contemporary and Modern Art <ul style="list-style-type: none"> • 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.*

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	<p>Leadership & Personality development: Meaning, definition, qualities, and characteristics of a Leader. Meaning of personality, Dimensions of personality. Personality and Leadership nexus.</p> <p>Universal Human Values and Ethics for youths Sustainable Development Goals</p>	15	
2	<p>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.</p> <p>Shramadhan – Plantation, Cleaning, Watering, Weeding, Any other activities.</p> <p>Awareness Programmes – Seminar, Workshops, Celebration of National and International days, Personality Development Programmes, Group Activities, etc.,</p> <p>Rally, Visit to Adopted villages, Swatchatha Programme, 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 awareness Programme, Literacy Programme, Water Conservation Programme, One Day Special Camp in a village (preferably in adopted village/Adopted areas/Slums/MR Schools etc).</p>	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.
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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 and Profit. 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-Based Leadership, 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