



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

471

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) **BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)**

PEO 1	An ability to apply knowledge of mathematics, computer science and management in practice.
PEO 2	An ability to apply knowledge of mathematics, computer science and management in practice.
PEO 3	The program prepares the young professional for a range of computer applications, computer organization, techniques of Computer Networking, Software Engineering, Web development, Database management and Advance Java
PEO 4	An ability to design a computing system to meet desired needs within realistic constraints such as safety, security and applicability in multidisciplinary teams with positive attitude.
PEO 5	An ability to communicate effectively. In order to enhance programming skills of the young IT professionals, the program has introduced the concept of project development in each language/technology learnt during semester.
PEO 6	To prepare the graduates as successful professionals in Industry, Government sectors, Academia and Consultancy firms.

UNDERGRADUATE (UG) PROGRAMME OUTCOMES (POs)

PO 1	Critical Thinking: Intellectual exploration of knowledge towards actions in clear and rational manner by understanding the logical connections between ideas and decisions.
PO 2	Problem Solving: Understanding the task/ problem followed by planning and narrow execution strategy that effectively provides the solution.
PO 3	Effective Communication: Knowledge dissemination by oral and verbal mechanisms to the various components of our society.
PO 4	Societal/ Citizenship/ Ethical Credibility: Realization of various value systems/ moral dimensions and demonstrate the empathetic social concern as well as equity in all the decisions, executions and actions.
PO 5	Environmental Concern and Sustainable Growth: Understanding the emerging environmental challenges and provide the possible contribution in sustainable development that integrates environment, economy and employment.
PO 6	Skill Development and Employable Abilities: Adequate training in relevant skill sector and creating employable abilities among the under graduates.



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

472

PROGRAMME SPECIFIC OUTCOMES (PSOs)

On completion of **BCA Programme**, the students are expected /will be able to

PSO 1	develop as professionally competent citizens by applying the scientific knowledge of Computer Science with the ability to think clearly, rationally and creatively to support in evolving solutions to the social/public/scientific issues with responsible democratic participation
PSO 2	enterprise resourcefulness to identify, plan, formulate, design and evaluate solutions for complex computing problems that address the specific needs with appropriate consideration for Societal, Cultural, Environmental and Industrial domains.
PSO 3	develop holistically to ignite the lateral thinking ability in problem solving, acquisition of new skills, open-minded and organized way of facing problems with self awareness and evolving analytical solutions
PSO 4	create and initiate innovations effectively and communicate efficiently with the computing community and society at large to bridge the gap between computing industry and academia
PSO 5	understand, assess and committed to professional and ethical principles, norms and responsibilities of the cyber world through Digital Literacy, and the ability for work efficacy as a part of a team and engage effectively with diverse stakeholders
PSO 6	willingly embark on new ventures and initiatives with critical thinking and desire for more continuous learning focusing on life skills.



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

473

BACHELOR OF COMPUTER APPLICATIONS – II YEAR

COURSE STRUCTURE – SEMESTER – III

S. No.	Course Code	Part	Course Title	Hrs. / Week	Exam (Hrs.)	CA	SE	Total Marks	Credits
1	24UACT31	I	Tamil – பொதுத் தமிழ் – III	6	3	25	75	100	3
	24UACH31		Hindi – General Hindi – III						
	24UACS31		Sanskrit – Drama Grammar and History of Sanskrit Literature						
2	24UACE31	II	English – General English – III	6	3	25	75	100	3
3	24UCAC31	III	Core – 5: Java Programming	5	3	25	75	100	5
4	24UCACP3		Core – 6: Lab: Java Programming	5	3	40	60	100	5
5	24UCAA31		Elective/Allied – 3: Resource Management Technique	4	3	25	75	100	3
6	24UCANP1	IV	SEC: NME – 1: Lab: Advanced Excel	2	3	40	60	100	2
7	24UCAS31		SEC: Understanding Internet	2	3	25	75	100	2
			TOTAL	30				700	23

