



**M. C. E. Society's**

**Abeda Inamdar Senior College**

Of Arts, Science and Commerce, Camp, Pune-1

(Autonomous) Affiliated to Savitribai Phule Pune University

NAAC accredited 'A' Grade

**F.Y.B.B.A.C.A. (CBCS – Autonomy 2023 Pattern)**

**Under NEP 2020**

<b>Course Title : INTRODUCTION TO C PROGRAMMING</b>	<b>Semester : I</b>
<b>Course Code : 23CBCA11MM</b>	<b>No. of Credits : 02</b>
<b>Nature of Course : Major</b>	<b>Total Teaching Hours : 30 Hrs</b>

<b>Course Objectives</b>	
<b>1.</b>	The course aims to provide exposure to problem-solving through programming
<b>2.</b>	It aims to train the student to the basic concepts of the C-programming language.
<b>3.</b>	This course involves a lab component which is designed to give the student hands-on experience with the concepts.

<b>Course Outcome</b>	
<b>1.</b>	Identify situations where computational methods and computers would be useful.
<b>2.</b>	Given a computational problem, identify and abstract the programming task involved.
<b>3.</b>	Approach the programming tasks using techniques learned and write pseudo-code.
<b>4.</b>	Use the comparisons and limitations of the various programming constructs and choose the right one for the task in hand.
<b>5.</b>	Write the program on a computer, edit, compile, debug, correct, recompile and run it.
<b>6.</b>	Identify tasks in which the numerical techniques learned are applicable and apply them to write programs, and hence use computers effectively to solve the task

<b>Syllabus</b>		
<b>Unit I</b>	<b>FUNDAMENTALS OF C LANGUAGE</b>	<b>06 hours</b>
	<b>1. History of Programming Language</b> <b>2. Introduction of Flowcharts and Algorithms</b> <b>3. Language fundamentals</b> <ul style="list-style-type: none"> <li>i. Tokens</li> <li>ii. Data types</li> <li>iii. Declaration of Variables</li> </ul> <b>4. Operators</b> <ul style="list-style-type: none"> <li>i. Types of operators</li> <li>ii. Precedence and associativity</li> </ul>	1  1  2    2
<b>Unit II</b>	<b>DECISION MAKING AND LOOPING</b>	<b>08 hours</b>
	1. Decision making structure <ul style="list-style-type: none"> <li>i. If statement</li> <li>ii. If-else statement</li> <li>iii. Nested if-else statement</li> <li>iv. Conditional operator</li> <li>v. Switch statement</li> </ul> 2. Loop control structures <ul style="list-style-type: none"> <li>vi. while loop</li> <li>vii. Do-while loop</li> <li>viii. For loop</li> <li>ix. Nested for loop</li> </ul> 3. Jump statements <p style="text-align: center;">break, continue, goto and exit</p>	4    3    1
<b>Unit III</b>	<b>ARRAYS AND STRINGS</b>	<b>08 hours</b>
	<b>1. Introduction to one-dimensional Array</b> <ul style="list-style-type: none"> <li>i. Definition</li> <li>ii. Declaration</li> <li>iii. Initialization</li> </ul> <b>2. Accessing and displaying array elements</b> <b>3. Introduction to two-dimensional Array</b> <ul style="list-style-type: none"> <li>x. Definition</li> </ul>	2    1  1

	<ul style="list-style-type: none"> <li>xi. Declaration</li> <li>xii. Initialization</li> </ul> <p><b>4. Accessing and displaying array elements</b></p> <ul style="list-style-type: none"> <li>i. Addition, Multiplication,</li> </ul> <p><b>5. Introductions to Strings</b></p> <ul style="list-style-type: none"> <li>i. Definition</li> <li>ii. Declaration</li> <li>iii. Initialization</li> <li>iv. Standard library functions</li> </ul>	<p>1</p> <p>3</p>
<b>Unit IV</b>	<b>FUNCTIONS</b>	<b>08 hours</b>
	<p><b>1. Introduction</b></p> <ul style="list-style-type: none"> <li>i. Purpose of function</li> <li>ii. Function definition</li> <li>iii. Function declaration</li> <li>iv. Function call</li> </ul> <p><b>2. Types of functions</b></p> <ul style="list-style-type: none"> <li>i. Call by value</li> <li>ii. Call by reference</li> </ul> <p><b>3. Recursion</b></p> <p><b>4. Storage Classes</b></p>	<p>3</p> <p>2</p> <p>2</p> <p>1</p>

<b>Suggested Readings</b>	
<b>1.</b>	Y.S.Kanetkar, "Let Us C", 17th Edition, BPB Publications.
<b>2.</b>	E.Balaguruswamy, "Programming in ANSI C", 2nd Edition, Tata Mc-Graw Hill Publishing Co Ltd.
<b>3.</b>	K. N. King, "C Programming: Modern Approach", 2nd Edition, W. W. Norton & Company.
<b>4.</b>	Greg Perry and Dean Miller, "C Programming Absolute Beginner's Guide", 3rd Edition, Kindle eTextbook Store.
<b>5.</b>	Mike McGrath, "C Programming in easy steps", 5th Edition, McGraw Hill Education.

**F.Y.B.B.A.C.A.( CBCS – Autonomy 2023 Pattern)**

**Under NEP 2020**

<b>Course Title : DATABASE MANAGEMENT SYSTEM</b>	<b>Semester : I</b>
<b>Course Code : 23CBCA12MM</b>	<b>No. of Credits : 02</b>
<b>Nature of Course : Major</b>	<b>Total Teaching Hours : 30 Hrs</b>

<b>Course Objectives</b>	
<b>1.</b>	To provide a sound introduction to the discipline of database management system as a subject.
<b>2.</b>	To give an introduction to systematic design approaches covering conceptual, logical and physical view
<b>3.</b>	To present the concepts and techniques relating to query processing using SQL

<b>Course Outcome</b>	
<b>1.</b>	Understand and effectively explain the concepts of database technologies.
<b>2.</b>	Design and implement a database schema for give problem domain and normalize database
<b>3.</b>	To make the students understand the students about SQL Queries.

