

# **Teaching Plan**

ASM's  
**College of Commerce Science and Information Technology**  
Pimpri, Pune – 411018  
**Teacher's Course Plan**

Name of Subject Teacher: Asst. Prof. Sarika Laxman Shinde

No. of Lectures Allotted per Week:- 3 (45 Hr Lecture)

**Basic Course Information**

Programme: B.Sc.(Computer Science)

Semester: VI

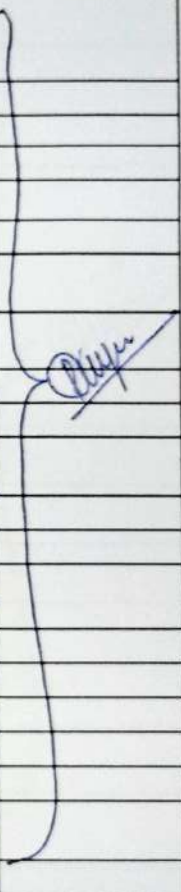
Title of the Course: Object Oriented Programming using Java – I

Course Code: CS - 355

**A: Course Outcomes: On successful completion of the course the learner will be able to:**

CO#	COGNITIVE ABILITIES	COURSE OUTCOMES
CO-1	REMEMBERING	Students will be able to list the main components of Java, including syntax, basic constructs, and the Java Virtual Machine (JVM).
CO-2	UNDERSTANDING	Students will explain the concepts of classes, objects, inheritance, polymorphism, encapsulation, and abstraction in their own words.
CO-3	APPLYING	Students will be able to create programs that use variables, data types, control structures, arrays, classes, objects, constructors, methods, and fields.
CO-4	ANALYZING	Students will learn how to use debugging tools and techniques to find and correct logical, syntactical, and runtime errors in their Java code.
CO-5	EVALUATING	Students will evaluate the time and space complexity of various algorithms, comparing their performance for different tasks.
CO-6	CREATING	Students will design and implement a complete Java application that demonstrates their understanding of programming constructs, OOP principles, and basic data structures.

**B: Outline of topics to be covered**

Lecture No.	Unit	Topics to be covered	Teaching Pedagogy	Planned Date	Actual Date	Coordinator's sign
1	1	<b>An Introduction to Java</b> Object Oriented Programming Concepts A short history of Java, Features/Buzzwords of Java	Classroom	20/07/2023	20/07/2023	
2		Java Environment, Java Tools – jdb, javap, javadoc	Classroom	24/07/2023	24/07/2023	
3		Simple Java Program, Types of Comments, Data Types	Classroom	25/07/2023	25/07/2023	
4		Final Variable	Classroom	27/07/2023	25/07/2023	
5		Declaring 1D, 2D Array	Classroom	31/07/2023	27/07/2023	
6		Accepting Input	Classroom	01/08/2023	01/08/2023	
7	2	<b>Objects and Classes</b> Defining your own classes, Access Specifiers	Powerpoint Presentation	03/08/2023	01/08/2023	
8		Array of Objects, Constructors, Overloading Constructors	Classroom	07/08/2023	03/08/2023	
9		Use of this keyword, static block, static fields/methods	Classroom	08/08/2023	07/08/2023	
10		Object Class, Methods	Classroom	10/08/2023	08/08/2023	
11		String Class And StringBuffer Class, Formatting String data using format() method	Classroom	14/08/2023	10/08/2023	
12		Creating , Accessing And Using Packages	Classroom	17/08/2023	14/08/2023	
13		Wrapper Classes	Classroom	21/08/2023	17/08/2023	
14	3	<b>Inheritance and Interface</b> Inheritance Basics (extends Keyword)	Classroom	22/08/2023	21/08/2023	
15		Types of Inheritance	Classroom	24/08/2023	21/08/2023	
16		Superclass, Subclass and use of Super Keyword	Classroom	28/08/2023	29/08/2023	
17		Method Overriding and runtime polymorphism	Classroom	29/08/2023	29/08/2023	
18		Use of final keyword related to method and class	Classroom	31/08/2023	31/08/2023	
19		Use of abstract class and abstract methods	Classroom	04/09/2023	04/09/2024	
20		Defining and Implementing Interfaces Runtime polymorphism using interface	Classroom	05/09/2023	04/09/2024	
21		Concept of Marker and Functional Interfaces	Classroom	07/09/2023	05/09/2024	