SEMESTER – IV

S. No.	Course Code	Part	Course Title	Hrs. / Week	Exam (Hrs.)	CA	SE	Total Marks	Credits
1	24UACT41	I	Tamil – பொதுத் தமிழ் – IV	6	3	25	75	100	3
	24UACH41		Hindi – General Hindi – IV						
	24UACS41		Sanskrit – Alankara, Didactic & Modern Literature and Translation						
2	24UACE41	II	English – General English – IV	6	3	25	75	100	3
3	24UCAC41	III	Core-7: Data Structure and Algorithm	5	3	25	75	100	5
4	24UCACP4		Core-8: Lab: Data Structure and Algorithm using C	5	3	40	60	100	4
5	24UCAA41		Elective/Allied – 4: Numerical Methods	4	3	25	75	100	3
6	24UCAN41		SEC: NME – 2: Office Automation	2	3	25	75	100	2
7	24UCASP2	IV	SEC: Lab: Web Designing	2	3	40	60	100	2
8		V	Extension Activity	–	–	–	–	100	1
			TOTAL	30				800	23

Passed in the BoS Meeting held on 27/02/2025

Signature of the Chairman



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

474

COURSE STRUCTURE – SEMESTER – III

S. No.	Course Code	Part	Course Title	Hrs. / Week	Exam (Hrs.)	CA	SE	Total Marks	Credits
1	24UACT31	I	Tamil – பொதுத் தமிழ் – III	6	3	25	75	100	3
	24UACH31		Hindi – General Hindi – III						
	24UACS31		Sanskrit – Drama Grammar and History of Sanskrit Literature						
2	24UACE31	II	English – General English – III	6	3	25	75	100	3
3	24UCAC31	III	Core – 5: Java Programming	5	3	25	75	100	5
4	24UCACP3		Core – 6: Lab: Java Programming	5	3	40	60	100	5
5	24UCAA31		Elective/Allied – 3: Resource Management Technique	4	3	25	75	100	3
6	24UCANP1	IV	SEC: NME – 1: Lab: Advanced Excel	2	3	40	60	100	2
7	24UCAS31		SEC: Understanding Internet	2	3	25	75	100	2
			TOTAL	30				700	23

CA – Class Assessment (Internal)

SE – Summative Examination

SEC – Skill Enhancement Course

NME – Non –Major Elective

T – Theory

P – Practical



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

475

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCAC31	JAVA PROGRAMMING	CORE – 5	5	—	5

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	III	25	75	100

Curriculum Design and Development	Employability	✓	Skill Oriented	✓	Entrepreneurship	✓
	National	Local	Regional		Global	✓
Curriculum Enrichment	Professional Ethics	Gender	Environment and Sustainability		Human Values	Other Values ✓

COURSE DESCRIPTION:

This course facilitates the students with the comparative knowledge of procedure oriented programming and applet programming paradigm. It also provides the object oriented programming features which supports modular programming and applet programming features which support web based programming.

COURSE OBJECTIVES:

- To introduce Object oriented programming and Applet programming concepts using JAVA and improve their OOP and Applet programming Skills.
- To introduce Object oriented programming and java programming features– Encapsulation, Polymorphism, Inheritance, Multithreading, Exception handling, Interface, Package and Applets and Graphics.
- To develop programs for data file access using JAVA streams classes

COURSE OUTCOMES (COs):

After the completion of the course, the students will be able to

No.	Course Outcomes	Knowledge Level (According to Bloom's Taxonomy)
CO 1	outline the basic concepts of Object oriented programming and java evolution and features	Upto K3
CO 2	recognize the basic concepts of OOP, java features and its applications.	Upto K3
CO 3	illustrate object oriented programs using classes and objects and Applet and Graphics programs.	Upto K3
CO 4	apply object oriented programs ,multithreading, exception handling, interface, package and applet program that can focus on java features	Upto K3
CO 5	demonstrate compile time polymorphism and runtime polymorphism with overloading and interface and File concepts	Upto K3

K1– KNOWLEDGE (REMEMBERING), K2–UNDERSTANDING, K3–APPLYING



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

476

JAVA PROGRAMMING

UNIT– I: JAVA EVOLUTION

Java features – Differs from C and C++ – Java and Internet – Java Environment.