<b>Syllabus</b>		
<b>Unit I</b>	<b>Database Management System</b>	<b>04</b>
	<p><b>1) Introduction of Basic Concept and Definitions</b></p> <p><b>DBMS</b></p> <ul style="list-style-type: none"> <li>i. Data and Information</li> <li>ii. Data Vs. Information</li> <li>iii. Data Dictionary</li> <li>iv. Data Item or Field</li> <li>v. Record</li> </ul> <p><b>2) Definition of DBMS</b></p> <p><b>3) Applications of DBMS</b></p> <p><b>4) Advantages and Disadvantages of DBMS</b></p> <p><b>5) Users of DBMS</b></p> <ul style="list-style-type: none"> <li>i. Database Designers</li> <li>ii. Application programmer</li> <li>iii. Sophisticated Users</li> <li>iv. End Users</li> </ul> <p><b>6) Overall System structure</b></p>	
<b>Unit II</b>	<b>Relational Model</b>	<b>07</b>
	<p><b>1. Basic Terms</b></p> <ul style="list-style-type: none"> <li>i. Relation</li> <li>ii. Tuple</li> <li>iii. Attribute</li> <li>iv. Cardinality</li> <li>v. Degree of relationship set</li> <li>vi. Domain</li> </ul> <p><b>2. Keys</b></p> <ul style="list-style-type: none"> <li>i. Super Key</li> <li>ii. Candidate Key</li> <li>iii. Primary Key</li> <li>iv. Foreign Key</li> </ul> <p><b>3. Relational Algebra Operations</b></p> <ul style="list-style-type: none"> <li>i. Select</li> <li>ii. Project</li> <li>iii. Union</li> </ul>	

	<ul style="list-style-type: none"> <li>iv. Difference</li> <li>v. Intersection</li> <li>vi. Cartesian Product</li> <li>vii. Natural Join</li> </ul> <p><b>4. Relational Algebra Case Study</b></p>	
<b>Unit III</b>	<b>SQL (Structured Query Language)</b>	<b>12</b>
	<ul style="list-style-type: none"> <li><b>1. Introduction</b></li> <li><b>2. History Of SQL</b></li> <li><b>3. Basic Structure</b></li> <li><b>4. DDL Commands</b></li> <li><b>5. DML Commands</b></li> <li><b>6. Simple Queries</b></li> <li><b>7. Nested Queries</b></li> <li><b>8. Aggregate Functions</b></li> </ul>	
<b>UNIT IV</b>	<b>Relational Database Design</b>	<b>07</b>
	<ul style="list-style-type: none"> <li><b>1. Introduction</b></li> <li><b>2. Anomalies of un normalized database</b></li> <li><b>3. Normalization</b></li> <li><b>4. Normal Form</b> <ul style="list-style-type: none"> <li>i. 1 NF</li> <li>ii. 2 NF</li> <li>iii. 3 NF</li> <li>iv. 4 BCNF</li> </ul> </li> </ul>	

<b>Suggested Readings</b>	
<b>1.</b>	“Database System”, By Henry korth, 6th Edition, Silberschatz.
<b>2.</b>	SQL, PL/SQL the Programming Language Oracle, Ivan Bayross , 4th Edition,
<b>3.</b>	“Database Systems Concepts”, Shio Kumar Singh, 3rd Edition, Pearson.
<b>4.</b>	“Introduction to SQL”, Reck F. van der Lans 4th Edition,
<b>5.</b>	“Modern Database Management”, Jeffery A Hoffer, Ramesh, HeikkiTopi, 5th Edition, Pearson.
<b>6.</b>	”Database Management Systems”, DebabrataSahoo 6th Edition, Tata.
<b>7.</b>	Website Links:

[https://docs.oracle.com/cd/E11882\\_01/server.112/e40540/intro.htm](https://docs.oracle.com/cd/E11882_01/server.112/e40540/intro.htm)

[https://docs.oracle.com/cd/E11882\\_01/server.112/e40540/tablecls.htm#CNCPT010](https://docs.oracle.com/cd/E11882_01/server.112/e40540/tablecls.htm#CNCPT010)

[https://docs.oracle.com/cd/E11882\\_01/server.112/e40540/indexiot.htm#CNCPT721](https://docs.oracle.com/cd/E11882_01/server.112/e40540/indexiot.htm#CNCPT721)

## F.Y.B.B.A (C.A) Lab I – Practical on Introduction to C Programming

2023-24 (CBCS – Autonomy 23 Pattern)

Under NEP 2020

<b>Course Title : Lab I – Practical on C Programming</b>	<b>Semester : I</b>
<b>Course Code : 23CBCA13MM</b>	<b>No. of Credits : 02</b>
<b>Nature of Course : Core Practical</b>	<b>Total Teaching Hours : 30 Hrs</b>

### Aims & Objectives of the Course

<b>Sr.No.</b>	<b>Objectives</b>
<b>1.</b>	To study various data types, arrays, strings and functions in C
<b>2.</b>	To learn briefly the concept of Decision Making and looping
<b>3.</b>	To understand built-in library functions