22	4	<b>Exception and File Handling</b> Dealing with errors , Exception class, Checked And Unchecked Exception	Classroom	11/09/2023	07/09/2023	
23		Catching Exceptions, Multiple Catch Block, Nested try block	Classroom	12/09/2023	11/09/2023	
24		Creating User Defined Exception	Classroom	14/09/2023	11/09/2023	
25		Introduction to Files And Streams Input-Output Stream:- FileInputStream/OutputStream, BufferedInput/OutputStream, DataInput/OutputStream	Classroom	18/09/2023	12/09/2023	
26		Reader-Writer : FileReader/Writer, BufferedReader/Writer, InputStreamReader, OutputStreamWriter	Classroom	19/09/2023	14/09/2023	
27	5	<b>User Interface with AWT and Swing</b> What is AWT? What is Swing?	Powerpoint Presentation	21/09/2023	18/09/2023	
28		Difference between AWT and Swing The MVC Architecture and Swing	Powerpoint Presentation	25/09/2023	18/09/2023	Dinesh
29		Layouts And Layout Managers	Powerpoint Presentation	26/09/2023	19/09/2023	
30		Containers And Components – JFrame, JLabel,	Powerpoint Presentation	02/10/2023	19/09/2023	
31		JButton, JText, JTextArea	Powerpoint Presentation	03/10/2023	21/09/2023	
32		JCheckBox and JRadioButton, JList, JComboBox, JMenu And related Classes	Powerpoint Presentation	05/10/2023	21/09/2023	
33		Dialogs (Message, Confirmation, Input),	Powerpoint Presentation	09/10/2023	25/09/2023	
34		JFileChooser, JColorChooser	Powerpoint Presentation	10/10/2023	25/09/2023	
35		Event Handling: Event Sources, Listeners Adapters	Powerpoint Presentation	12/10/2023	26/09/2023	
36		Anonymous Inner Class	Powerpoint Presentation	16/10/2023	26/09/2023	

**C: Concurrent Evaluation Plan.**

Sr. No.	Concurrent Evaluation Component	Date	Time	Course Outcome (linkages of CCE with the Course Outcomes and the targeted attainment levels for each CO)					
				CO-365.1	CO-365.2	CO-365.3	CO-365.4	CO-365.5	CO-365.6
1	Assignments	10/08/2024	-	10	10	0	0	0	0
3	Internal Test	20/10/2023	12.00 pm - 1.00 pm	0	0	10	10	0	0
4	Presentation	05/09/2024	10.00 am - 2.00 pm	0	0	0	0	10	10

**D: Method of Internal Evaluation: 60 Marks are mapped to 15 Marks.**

Types of CCE	Max. Marks	Converted into
Assignments	20	2.5
Internal Test	20	10
Presentation	20	2.5
Total		15

  
**Subject Teacher**

  
**H.O.D.**

  
**Principal**



**Principal**  
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Information Technology  
S. No. 29/1+2A, Pune-Mumbai Highway,  
Pimpri, Pune - 411 018.

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Pimpri, Pune – 411 018

## Teacher's Course Plan

Name of Subject Teacher: Madhuri Patil

No. of Lectures Allotted Per Week: 4(45 min Lecture)

### Basic Course Information

Program: BBA(CA)

Semester: I

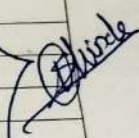
Title of the Course: C Language

Course Code: 103

A: Course Outcomes: On successful completion of the course the learner will be able to:

CO#	COGNITIVE ABILITIES	COURSE OUTCOMES
CO- 1	REMEMBERING	1. Recall basic C Lang syntax and language constructs. 2.List the fundamental data types in C .
CO- 2	UNDERSTANDING	1.Explain the flow of control in C programs using if statements, loops, and switch statements. 2.Describe the concept of pointers and dynamic memory allocation.
CO- 3	APPLYING	1.Write C programs to solve basic programming problems like mathematical calculations and data manipulation. 2.Use functions to create modular and reusable code in C.
CO- 4	ANALYZING	1Analyze and debug C programs to identify and fix common programming errors. 2.Evaluate the efficiency and effectiveness of algorithms and data structures used in C programming.
CO- 5	EVALUATING	1.Critically assess the quality and correctness of C programs, identifying areas for improvement. 2.Evaluate the ethical and legal considerations related to coding practices and intellectual property in C programming.
CO- 6	CREATING	1.Design and implement C programs to solve more complex problems and projects. 2.Create user-defined functions to encapsulate specific functionality.

**B: Outline of topics to be covered**

Lecture No.	Unit	Topics to be covered	Teaching Pedagogy	Planned Date	Actual Date	Coordinator's sign
1	1	Syllabus Introduction & First Chapter Summary	Classroom	25/7/23	25/7/23	
2		<b>Intro to C Lang.</b> Feature & Advantages of C, Algorithm, Basic Struct of C Prog	Classroom	25/7/23	25/7/23	
3		Lang Fundamentals: Token, CharSet, Keywords, identifier, Const, Variables	Classroom	26/7/23	26/7/23	
4		Types of variable: Local & Global, Data Types: Primitive, Derived	Classroom	27/7/23	27/7/23	
5		Types of Operators, Precedence of Operator	Classroom	31/8/23	31/8/23	
6	2	<b>Managing I/O Operations:</b> Console Based I/O & Related Built-In I/O Functions	Classroom	31/8/23	31/8/23	
7		Printf(), scanf(), getch(), getchar() functions with prog & Syntax	Classroom	1/8/23	1/8/23	
8		Formatted I/P & O/P	Classroom	2/8/23	2/8/23	
9	3	<b>Decision-Making &amp; Looping:</b> Introduction	Classroom	7/8/23	7/8/23	
10		Decision making structure If, If-else, Nested if-else, Conditional Operator	Classroom	7/7/23	7/7/23	
11		Switch statements with example	Classroom	8/9/23	8/9/23	
		Loop Control Structure: while loop, for loop	Classroom	9/9/23	9/9/23	
12		Do while, Jump Statements, goto statements	Classroom	14/8/23	14/8/23	
13	4	<b>Programs Through Conditional &amp; Looping statements:</b> Introduction	Classroom	14/8/23	14/8/23	
14		Addition, Multiplication of Integer	Classroom	21/8/23	21/8/23	
15		Determining if a no is +ve/-ve/even/odd	Classroom	21/8/23	21/8/23	
16		Max of 2 no, 3 No	Classroom	22/8/23	22/8/23	
17		Integer Division, Digit Reversing, Table generation for n	Classroom	23/8/23	23/8/23	
18		Factorial, sine, series, cosine series	Classroom	28/8/23	28/8/23	