OVERVIEW OF JAVA LANGUAGE: Introduction – Simple Java Program – Java Program Structure – Tokens – Statements – Implementation – JVM – Command Line Arguments – Constants, Variables and Data Types Data types – Variables – Type conversion and casting – Automatic type promotion in Expressions – Strings. Arrays: One Dimensional Array – Multi Dimensional Array – Operators – Control statements.

UNIT– II: OPERATORS AND EXPRESSIONS

Decision Making and Branching – **DECISION MAKING AND LOOPING** : Introduction – The while Statement – The Do Statement – The For Statement – **CLASSES,**

OBJECTS AND METHODS: Introduction – Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing Class Members – Constructors – Methods Overloading – Static Members – Nesting of Methods– **INHERITANCE:**

Extending a class – Overriding Methods

UNIT– III: MANAGING ERRORS AND EXCEPTION

Introduction – Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement – Throwing Our Own Exceptions –

INTERFACES : MULTIPLE INHERITANCE: Introduction – Defining Interfaces – Extending Interfaces – Implementing Interfaces

UNIT– IV: PACKAGES

PUTTING CLASSES TOGETHER: Introduction – Java API Packages – Using System Packages – Naming Conventions – Creating Packages – Accessing a Package – Using a Package – Adding a class to a package. **MULTITHREADED PROGRAMMING:** Introduction – Creating Threads – Extending the Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread – Using Thread Methods – Thread Exceptions – Thread priority – Synchronization – Implementing the Runnable Interface – Inter-thread Communication

UNIT– V: APPLET PROGRAMMING

Introduction – How Applets Differ from Applications – Preparing to Write Applets – Building Applet Code – Applet Life Cycle – Creating an Executable Applet – Designing a Web Page – Applet Tag – Adding Applet to HTML File – Running the Applet – More About Applet Tag – Passing Parameters to Applets – Aligning the Display – More About HTML Tags – Displaying Numerical Values – Getting Input from the User – Event Handling. **MANAGING INPUT/OUTPUT FILES IN JAVA** :Introduction – Concept of Streams – Stream Classes – Character Stream Classes – Using Streams – Creation of Files – Reading/Writing Characters – Reading/Writing Bytes



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

477

TEXT BOOKS:

Programming with Java, A Primer, 3e, E. Balagurusamy, TATA McGraw-Hill Company, 2008. (Chapters : 1 to 16)

UNIT I : Chapters: 1, 2, 3, 4

UNIT II : Chapters: 5, 6, 7, 8

UNIT III : Chapters: 9, 10, 11

UNIT IV : Chapters: 12, 13, 14

UNIT V : Chapters: 15, 16.1 to 16.12

REFERENCE BOOKS:

1. *Java and Object–Oriented Programming Paradigm*, Debasish Jana, Prentice–Hall of India Private Limited, New Delhi, 2008.
2. *JAVA2–The Complete Reference*, Herbert schildt, Tata Mcgraw–Hill publishing Company Ltd, New Delhi ,5th edition,2008

DIGITAL TOOLS:

www.tutorialspoint.com/java

<http://www.w3schools.in/java-tutorial/>

<http://www.guru99.com/java-tutorial/>

<https://www.programiz.com/java-programming>

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3					
CO2		2	1			2
CO3	3					
CO4	2		2	2		1
CO5	2	2	2	3	2	1

3. Advanced Application 2. Intermediate Development 1. Introductory Level



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

478

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCACP3	LAB: JAVA PROGRAMMING	CORE – 6 LAB	—	5	5

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	III	40	60	100

Curriculum Design and Development	Employability	✓	Skill Oriented		✓	Entrepreneurship		✓
	National	Local	Regional			Global		✓
Curriculum Enrichment	Professional Ethics	Gender	Environment and Sustainability			Human Values	Other Values	✓

COURSE DESCRIPTION:

This course facilitates the students with the comparative knowledge of procedure oriented programming and applet programming paradigm. It also provides the object oriented programming features which supports modular programming and applet programming features which support web based programming.