### Expected Course Specific Learning Outcomes

<b>Sr.No.</b>	<b>Learning Outcome</b>
<b>1.</b>	Explain use of appropriate data types, control statements
<b>2.</b>	Write programs using Array, String and function
<b>3.</b>	Use Pre-processor directives
<b>4.</b>	Demonstrate ability to use top-down program design

### Best IDE used for C-Programming:

<b>Sr. No</b>	<b>Name of IDE or Tools</b>	<b>Latest Version</b>
1.	Turbo C	3.2/3.3
2.	Microsoft Visual Studio Code	1.56
3.	NetBeans	12.4



<b>Assignment No</b>	<b>Assignment Name</b>	<b>No. Of Sessions</b>
1	Assignment based on Data types and operators	1
2	Assignment based on if and if-else	6
3	Assignment based on Switch	5
4	Assignment based on Loop	6
5	Assignment based on Array and String	6
6	Assignment based on Function	6
	Total Number of Sessions	30

**F.Y.B.B.A (C.A) Lab II – Practical on Database Management System  
2023-24 (CBCS – Autonomy 23 Pattern)**

**Under NEP 2020**

<b>Course Title : Lab I – Practical on Database Management System</b>	<b>Semester : I</b>
<b>Course Code : 23CBCA11SE</b>	<b>No. of Credits : 02</b>
<b>Nature of Course : SEC</b>	<b>Total Teaching Hours : 30 Hrs</b>

**Aims & Objectives of the Course**

<b>Sr.No.</b>	<b>Objectives</b>
<b>1.</b>	To study basic concepts of database management System
<b>2.</b>	To understand SQL Commands
<b>3.</b>	To understand how to Enables student to write SQL command to implements: Constraints and Relationships.

**Expected Course Specific Learning Outcomes**

<b>Sr.No.</b>	<b>Learning Outcome</b>
<b>1.</b>	After completion of this course, students will able to write SQL DDL, DML queries ,they can understand Constraints and able to implement Relationships.

**Best IDE used for C-Programming:**

<b>Sr. No</b>	<b>Name of IDE or Tools</b>	<b>Latest Version</b>
1.	Oracle	10X
2.	Notepad	-

<b>Assignment No</b>	<b>Assignment Name</b>	<b>No. Of Sessions</b>
1	Assignment on DDL Commands (Table Creation).	2
2	Assignment on DDL Commands (Alter and Drop table).	2
3	Assignment on DML Commands (Insert, Update and Delete).	2
4	Assignment on RDB without Constraints.	3
5	Assignment on Table Creation with Constraints.	3
6	Assignment on RDB with constraints.	4
7	Assignment on Implementation of Select Command	14
	Total Number of Sessions	30

**F.Y.B.B.A (C.A). SEM I (CBCS – Autonomy 2023 Pattern)**

<b>Course Title</b>	<b>Business and Professional Skills</b>	
<b>Course Code: 23BCA11VS</b>		<b>No. of Credits: 02</b>
<b>Course Type: VSC</b>		<b>Total Teaching Hours: 30</b>

**Course Objectives**

<b>1.</b>	To understand what is the role of communication in personal and business world
<b>2.</b>	To understand organizational system, organizational communication and their utility
<b>3.</b>	To develop proficiency in how to write business letters and other communications in required business communication
<b>4.</b>	To develop ability to maintain business style and professional image.

**Course Outcome**

<b>1.</b>	To understand and implement effective communication methods.
<b>2.</b>	To understand forms of communication and to develop ability to use it according to required situation.
<b>3.</b>	Ability to understand business correspondence and types of business letters.
<b>4.</b>	Ability to maintain and improve business style and professional image.

<b>Syllabus</b>		
<b>Unit I</b>	<b>Introduction to Communication</b>	<b>10 Hours</b>
	1. Meaning and definition of Communication	02
	2. Need for effective communication	02
	3. Role of Communication in social and economic system	02
	4. Principles of effective communication	02
	5. Barriers to communication and over comings	02
<b>Unit II</b>	<b>Methods and Channels of Communication</b>	<b>15 Hours</b>
	<b>1. Methods of Communication</b>	
	<b>I. Verbal Communication</b>	04
	a. Nature and Definitions of Verbal Communication	
	b. Oral Communication: Definition, Advantages and Disadvantages	
	c. Written Communication: Definition, Advantages and Disadvantages	
	<b>II. Non Verbal Communication</b>	04
	a. Definition, its importance and its inevitability	
	b. Kinesics: Body movements, facial expressions, posture, eye contact etc.	
	c. Proxemics: The communication use of space	
	d. Paralanguage: Vocal behaviour and its impact on verbal communication	
	<b>2. Channels of Communication</b>	
	<b>I. Formal Channels</b>	04
	a. Downward Communication: Definition, Illustrations, Merits and Demerits	
	b. Upward Communication: Definition, Illustrations, Merits and Demerits	
	c. Horizontal Communication: Definition, Illustrations, Merits and Demerits	
	d. Diagonal Communication: Definition e. Illustrations,	

	Merits and Demerits <b>II. Informal Channels</b> a. Grapevine Communication: Meaning and Definition b. Types and Illustrations c. Merits and Demerits	03
<b>Unit III</b>	<b>Professional Image Building and E-mail Etiquettes</b>	<b>05 Hours</b>
	1. Professional Image Building;	02
	2. Business Attire,	01
	3. Grooming for Multicultural Environment	01
	4. Writing Business E-mails	01

<b>Suggested Readings</b>	
1.	Meenakshi Raman, Prakash Singh, “Business Communication”, Oxford.
2.	HomaiPradhan , N.S. Pradhan, “Business Communication”, Himalaya Publishing House
3.	R.K. Madhukar,”Business Communication”, Vikas Publishing House.
4.	Biswajit Das. IpswwtaSatpathy,”Business Communication and personality Development”, 3rd Edition, Excel Books
5.	P.D Chaturvedi, MukeshChaturvedi ,”Business Communication – Concepts, Cases and applications”, 5th Edition,Dorling Kindersley.
6.	HorySankarMukerjee,”Business Communication – Connecting at work”, 9th Edition, Oxford.
7.	Courtland L. Bovee, John V. Thill, AbhaChatterjee,”Business Communication Today”, 2nd Edition, Pearson.
8.	Eileen Scholes,”Hand Book of internal Communication”, 1st Edition, Infinity Books.
9.	Linda B., Iris V.,”Intercultural Communication in the Global Workplace”, 10th Edition, Tata McGraw Hills.