19		pascal triangle, prime no, factors of no	Classroom	28/8/23	2818123
20	5	<b>Arrays &amp; Strings:</b> Introduction to 1-dim array	Classroom	29/8/23	2918123
21		Accessing & displaying array elements	Classroom	30/8/23	3018123
22		Finding smallest & largest no from array	Classroom	4/9/23	419123
23		Reversing array	Classroom	4/9/23	419123
24		Finding odd/even/prime no	Classroom	6/9/23	619123
25		Introduction to 2-dim array	Classroom	11/9/23	1119123
26		Matrices	Classroom	11/9/23	1119123
27		Intro to Strings std library function	Classroom	12/9/23	1210123
28	6	<b>Functions:</b> Introduction	Classroom	13/9/23	1319123
29		Types of function	Classroom	18/9/23	1819123
30		Call By Value	Classroom	18/9/23	1819123
31		Call By Reference	Classroom	20/9/23	2019123
32		Examples	Classroom	25/9/23	2519123
33		Unit/Class Test	Classroom	25/9/23	2519123
34	7	<b>Introduction to Pointer:</b> Def, Declaration, Initialization	Classroom	26/9/23	2619123
35		Pointer arithmetic	Classroom	27/9/23	2719123
		Dynamic memory allocation	Classroom	3/10/23	3110123
		Functions	Classroom	4/10/23	4110123
		Pointers	Classroom	9/10/23	9110123
	8	<b>Structures:</b> Intro to structure	Classroom	9/10/23	9110123
		Def	Classroom	10/10/23	10110123
		Declaration	Classroom	11/10/23	11110123
		Accessing Members	Classroom	25/10/23	25110123
		Structure Operations	Classroom	30/10/23	30110123
		Nested Structure	Classroom	30/10/23	30110123
		Example	Classroom	31/10/23	31110123

2 Link



**C: Concurrent Evaluation Plan,**

Sr. No.	Concurrent Evaluation Component	Date	Time	Course Outcome (linkages of CCE with the Course Outcomes and the targeted attainment levels for each CO)					
				CO-104.1	CO-104.2	CO-104.3	CO-104.4	CO-104.5	CO-104.6
1	Assignment 1	14/9/2023	1.00pm To 2.00pm	10	10	0	0	0	0
2	Assignment 2	14/10/23	1.00pm To 2.00pm	0	0	10	10	0	0
3	Internal	18/10/23	1.00pm To 2.00pm	0	0	0	0	10	10

**D: Method of Internal Evaluation: 60 Marks are mapped to 30 Marks.**

Types of CCE	Max. Marks
Assignment 1	20
Assignment 2	20
Internal	20

*Arati*  
Subject Teacher

*Divya*  
Course Coordinator



*Sab*  
Principal  
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Information Technology  
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Pimpri, Pune - 411 018.

## Teacher's Course Plan

Name of Subject Teacher: Asst. Prof. Trupti P. Kadam

No. of Lectures Allotted per Week: 4(1 Hr Lecture)

### Basic Course Information

Programme: B.B.A. -IB

Semester: III

Title of the Course: Production & Operation Management

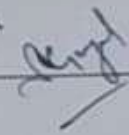
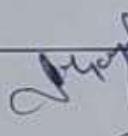
Course Code: 304

Teaching  
Plan

A: Course Outcomes: On successful completion of the course the learner will be able

CO	COGNITIVE ABILITIES	COURSE OUTCOMES
CO-1	REMEMBERING	Remember different production processes such as lean manufacturing and Six Sigma.
CO-2	UNDERSTANDING	Understand the role of technology in optimizing production and operations.
CO-3	APPLYING	Apply principles of process optimization to improve production efficiency
CO-4	ANALYZING	Evaluate the performance of supply chains and propose enhancements.
CO-5	EVALUATING	Assess the effectiveness of different production planning models in various industries and critique the impact of technological advancements on production and operations.
CO-6	CREATING	Design a system for continuous improvement in production processes and create strategies for integrating sustainability practices into production and operations.

: Outline of topics to be covered

Lecture No.	Unit	Topics to be covered	Teaching Pedagogy	Planned Date	Actual Date	Coordinator's sign
1	1	<b>Chapter-1 Introduction to Production and Operations Management</b>	White Board	20/06/2023	20/7/23	
2		Meaning & Definition of Operations Management.	White Board	21/06/2023	20/7/23	
3		Meaning & Definition of Production and Operations Management.	White Board	22/06/2023	21/7/23	
4		Classification	White Board	23/06/2023	21/7/23	
5		Objectives and Scope of Production and Operations Management.	White Board	26/06/2023	21/7/23	
6		Automation-Meaning and Definition	PPT	27/06/2023	24/7/23	
7		Need	PPT	28/06/2023	24/7/23	
8		Types of Automation	PPT	29/06/2023	24/7/23	
9		Advantages and Disadvantages	PPT	03/07/2023	28/7/23	
10		Waste Management	PPT	04/07/2023	28/7/23	
11		Scrap and Surplus Disposal	PPT	05/07/2023	28/7/23	
12		Salvage and Recovery.	PPT	06/07/2023	28/7/23	
13	2	<b>Chapter-2 Plant Location and Layout</b>	PPT	10/07/2023	31/7/23	
14		Definition and Objectives of Plant Location	PPT	11/07/2023	31/7/23	
15		Importance of Location	PPT	12/07/2023	31/7/23	
16		Locating Foreign Operations Facilities	PPT	13/07/2023	29/8/23	
17		Location Decision Process	PPT	17/07/2023	29/8/23	
18		Definition and Objectives of Plant Layout	White Board	18/07/2023	29/8/23	
19		Advantages and Functions of Layout	White Board	19/07/2023	29/8/23	

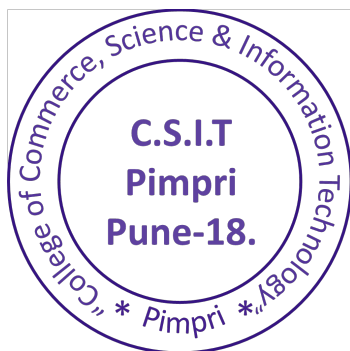
20		Planning of Layout,				
21		Principles of Layout,	White Board	20/07/2023	11/9/23	}
22		Objectives of a Good Plant Layout	White Board	24/07/2023	11/9/23	
23		Factors for a Good Plant Layout	White Board	25/07/2023	4/9/23	
24		Types of Layout	White Board	26/07/2023	4/9/23	
25	3	<b>Chapter-3 Materials and Maintenance Management</b>	White Board	27/07/2023	8/9/23	
26		Definition of Material Management	White Board	31/07/2023	8/9/23	
27		Material Handling Principles.	White Board	01/08/2023	8/9/23	
28		Material Handling Practices.	PPT	02/08/2023	11/9/23	
29		Criteria for Selection of Materials Handling Equipment	PPT	03/08/2023	11/9/23	
30			PPT	07/08/2023	11/9/23	
31		Standardization	White Board	08/08/2023	26/9/23	
32		Codification	White Board	09/08/2023	26/9/23	
33		Simplification	White Board	10/08/2023	27/9/23	
34		Inventory Control: Definition and Importance	White Board	14/08/2023	27/9/23	
35	Objectives of Maintenance Management	White Board	16/08/2023	29/9/23	}	
36	Types of Maintenance Systems	White Board	17/08/2023	29/9/23		
37	4	<b>Chapter-4 Production Planning and Production Control.</b>	White Board	18/08/2023		3/10/23
38		Production Planning: Meaning & Objectives.	White Board	21/08/2023		3/10/23
39		Production Planning: Scope, Importance	White Board	22/08/2023		4/10/23
40		Production Planning: Procedure	PPT	23/08/2023		6/10/23
41		Routing	PPT	24/08/2023		6/10/23
42		Scheduling	PPT	28/08/2023		6/10/23
			PPT	29/08/2023	6/10/23	



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Pimpri, Pune-18

43	Master Production Schedule	PPT	30/08/2023	10/10/23	}
44	Production Schedule, Dispatch, Follow up.	PPT	31/08/2023	10/10/23	
45	Production Control Meaning & Definitions ,	White Board	04/09/2023	13/10/23	
46	Importance of Production Control	White Board	06/09/2023	25/10/23	
47	Production Control Objectives	White Board	07/09/2023	25/10/23	
48	Factors affecting Production Control.	White Board	08/09/2023	26/10/23	

Note: RB: Reference Book; WL: Web Link; CS: Case Study



*Salit*

**Principal**

College of Commerce, Science &  
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Pimpri, Pune - 411 018.

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Pimpri, Pune – 411 018

**Teacher's Course Plan**

Name of Subject Teacher: Ass. Prof. Gayatri Wani

No. of Lectures Allotted per Week: 4 (1 Hr Lecture)

**Basic Course Information**

Programme: BBA

Semester: I

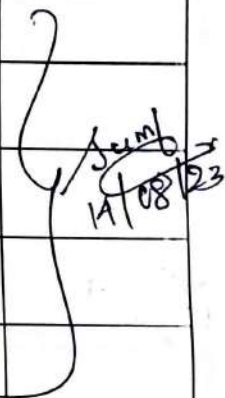
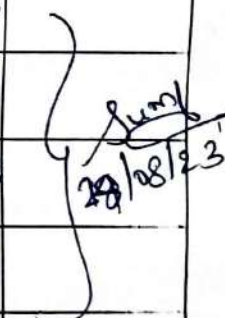
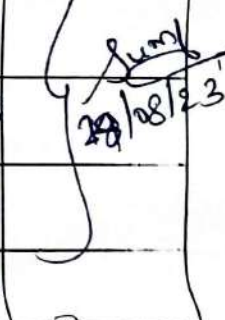
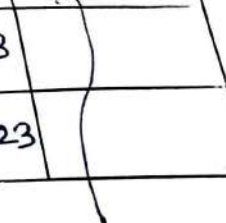
Title of the Course: Business Mathematics