**F.Y.B.B.A (CA) 2023-24 (CBCS –Autonomy 21 Pattern)**

<b>Course/ Paper Title</b>	Statistics for Business Administration (Computer Applications)
<b>Course Code</b>	23SBST10OEB
<b>Semester</b>	I
<b>No. of Credits</b>	2

**Syllabus**

<b>Unit No</b>	<b>Title with Contents</b>	<b>No. of Lectures</b>
<b>Unit I</b>	<b>Frequency Distribution</b>	<b>8</b>
	1. Raw data, variable, discrete variable, continuous variable, constant, attribute with illustration.	1
	2. Classification- Concept and definition of classification, 2 objectives of classification, types of Classification.	1
	3. Frequency Distribution- Discrete and Continuous frequency distribution, Cumulative frequency and Cumulative frequency 3 distribution.	2
	4. Graphs & Diagram- Histogram, Ogive curve, Pie-Diagram, Bar Diagram, Multiple bar Diagram Sub- divided bar diagram.	4
<b>Unit II</b>	<b>Measure of Central Tendency and Measure of Dispersion</b>	<b>14</b>
	1. Concept and meaning of Measure of Central Tendency, Objectives of Measure of Central Tendency, Requirements of good Measure of Central Tendency.	2
	2. Types of Measure of Central Tendency, Arithmetic Mean (A.M), Median, Mode for discrete and Continuous frequency distribution, Merits & Demerits of A.M Median , Mode, Numerical Problem.	3
	3. Determination of Mode and Median graphically.	1

	4. Empirical relation between mean, median, mode 5. Combined Mean., Numerical Problems .	1
	6. Concept and meaning of Measure of dispersion, Requirements of good Measure of dispersion. 7. Types of Measure of Dispersion- Absolute & Relative Measure dispersion (Range, Standard Deviation (S.D.), Variance, Quartile Deviation, Coefficient of Range, 8. Coefficient of Quartile Deviation, and Coefficient of Variation (C.V). 9. Combined Standard Deviation.	1 3 2 1
<b>Unit III</b>	<b>Correlation &amp; Regression</b>	<b>8</b>
	1. Concept and meaning of Correlation, Types of correlation (for ungrouped data). 2. Methods to study Correlation: Scatter Diagram, Karl Pearson correlation coefficient, Spearman Rank Correlation Coefficient (with ties and without ties). 3. Regression- Concept and meaning of regression, line of regression equation of Y on X (Y-Dependent variable, X Independent variable). 4. Regression coefficients, properties of regression coefficients.	1 2 2 2 1

**TEXT BOOK:**

1. Mathematical Statistics-J.N. Kapur and H.C. Saxena S. Chand Publication 20<sup>th</sup> Edition, New Delhi

Unit I: Chapter1. Unit II:

Chapter2. Unit III: Chapter3.

**References:**

1. J.N. Kapur and H.C. Saxena S. Mathematical Statistics. Sultan Chand and Sons Publishers, New Delhi

2. GirishPhatak. Business Statistics. Tech – Max Pune

3. Dr. S. K. Khandelwal. Statistics for Business. International Book House New Delhi



4. J.K. Sharma. Fundamentals of Business Statistics. Pearson New Delhi
5. G.C. Beri. Business Statistics. McGraw-Hill companies New Delhi
6. R.S. N. PillaiBagavathi. Statistics Theory and Practice. Sultan Chand and Sons Publishers, New Delhi.
7. Dr. S. K. Khandelwal. Statistics for Managerial decision Making. International BookHouse New Delhi
8. Ken Black. Business Statistics For Contemporary Decision Making.  
WileyIndiaEditionNew Delhi

**REFERENCE WEBSITES:**

1. [https://onlinecourses.nptel.ac.in/noc20\\_mg23/preview](https://onlinecourses.nptel.ac.in/noc20_mg23/preview)

**F.Y.B.B.A.C.A.( CBCS – Autonomy 2023 Pattern )**

**Under NEP 2020**

<b>Course Title : ADVANCED C PROGRAMMING</b>	<b>Semester : II</b>
<b>Course Code : 23CBCA21MM</b>	<b>No. of Credits : 02</b>
<b>Nature of Course : Major</b>	<b>Total Teaching Hours : 30 Hrs</b>

**Course Objectives**

<b>1.</b>	To study advanced concepts of programming using the 'C' Language.
<b>2.</b>	To understand code organization with complex data types and structures.
<b>3.</b>	To work with files and graphics.

**Course Outcome**

<b>1.</b>	Easy to develop our own data types also helpful in data structures.
<b>2.</b>	To create own macros for the constant values.
<b>3.</b>	Creating different types of files using different file functions.
<b>4.</b>	Easy to handle memory management.
<b>5.</b>	Students can make their own mini projects using graphics.
<b>6.</b>	Students will be able to understand how to interact with computer hardware by using different libraries in C.