Course Code: 105

A: **Course Outcomes:** On successful completion of the course the learner will be able to:

CO#	COGNITIVE ABILITIES	COURSE OUTCOMES
CO- 1	REMEMBERING	Remember all mathematical concepts related to matrix, profit & loss, shares & mutual funds.
CO- 2	UNDERSTANDING	Understand and apply concepts of simple and compound interest, as well as the time value of money, in financial calculations.
CO- 3	APPLYING	Apply mathematical concepts to understand currency exchange rates and their implications for international business transactions.
CO- 4	ANALYZING	Analyze financial statements using mathematical tools to assess a company's financial health
CO- 5	EVALUATING	1. Calculate profits and losses in various business scenarios. 2. Strengthen problem-solving skills by applying mathematical methods to address a variety of business challenges, including financial analysis, optimization, and risk assessment.
CO- 6	CREATING	Foster creativity in applying mathematical concepts to innovative solutions for business challenges, encouraging out-of-the-box thinking.

**B: Outline of topics to be covered**

Lecture No.	Unit	Topics to be covered	Teaching Pedagogy	Planned Date	Actual Date	Coordinator's sign
1		Syllabus Introduction	Class room	24/7/23	31/8/23	
2	Ratio, Proportion and Percentage:	Ratio – Definition, Continued Ratio, Inverse Ratio,	Class room	25/7/23	7/8/23	
3		Proportion, Continued Proportion, Direct Proportion, Inverse Proportion,	Class room	25/7/23	8/8/23	
4		Variation, Inverse Variation, Joint Variation,	Class room	26/7/23	9/8/23	
5		Variation, Percentage, computation of Percentage.	Class room	31/7/23	14/8/23	
6	Profit and Loss:	Terms and Formulae, Trade discount, Cash discount, Problems involving cost price, selling price,	Class room	1/8/23	21/8/23	
7		Introduction to Commission and brokerage, Problems on commission and brokerage	Class room	1/8/23	22/8/23	
8	Interest and Annuity	Simple interest, Compound interest,	Class room	2/8/23	23/8/23	
9		Equated monthly Installments (EMI) by interest of reducing balance and flat interest methods and problem	Class room	7/8/23	28/8/23	
10		Ordinary annuity, sinker fund, annuity due, present value and future value of annuity.	Class room	8/8/23	29/8/23	
11	Shares and Mutual Funds	Concepts of Shares, face value, market value, dividend, brokerage, equity shares, preferential shares, bonus shares,	Class room	8/8/23	5/9/23	
12		Numerical Problems	Class room	9/8/23	20/9/23	

13		Concept of Mutual Funds, Change in Net Asset Value (NAV), Systematic Investment Plan (SIP),	Class room	14/8/23	25/9/23	
14		Numerical Problems	Class room	21/8/23	26/9/23	
15	Matrices and Determinant:	Determinant & Example	Class room	22/8/23	27/9/23	
16		Matrices, Types of Matrices,	Class room	22/8/23	3/10/23	
17		types of matrices	Class room	23/8/23	3/10/23	
18		Algebra of Matrices,	Class room	28/8/23	4/10/23	
19		Examples of algebra of matrices	Class room	29/8/23	9/10/23	
20		Adjoint of Matrix	Class room	29/8/23	9/10/23	
21		Examples	Class room	4/9/23	10/10/23	
22		Inverse of Matrix,	Class room	5/9/23	10/10/23	
23		Examples	Class room	5/9/23	11/10/23	
24		System of Linear equations,	Class room	6/9/23	16/10/23	
25		Solution of System of Linear Equation by adjoint method (upto 3 variables only).	Class room	11/9/23	16/10/23	
26	Permutation and combination	Fractional notation , definition and properties of n!	Class room	12/9/23	17/10/23	

Sum  
03/10/23

Sum  
16/10/23



27		Fundamental principle of counting	Class room	12/9/23	17/10/23	Sum 25/10/23
28		Permutation	Class room	13/9/23	18/10/23	
29		Combination	Class room	18/9/23	23/10/23	
30		Numerical problems	Class room	20/9/23	25/10/23	
31	Data Interpretation	Data Interpretation and analysis	Class room	25/9/23	30/10/23	Sum 31/10/23
32		Numerical problems	Class room	26/9/23	30/10/23	
33	Linear Programming Problem (LPP)	Concept of LPP, Formulation of LPP .	Class room	26/9/23	31/10/23	Sum 31/10/23
34		solution of LPP by graphical method.	Class room	27/9/23	31/10/23	

**Note:** RB: Reference Book; WL: Web Link; CS: Case Study

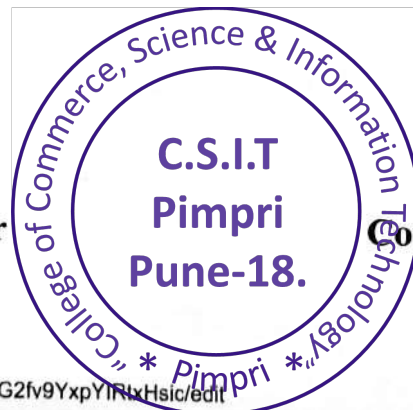
**C: Concurrent Evaluation Plan.**

Sr. No.	Concurrent Evaluation Component	Date	Time	Course Outcome (linkages of CCE with the Course Outcomes and the targeted attainment levels for each CO)					
				CO-104.1	CO-104.2	CO-104.3	CO-104.4	CO-104.5	CO-104.6
1	Assignment	13/10/2023	-	2	2	2	2	2	0
2	Unit Test	18/10/2023	1:00pm-2:00pm	5	4	4	4	3	0
3	Presentation	-	-	0	0	0	0	0	0

**D: Method of Internal Evaluation: 30 Marks are mapped to 30 Marks.**

Types of CCE	Max. Marks
Assignment	10
Unit Test	20
Presentation	-

  
Subject Teacher



  
Course Coordinator

  
Principal

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**College of Commerce Science and Information Technology**  
 Pimpri, Pune – 411 018  
**Teacher's Course Plan**

Name of Subject Teacher: Ass. Prof. Gayatri Wani

No. of Lectures Allotted per Week: 4 (45 min Lecture)

**Basic Course Information**

Programme: BCom

Semester: II


Title of the Course: Business mathematics and statistics II

Course Code: 302

**A: Course Outcomes:** On successful completion of the course the learner will be able to:

CO#	COGNITIVE ABILITIES	COURSE OUTCOMES
CO- 1	REMEMBERING	To understand application of matrices in business. Recall the different methods used to calculate index numbers, such as the Laspeyres Index, Paasche Index, and Fisher Index. Understand the formula and application of each method.
CO- 2	UNDERSTANDING	Demonstrate a solid understanding of fundamental mathematical concepts relevant to business, such as algebra, calculus, and financial mathematics.
CO- 3	APPLYING	To formulate the problem as L.P.P to obtain the best solution using graphical method.. To analyze data pertaining to attributes and to interpret the results.
CO- 4	ANALYZING	Students will be able represent business and economic optimization problems involving two variables as LPP and solve those problems using graphical method
CO- 5	EVALUATING	Evaluate the outcomes of using matrices and determinants in real-world applications. Assess the validity and effectiveness of the mathematical models constructed using these concepts.
CO- 6	CREATING	Encourage students to develop innovative financial models that go beyond standard applications

**B: Outline of topics to be covered**

Lecture No.	Unit	Topics to be covered	Teaching Pedagogy	Planned Date MM/DD/YY	Actual Date MM/DD/YY	Coordinator's sign
1		Syllabus Introduction	Class room Teaching	1/2/2024	1/4/24	
2	Matrices and Determinants (up to order 3 only)	Determinant & Example	Class room Teaching	1/3/2024	1/8/24	
3		Matrices, Types of Matrices,	Class room Teaching	1/4/2024	1/9/24	
4		types of matrices	Class room Teaching	1/5/2024	1/10/24	
5		Algebra of Matrices,	Class room Teaching	1/8/2024	1/11/24	
6		Examples of algebra of matrices	Class room Teaching	1/9/2024	1/15/24	
7		Adjoint of Matrix	Class room Teaching	1/10/2024	1/16/24	
8		Examples	Class room Teaching	1/11/2024	1/18/24	
9		Inverse of Matrix,	Class room Teaching	1/15/2024	1/23/24	
10		Examples	Class room Teaching	1/16/2024	1/24/24	
11		System of Linear equations,	Class room Teaching	1/17/2024	1/25/24	
12		Solution of System of Linear Equation by adjoint method (upto 3 variables only).	Class room Teaching	1/18/2024	1/29/24	
13		Linear Programming Problem (LPP)	Concept of LPP, Formulation of LPP .	Class room Teaching	1/22/2024	

14		solution of LPP by graphical method.	Class room Teaching	1/23/2024	2-15/24	}
15	Correlation and Regression	Concept and meaning of Correlation, Types of correlation.	Class room Teaching	1/24/2024	2/6/24	
16		Methods to study Correlation:- Scatter Diagram,	Class room Teaching	1/25/2024	2/7/24	
17		Karl Pearson correlation coefficient,	Class room Teaching	1/29/2024	2-18/24	
18		Spearman Rank Correlation Coefficient ( with tie)	Class room Teaching	1/30/2024	2/12/24	
19		Spearman Rank Correlation Coefficient ( with out tie)	Class room Teaching	1/31/2024	2/13/24	
20		lines of regression equation of Y on X	Class room Teaching	2/1/2024	2/14/24	
21		lines of regression equation of X on Y.	Class room Teaching	2/5/2024	2/15/24	
22		Applications of correlation and regression,	Class room Teaching	2/6/2024	2/19/24	
23		Regression coefficients	Class room Teaching	2/7/2024	2/20/24	
24		, properties of regression coefficients,	Class room Teaching	2/8/2024	2/21/24	}
25	Index Number	Concept and meaning of Index Number, Notations	Class room Teaching	2/12/2024	2/22/24	
26		Problems in the construction of Index Number,	Class room Teaching	2/12/2024	3/4/24	
28		Types of Index Number Laspeyre's , Paasche's & Fisher's Ideal Index number	Class room Teaching	2/13/2024	3/5/24	