<b>Syllabus</b>		
<b>Unit I</b>	<b>STRUCTURES</b>	<b>05 hours</b>
	<b>1. Introduction to Structures</b> i. Definition ii. Declaration <b>2. Accessing Members.</b> <b>3. Structure operations</b> <b>4. Nested Structures</b>	1   1 2  1
<b>Unit II</b>	<b>POINTER</b>	<b>08 hours</b>
	<b>1. Definition and Concept, Advantage of using pointer</b> <b>2. Pointer arithmetic</b> <b>3. Array of pointers</b> <b>4. Pointers and Functions</b> <b>5. Dynamic Memory Allocation</b>	1 1 2 2 2
<b>Unit III</b>	<b>UNION</b>	<b>05 hours</b>
	<b>1. Union</b> i. Definition, Syntax. <b>2. Working with union</b> <b>3. Initializing union, Advantages of union</b> <b>4. Structures versus union</b>	1 2 1 1
<b>Unit IV</b>	<b>FILE HANDLING</b>	<b>07 hours</b>
	<b>1. File</b> i. Definition ii. File Opening Modes <b>2. Functions:</b> fopen(), fclose(), fgetc(), fputc(), fgets(), fputs(), fscanf(), fprintf(), getw(), putw(), fread(), fwrite(), fseek(), ftell() etc. <b>3. File Management</b> i. Opening/Closing a File ii. Input/output operations on Files iii. Error Handling During I/O Operations iv. Command Line Arguments	1       3    3

<b>Unit V</b>	<b>GRAPHICS PROGRAMMING</b>	<b>05 hours</b>
	<b>1. Introduction of graphics</b>	1
	<b>2. Graphical functions</b>	2
	<b>3. Simple Programs</b>	2

<b>Suggested Readings</b>	
<b>1.</b>	Schildt Herbert," C: The Complete Reference (Tata McGraw Hill Edition)", McGraw Hill
<b>2.</b>	Behrouz A. Forouzan, Richard F. Gilberg, "A Structured Programming Approach Using C (Third Edition 2007)", Cengage Learning India
<b>3.</b>	Brian Kernighan, Dennis Ritchie, "The 'C' programming language (Second Edition), PHI
<b>4.</b>	Ajay Mittal, Pearson," Programming in C (First Edition 2010)", Cengage Learning India.
<b>5.</b>	B. Gottfried, "Programming with C (Fourth Edition)", Tata McGraw Hill
<b>6.</b>	E. Balagurusamy,"Programming in ANSI C (Seventh Edition)", McGraw Hill
<b>7.</b>	YashwantKanetkar,"Let Us C (15th Edition 2016)", BPB

## F.Y.B.B.A (C.A) Lab I - Practical on Advanced C Programming

2023-24 (CBCS – Autonomy 23 Pattern)

Under NEP 2020

<b>Course Title : Lab I - Practical on Advanced C Programming</b>	<b>Semester : II</b>
<b>Course Code : 23CBCA23MM</b>	<b>No. of Credits : 02</b>
<b>Nature of Course : Core Practical</b>	<b>Total Teaching Hours : 30 Hrs</b>

### Aims & Objectives of the Course

<b>Sr.No.</b>	<b>Objectives</b>
<b>1.</b>	To study basic concepts of Structure and Pointers.
<b>2.</b>	To understand concept of Union and Enumeration.
<b>3.</b>	To understand concept of File Handling functions.
<b>4.</b>	To work with graphics.

### Expected Course Specific Learning Outcomes

<b>Sr.No.</b>	<b>Learning Outcome</b>
<b>1.</b>	Implement the given Structure program.
<b>2.</b>	Write programs using Pointers, Union.
<b>3.</b>	Use File Handling concept.
<b>4.</b>	Use graphics methods to draw line, circle, rectangle etc.

### Best IDE used for Advance C:

<b>SR No</b>	<b>Name of IDE or Tool</b>	<b>Latest Version</b>
1.	Turbo C	3.2/3.3
2.	Notepad++	7

<b>Assignment No</b>	<b>Assignment Name</b>	<b>No. Of Sessions</b>
1	Assignment on structures	6
2	Assignment on Pointers	6
3	Assignment on Union and Enumeration	6
4	Assignment on File handling	6
5	Assignment on graphics programming	6
	Total Number of Sessions	30

<b>Offered as</b>	Minor
<b>Course/ Paper Title</b>	Applied Mathematics
<b>Course Code</b>	23CBCA21MN
<b>Semester</b>	II
<b>No. of Credits</b>	2

<b>Sr. No.</b>	<b>Objectives</b>
1.	Learn basic terminology formal logic, sets, relations, functions and perform the operations associated with same.
2.	Use formal logic proof and logical reasoning to solve problems.
3.	To acquaint students with some basic concepts in Mathematics.

<b>Sr. No.</b>	<b>Outcome</b>
1.	Relate and apply techniques for constructing mathematical proofs and make use of appropriate set operations, propositional logic to solve problems.
2.	Use function or relation models to interpret associated relationships.
3.	Understand various types of matrices and operations on matrices

### **Evaluation Process:**

Evaluation process for each paper of 2 credit comprises of Continuous Internal Evaluation (CIE) for 20 marks and End Semester Examination (ESE) for 30 marks.