29	Types of Index Number Laspeyre's , Paasche's & Fisher's Ideal Index number	Class room Teaching	2/14/2024	3/6/24	}
30	Online Unit Test	Online	2/14/2024	2/14/24	
31	Cost of Living Index Number (CLI), Family Budget Index Number	Class room Teaching	2/15/2024	3/7/24	
32	Uses and limitations of Index Number	Class room Teaching	3/4/2024	3/11/24	

**Note:** **RB:** Reference Book; **WL:** Web Link; **CS:** Case Study

**C: Concurrent Evaluation Plan.**

Sr. No.	Concurrent Evaluation Component	Date	Time	Course Outcome (linkages of CCE with the Course Outcomes and the targeted attainment levels for each CO)					
				CO-104.1	CO-104.2	CO-104.3	CO-104.4	CO-104.5	CO-104.6
1	Assignment 1&2	2/3/2004	-	0	0	10	10	0	0
2	Online Exam	14/2/2024	12:00 pm - 12:30 pm	10	10	0	0	0	0
3	Presentation	14/2/2024	Lecture Time	0	0	0	0	5	5

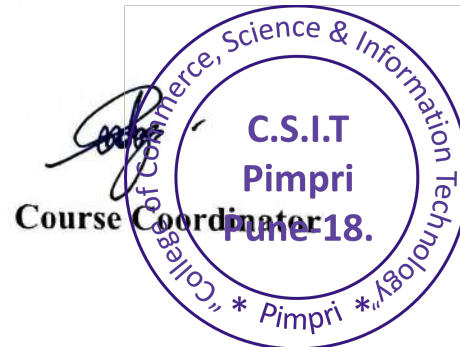
**D: Method of Internal Evaluation: 50 Marks are mapped to 30 Marks.**

Types of CCE	Max. Marks
Assignment 1	10
Online Exam	10
Presentation	10



**Subject Teacher**

**Course Coordinator**



**Principal**

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**Teacher's Course Plan**

Name of Subject Teacher: Asst.Prof. Ahilya P. Patil.

No. of Lectures Allotted per Week: 4(45 min)

**Basic Course Information**

Programme: FYMSc(CS)

Semester: I

Title of the Course: Paradigm of Programming Language

Course Code: CS-503-MJ

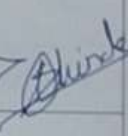
A: **Course Outcomes:** On successful completion of the course the learner will be able to:

CO#	COGNITIVE ABILITIES	COURSE OUTCOMES
CO- 1	REMEMBERING	Students will be able to recall and recognize the fundamental concepts and principles of programming languages.
CO- 2	UNDERSTANDING	Understanding: Students will demonstrate comprehension of different programming language paradigms, including procedural, object-oriented, functional, and logical paradigms.
CO- 3	APPLYING	Students will be able to apply their knowledge of programming language paradigms to design and develop programs using appropriate programming languages.
CO- 4	ANALYZING	Students will critically evaluate programming language features and constructs to determine their strengths, weaknesses, and appropriateness for different programming scenarios.
CO- 5	EVALUATING	Students will assess and compare different programming language paradigms based on their suitability for solving specific problems and their impact on program efficiency and maintainability.



CO-6	CREATING	Students will create innovative and efficient programming solutions by combining elements from multiple programming language paradigms, demonstrating their ability to synthesize and integrate knowledge acquired during the course.
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**B: Outline of topics to be covered**

Lecture No.	Unit	Topics to be covered	Teaching Pedagogy	Planned Date	Actual Date	Coordinator's sign
1	1	<b>Introduction to PPL</b> 1.1 The Art of Language Design , 1.2 The Programming Language Spectrum	Classroom	30/8/2023	06/09/2023	
2		1.3 Why Study Programming Languages? 1.4 Compilation and Interpretation, 1.5 Programming Environments	Classroom	31/8/2023	07/09/2023	
3	2	<b>Names, Scopes, Bindings, Object Orientation</b> Concepts 2.1 The Notion of Binding Time, 2.2 Object Lifetime and Storage Management	Classroom	1/9/2023	08/09/2023	
4		2.3 Static Allocation, Stack-Based Allocation, Heap-Based Allocation, Garbage Collection , Scope Rules, Static Scoping	Classroom	1/9/2023	08/09/2023	
5		2.4 Nested Subroutines, Declaration Order, Dynamic Scoping, The meaning of Names in a Scope, 2.5 Object-Oriented Programming	Powerpoint Presentation	6/9/2023	13/09/2023	
6		2.6 Encapsulation and Inheritance, Modules, Classes, Nesting (Inner Classes), Type Extensions, Extending without Inheritance	Classroom	7/9/2023	14/09/2023	