**For Continuous Internal Evaluation (CIE)**, evaluation will be done continuously. Internal assessment will be of **20** marks for a paper of 50 Marks. These 20 marks are divided as follows:

**CIE for 2 Credits Theory Paper:** It will be divided as follows:

Sr. No.	Components		Marks
1.	CIE I	There will be a compulsory Test on Demand MCQ Examination of <b>20</b> marks of each subject which would be converted into 5 Marks.	5
2.	CIE II	Two Class Tests 10 Marks Each. Converted to 5 Marks.	5
3.	CIE III	Mid Sem Exam of 20 Marks converted to 5 Marks.	5
4.	CIE IV	Participation in two activities at department/ college level 5 Marks	5
		In case of a student failing to score under the category, the attendance can be considered to give marks	
		<b>Total</b>	<b>20</b>

## Syllabus

Unit No	Title with Contents	No. of Lectures
<b>Unit I</b>	<b>Set Theory, Logic and functions</b>	<b>10</b>
	1. Propositional Logic.	2
	2. Propositional Equivalences.	2
	3. Sets.	2
	4. Set Operations.	2
	5. Functions.	2
<b>Unit II</b>	<b>Relations and Graphs</b>	<b>10</b>
	1. Relations and their properties.	1
	2. n- ary Relations and their applications.	1
	3. Representing Relations.	1
	4. Closure of Relations	1
	5. Equivalence Relations.	1
	6. Partial Orderings.	1
	7. Graphs and Graph Models.	1
	8. Graph Terminology and Special Graphs.	1



	9. Representing Graphs.	1
	10. Connectivity.	1
<b>Unit III</b>	<b>Linear Equations and Matrices</b>	<b>10</b>
	1. Linear systems	2
	2. Matrices Dot Product and Matrix Multiplication	2
	3. Matrix Transformations	2
	4. Solutions of Linear Systems of Equations	2
	5. LU- Factorization.	2

**Text book:**

1. KENNETH H ROSEN (Indian Adaptation by Kamala Krithivasan), Discrete Mathematics and Its Application with Combinatorics and Graph Theory, Seventh Edition, Special Indian Edition, McGraw Hill Education (India) Private Limited

Unit I: Chapter 1: Sec. 1.1, 1.2.,

Chapter 2: Sec. 2.1, 2.2, 2.3.

Unit II: Chapter 7: Sec. 7.1, 7.2, 7.3, 7.4, 7.5, 7.6.

Chapter 8: Sec. 8.1, 8.2, 8.3 (Only Representing Graphs), 8.4.

2. B. Kolman , D. Hill, Introductory Linear Algebra, An Applied First Course, Pearson Edn; 8th Edn; (2008)

Unit III: Chapter : 1

**Reference books:**

1. Bernard Kolman, Robert C. Busy, Sharon Cutler Ross, Discrete Mathematical Structures, Sixth Edition, PHI Learning Private Limited.

2. H. Anton, Chris Rorres, Linear Algebra with Applns., Wiley, 7th Edn; (1994)

**Website:**

1. [https://onlinecourses.nptel.ac.in/noc20\\_cs82/preview](https://onlinecourses.nptel.ac.in/noc20_cs82/preview).

**F.Y.B.B.A.C.A.( CBCS – Autonomy 2023 Pattern )**

**Under NEP 2020**

<b>Course Title : RELATIONAL DATABASE MANAGEMENT SYSTEM</b>	<b>Semester : II</b>
<b>Course Code : 23CBCA22 MM</b>	<b>No. of Credits : 02</b>
<b>Nature of Course : Major</b>	<b>Total Teaching Hours : 30 Hrs</b>

<b>Course Objectives</b>	
<b>1.</b>	Enables students to understand relational database concepts and transaction management concepts in database system.
<b>2.</b>	Enables student to write PL/SQL programs that use: procedure, function, package, cursor and trigger.
<b>3.</b>	Enable students to manage the concurrent transaction and Recovery System.

<b>Course Outcome</b>	
<b>1.</b>	Students will able to understand various RDBMS products, difference between DBMS and RDBMS and to get knowledge of Front End and Back end.
<b>2.</b>	Students will able to write PL/SQL programs using Exception Handling, Views, procedure, function, cursor, trigger and package.
<b>3.</b>	Students will able to understand Transaction Concepts, How to reduce the waiting time and recover the transaction from failure.
<b>4.</b>	Students will able to understand concept of concurrency and how to resolve issues during concurrent execution of transactions.
<b>5.</b>	Students learn different type of failure and recover the data from that failure.

<b>Syllabus</b>		
<b>Unit I</b>	<b>Introduction To RDBMS</b>	<b>02</b>
	<b>1. Introduction to popular RDBMS product and their features</b> <b>2. Difference Between DBMS and RDBMS</b> <b>3. Relationship among application programs and RDBMS</b>	
<b>Unit II</b>	<b>PLSQL</b>	<b>17</b>
	<b>1. Overview of PLSQL</b> <b>2. Data Types</b> <b>3. PLSQL Block</b> <b>4. Exception Handling</b> <ul style="list-style-type: none"> <li>i. Predefined</li> <li>ii. User defined exceptions</li> </ul> <b>5. Views</b> <b>6. Functions , Procedures</b> <b>7. Cursor</b> <ul style="list-style-type: none"> <li>i. Definition</li> <li>ii. Types of cursor- implicit, explicit (attributes)</li> </ul> <b>8. Trigger</b>	
<b>Unit III</b>	<b>Transaction Management</b>	<b>04</b>
	<b>1. Transaction Concept</b> <b>2. Transaction Properties</b> <b>3. Transaction States</b> <b>4. Concurrent Execution</b> <b>5. Serializability</b> <ul style="list-style-type: none"> <li>i. Conflict Serializability</li> <li>ii. View Serializability</li> </ul>	
<b>UNIT IV</b>	<b>Concurrency Control</b>	<b>04</b>
	<b>1. Lock Based Protocol</b> <ul style="list-style-type: none"> <li>i. Locks</li> <li>ii. Granting of Locks</li> <li>iii. Two Phase Locking Protocol</li> </ul> <b>2. Timestamp Based Protocol</b> <ul style="list-style-type: none"> <li>i. Timestamp</li> </ul>	

	ii. Timestamp ordering protocol iii. Thomas's Write Rule <b>4. Deadlock Handling</b> i. Deadlock Prevention ii. Deadlock Detection iii. Deadlock Recovery	
<b>UNIT V</b>	<b>Recovery System</b>	<b>03</b>
	<b>1. Failure Classification</b> i. Transaction Failure ii. System Crash iii. Disk Failure <b>2. Recovery &amp; Atomicity</b> i. Log based Recovery ii. Deferred Database Modification iii. Immediate Database Modification iv. Checkpoints	

<b>Suggested Readings</b>	
<b>1.</b>	Database System Concepts”, Silberschatz, Korth, Sudershan,”5th Edition, McGraw-Hill.
<b>2.</b>	Database Management System “,Bipin Desai,”4thEdition, Galgotia Publication.
<b>3.</b>	An Introduction to Database Systems”, C. J.Date, A.Kannan, S.Swamynathan,”8th Edition
<b>4.</b>	,”SQL/PLSQL the programming language of oracle”, Ivan Bayross 4th Revised Edition, BPB Publication
<b>5.</b>	<b>Website Reference Link:</b> <ul style="list-style-type: none"> <li>● <a href="https://docs.oracle.com/database/121/LNPLS/toc.htm">https://docs.oracle.com/database/121/LNPLS/toc.htm</a></li> <li>● <a href="https://www.tutorialspoint.com/plsql/index.htm">https://www.tutorialspoint.com/plsql/index.htm</a></li> <li>● <a href="https://www.techonthenet.com/oracle/index.php">https://www.techonthenet.com/oracle/index.php</a><a href="https://www.w3schools.com/sql/sql_intro.asp">https://www.w3schools.com/sql/sql_intro.asp</a></li> <li>● <a href="https://www.geeksforgeeks.org/sql-tutorial/">https://www.geeksforgeeks.org/sql-tutorial/</a></li> </ul>

**F.Y.B.B.A (C.A) Lab II – Practical on Relational Database Management System**

**2023-24 (CBCS – Autonomy 23 Pattern)**

**Under NEP 2020**

<b>Course Title : Lab II – Practical on Relational Database Management System</b>	<b>Semester : II</b>
<b>Course Code : 23CBCA21VS</b>	<b>No. of Credits : 02</b>
<b>Nature of Course : VSC</b>	<b>Total Teaching Hours : 30 Hrs</b>

**Aims & Objectives of the Course**

<b>Sr.No.</b>	<b>Objectives</b>
<b>1.</b>	To study basic concepts of Relational database management System
<b>2.</b>	To understand relational database concepts and transaction management concepts in database system.
<b>3.</b>	To understand how to Enables student to write PL/SQL programs that use: View, procedure, function, package, cursor and trigger.

**Expected Course Specific Learning Outcomes**

<b>Sr.No.</b>	<b>Learning Outcome</b>
<b>1.</b>	After completion of this course, students will able to write PL/SQL programs using view, procedure, function, package, cursor and trigger.

**Best IDE used for RDBMS :**

<b>Sr. No</b>	<b>Name of IDE or Tools</b>	<b>Latest Version</b>
1.	Oracle	10X
2.	Notepad	-

<b>Assignment No</b>	<b>Assignment Name</b>	<b>No. Of Sessions</b>
1	Assignment on Data Types: PL SQL Block and Control Structure	4
2	Assignment on Error and Exception	4
3	Assignment on View	4
4	Assignment on Function	5
5	Assignment on procedure	5
6	Assignment on cursors	4
7	Assignment on Triggers	4
	Total Number of Sessions	30

**F.Y.B.B.A.C.A.( CBCS – Autonomy 2023 Pattern )**

**Under NEP 2020**

<b>Course Title : Principles of Management</b>	<b>Semester : II</b>
<b>Course Code : 23CBCA21SE</b>	<b>No. of Credits : 02</b>
<b>Nature of Course : Major</b>	<b>Total Teaching Hours : 30 Hrs</b>

<b>Course Objectives</b>	
<b>1.</b>	To provide basic knowledge and understanding about various concepts of Business Management.
<b>2.</b>	To help the students to develop cognizance of the importance of management principles.
<b>3.</b>	To provide an understanding about various functions of management.
<b>4.</b>	To provide them tools and techniques to be used in the performance of the managerial job.

<b>Course Outcome</b>	
<b>1.</b>	The students will be able to understand the various functions and levels of management.
<b>2.</b>	The students will be able to understand the role of various Management Thinkers in development of Management and Motivational Theories.
<b>3.</b>	The students will be able to develop a Planning, decision making and controlling skills.
<b>4.</b>	The students will be able to developed Team building skills