7		2.7 Initialization and Finalization, Choosing a Constructor, References and Values, Execution Order, Garbage Collection, 2.8 Dynamic Method Binding	Classroom	8/9/2023	15/09/2023	} <i>Alvinde</i>
8		2.9 Virtual- and Non-Virtual Methods, Abstract Classes, Member Lookup, Polymorphism, Object Closures	Classroom	8/9/2023	15/09/2023	
9		2.10 Multiple Inheritance, Shared Inheritance, Mix-In Inheritance, 2.11 Semantic Ambiguities, Replicated Inheritance	Powerpoint Presentation	13/9/2023	20/09/2023	
10	3	<b>Data Types</b> 3.1 Introduction 3.2 Primitive Data Types	Classroom	14/9/2023	21/09/2023	
11		3.3 Numeric Types: Integer, Floating point, Complex, Decimal, Boolean Types, Character Types, 3.4 Character String Types	Classroom	15/9/2023	22/09/2023	
12		3.5 Design Issues, Strings and Their Operations, String Length Operations, Evaluation, Implementation of Character String Types	Classroom	15/9/2023	22/09/2023	
13		3.6 User defined Ordinal types, Enumeration types, Design Evaluation Subrange types, Ada's design Evaluation Implementation of user defined ordinal types, 3.7 Array types.	Powerpoint Presentation	20/9/2023	27/09/2023	
14		3.8 Design issues, Arrays and indices, Subscript bindings and array categories, Heterogeneous arrays, Array initialization, Array operations, Rectangular and Jagged arrays, Slices, Evaluation, Implementation of Array Types	Powerpoint Presentation	21/9/2023	28/09/2023	
15		3.9 Associative Arrays: Structure and operations, Implementing associative arrays.	Classroom	22/9/2023	29/09/2023	

16		3.10 Record types: Definitions of records, References to record fields, Operations on records, Evaluation, implementation of Record types	Powerpoint Presentation	22/9/2023	23/09/2023	
17		3.11 Union Types: Design issues, Discriminated versus Free unions, Evaluation, Implementation of Union types.	Classroom	27/9/2023	04/10/2023	
18		3.12 Pointer and Reference Types :Design issues, Pointer operations, Pointer problems, Dangling pointers, Lost heap dynamic variables, Pointers in C and C++, Reference types, Evaluation,3.13 Implementation of pointer and reference types	Classroom	28/9/2023	05/10/2023	
19		3.14 Representation of pointers and references, Solution to dangling pointer problem, Heap management	Powerpoint Presentation	29/9/2023	06/10/2023	
20	4	<b>Control Flow</b> 4.1 Expression Evaluation, Precedence and Associativity, Assignments, Initialization, Ordering Within Expressions, Short-Circuit Evaluation	Powerpoint Presentation	29/9/2023	06/10/2023	
21		4.2 Structured and Unstructured Flow, Structured Alternatives to goto Sequencing.	Powerpoint Presentation	4/10/2023	11/10/2023	
22		4.3 Selection - Short-Circuited Conditions, Case/Switch Statements, Iteration.	Classroom	5/10/2023	12/10/2023	
23		4.4 Iteration - Enumeration-Controlled Loops, Combination Loops, Iterators, Logically Controlled Loops Recursion 4.5 Recursion - Iteration and Recursion, Applicative- and Normal-Order Evaluation	Classroom	6/10/2023	13/10/2023	

24	5	<b>Subprograms and Implementing Subprograms</b>				
25		5.1 Introduction	Powerpoint Presentation	6/10/2023	13/10/2023	} <i>Blinda</i>
26		5.2 Fundamentals of Subprograms	Powerpoint Presentation	11/10/2023	18/10/2023	
27		5.3 Design Issues for subprograms	Classroom	12/10/2023	19/10/2023	
28		5.4 Local Referencing Environments	Classroom	13/10/2023	20/10/2023	
29		5.5 Parameter-Passing Methods,	Classroom	13/10/2023	20/10/2023	
30		5.6 Parameters That Are Subprograms	Powerpoint Presentation	18/10/2023	25/10/2023	
31		5.7 Overloaded Subprograms	Classroom	19/10/2023	26/10/2023	
32		5.8 Generic Subroutines, Generic Functions in C++, Generic Methods in Java	Classroom	20/10/2023	27/10/2023	
33		5.9 Design Issues for Functions, 5.10 User-Defined Overloaded Operators Coroutines	Powerpoint Presentation	20/10/2023	27/10/2023	
34		5.11 Implementing Subprograms, 5.13 Implementing "Simple" Subprograms,	Classroom	25/10/2023	01/11/2023	
35		5.14 Implementing Subprograms with Stack- Dynamic Local Variables, 5.15 Nested Subprograms Blocks, 5.16 Implementing Dynamic Scoping	Classroom	26/10/2023	02/11/2023	

C: Concurrent Evaluation Plan.

Sr. No.	Concurrent Evaluation Component	Date	Time	Course Outcome (linkages of CCE with the Course Outcomes and the targeted attainment levels for each CO)					
				CO-303.1	CO-303.2	CO-303.3	CO-303.4	CO-303.5	CO-303.6
1	Assignments	5/10/2023	-	2	2	2	2	1	1
2	Online Exam	6/11/2023	4 pm To 5 pm	2	2	4	4	4	4
3	Internal Exam	21/11/2023	12 pm To 1 pm	4	4	2	2	4	4

D: Method of Internal Evaluation: 40 Marks are mapped to 15 Marks.

Types of CCE	Max. Marks
Assignments	10
Online Exam	20
Internal Exam	20

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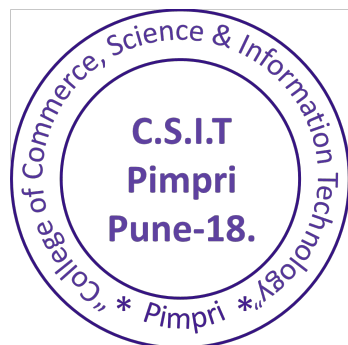
Subject Teacher

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