<b>SYLLABUS</b>		
<b>UNIT - I</b>	<b>Management</b>	<b>10</b>
	<ol style="list-style-type: none"> <li>1. Meaning definition of Management</li> <li>2. Need for Management study</li> <li>3. Process and levels of management</li> <li>4. Functions of management</li> <li>5. Contribution of F.W. Taylor, Henry Fayol, Peter Drucker, Mintzberg and Michel Porter in development of management thoughts</li> </ol>	
<b>UNIT - II</b>	<b>Motivation</b>	<b>10</b>
	<ol style="list-style-type: none"> <li>1. Meaning, Importance and Theories of motivation</li> <li>2. Maslow's Need Hierarchy Theory</li> <li>3. Herzberg's Two Factor Theory</li> <li>4. Douglas MC Gregor's Theory of X and Y</li> <li>5. Ouchi's Theory Z</li> <li>6. McClelland's Theory</li> </ol>	
<b>UNIT - III</b>	<b>Planning and Direction</b>	<b>10</b>
	<p><b>Planning</b></p> <ol style="list-style-type: none"> <li>1. Meaning, definition and nature of Planning</li> <li>2. Forms and types of Planning</li> <li>3. Steps in Planning</li> <li>4. Limitations of Planning</li> <li>5. Meaning and techniques of Forecasting</li> <li>6. Meaning, Types and Steps in Decision Making</li> </ol> <p><b>Direction</b></p> <ol style="list-style-type: none"> <li>1. Meaning, Elements, Principles,</li> <li>2. Techniques and Importance of Direction.</li> <li>3. Concept of Team Work, Group Dynamics and principles regarding interpersonal communication and Group Behaviour</li> </ol>	



### SUGGESTED READINGS

1.	Horold Koontz and Itainz Weibrich, Essentials of Management – McGraw hills International
2.	J.N.Chandan, Management Theory & Practice ( Latest Edition )
3.	K.A Swathapa, Essential of Business Administration, Himalaya Publishing House
4.	Dr. L. M. Parasad, Principles & practice of management, Sultan Chand & Sons - New Delhi ( Latest Edition )
5.	J. S. Chandan, Management: Concept and Strategies, Vikas Publishing House ( Latest Edition )
6.	Tripathi, Reddy, Principles of Management, Tata McGraw Hill, ( Latest Edition )
7.	Dr. L.M.Parasad, Principles & practice of management, Sultan Chand & Sons - New Delhi ( Latest Edition )
8.	J. S. Chandan, Management: Concept and Strategies, Vikas Publishing House ( Latest Edition )
9.	Francis Cherunilam, Business Environment and Policy – A book on Strategic Management, ( Latest Edition )
10.	Dr. Y.K. Bhushan, Business Organization & Management, Sultan Chand & Sons - New Delhi ( Latest Edition )

<b>Course Title : CYBER LAW</b>	<b>Semester :I</b>
<b>Course Code : 23CBCA10E</b>	<b>No. of Credits : 02</b>
<b>Nature of Course :Theory</b>	<b>Total Teaching Hours : 30 Hrs</b>

<b>Course Objectives</b>	
<b>1.</b>	The course aims to provide with the legal aspects of cyberspace.
<b>2.</b>	It aims to train the student to the basic concepts of the internet.
<b>3.</b>	This course involves issues of contract, jurisdiction, data protection laws, privacy, and freedom of expression in the digital space using NDB. Component which is designed to give the student hands-on experience with the concepts.

<b>Course Outcome</b>	
<b>1.</b>	Identify situations where computational methods and computers would be useful.
<b>2.</b>	Given a computational problem where learner Conversant With The Social And Intellectual Property Issues Emerging From Cyberspace.
<b>3.</b>	Approach the programming tasks using techniques to work with NDB (National Database).
<b>4.</b>	Use the comparisons to explore the legal and policy developments in various countries to regulate cyberspace.

<b>Syllabus</b>		
<b>Unit I</b>	<b>Basic of computer and Cyber Security</b>	<b>06</b>
	1. History of Computers, Areas of Application 2. Computers and its components, Application Software and System Software 3. Introduction to Operating System 4. Basics of Networks and internet, Types of Network, Definition of Cyber Security 5. Search Engines, E –mails and WWW; Internetworking Devices, Internet Service provider, IP Address, Working of Email system, Domain Name System, Blogs, Peer to peer sharing	1 2 2 1
<b>Unit II</b>	<b>Computer &amp; Cyber Security:</b>	<b>08</b>
	1. Types of Attacks, 2. Types of Attacks, 3. Network Security 4. Overview of Security threats, 5. Hacking Techniques, 6. Password cracking 7. Insecure Network connections, 8. Malicious code 9. (h) Concept of Fire wall Security	4     4
<b>Unit III</b>	<b>Evolution of It Act</b>	<b>08</b>
	1. Evolution of the IT Act, Genesis and Necessity 2. Salient features of the IT Act, 2000, various authorities under IT Act and their powers. ; Penalties & Offences, amendments. 3. Impact on other related Acts (Amendments) : (a) Amendments to Indian Penal Code.	2   1  2  2

	(b) Amendments to Indian Evidence Act. (c) Amendments to Bankers Book Evidence Act. (d) Amendments to Reserve Bank of India Act.	2
<b>Unit IV</b>	<b>Cyber Law : International Perspective</b>	<b>08</b>
	1. EDI: Concept and legal Issues.	3
	2. UNCITRAL Model Law.	3
	3. Electronic Signature Law's of Major Countries	2
	4. Cryptography Laws	
	5. Cyber Law's of Major Countries	

<b>Suggested Readings</b>	
<b>1.</b>	.K.Kumar," Cyber Laws: Intellectual property & E Commerce, Security-NDB",1
<b>2.</b>	Rodney D. Ryder, " Guide To Cyber Laws", Second Edition, Wadhwa And Company, New Delhi, 2007.
<b>3.</b>	Information Security policy & implementation Issues, NIIT, PHI.
<b>4.</b>	Vakul Sharma, "Handbook Of Cyber Laws" Macmillan India Ltd
<b>5.</b>	Justice Yatindra Singh, " Cyber Laws", Universal Law Publishing
<b>6.</b>	Sharma, S.R., "Dimensions Of Cyber Crime", Annual Publications Pvt. Ltd., 1st Edition, 2004.
<b>7.</b>	Augastine, Paul T., " Cyber Crimes And Legal Issues", Crecent Publishing Corporation, 2007.