COURSE OBJECTIVES:

- To introduce Object oriented programming and Applet programming concepts using JAVA and improve their OOP and Applet programming Skills.
- To introduce Object oriented programming and java programming features– Encapsulation, Polymorphism, Inheritance, Multithreading, Exception handling, Interface, Package and Applets and Graphics.
- To develop programs for data file access using JAVA streams classes



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

479

LAB: JAVA PROGRAMMING

1. To perform addition of complex numbers using class and objects.
2. To perform multiplication of matrices using class and objects.
3. To perform area and volume calculation using method overloading and overriding.
4. Using command line arguments, test if the given string is palindrome or not.
5. Write a program to fill names into a list. Also, copy them in reverse order into another list. If the name contains any numeric value throw an exception “Invalid Name” using multilevel inheritance process student marks.
6. Implement multiple inheritances for payroll processing.
7. Create a package called “Arithmetic” that contains methods to deal with all arithmetic operations. Also, write a program to use the package.
8. Create two threads such that one of the thread print even no's and another prints odd no's up to a given range.
9. Define an exception called “Marks Out Of Bound” Exception, that is thrown if the entered marks are greater than 100.
10. String manipulation using string methods (Use of any five String methods preferred)
11. File – byte stream.
12. File – character stream.
13. Write an Applet illustrating sequence of events in an applet.
14. Write an Applet program to design a simple calculator.
15. Write an Interactive Applet program which will make the balls of various colours to move across the screen within the specified time limit. The number of balls and the time limit for ball animation should be obtained from the User when the applet starts.

TEXT BOOK:

Programming with Java, A Primer, 3e, E. Balagurusamy, TATA McGraw–Hill Company, 2008.(Chapters : 1 to 16)

REFERENCE BOOKS:

1. *Java and Object–Oriented Programming Paradigm*, Debasish Jana, Prentice–Hall of India Private Limited, New Delhi, 2008.
2. *JAVA2–The complete reference*, Herbert schildt, Tata Mcgraw–Hill publishing Company Ltd, New Delhi ,5th edition,2008

DIGITAL TOOLS:

www.tutorialspoint.com/java, <http://www.w3schools.in/java-tutorial/>
<http://www.guru99.com/java-tutorial/>, <https://www.programiz.com/java-programming>

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3					2
CO2		2	1			2
CO3	3					2
CO4	2		2	2		1
CO5	2	2	2	3	2	1

3. Advanced Application 2. Intermediate Development 1. Introductory Level



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

480

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCAA31	RESOURCE MANAGEMENT TECHNIQUE	ELECTIVE/ ALLIED – 3	4	–	3

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	III	25	75	100

Curriculum Design and Development	Employability		Skill Oriented		Entrepreneurship		✓
	National	Local	Regional	Global			✓
Curriculum Enrichment	Professional Ethics	Gender	Environment and Sustainability	Human Values	Other Values		✓

COURSE DESCRIPTION:

This course is designed to teach various concepts of Resource Management Technique to the students.

COURSE OBJECTIVES:

- To Explain the brief history of Resource Management Technique.
- To Explain how to formulate the general Linear Programming Problem and solve by Graphical method.
- To Explain the algorithm and method to solve Simplex and Big – M method.
- To Explain the Hungarian algorithm and method to solve Assignment problems
- To Explain and Solve the various methods in Transportation problems.

COURSE OUTCOMES (COs):

After the completion of the course, the students will be able to

No.	Course Outcomes	Knowledge Level (According to Bloom's Taxonomy)
CO 1	state the history of Resource Management Technique	Upto K3
CO 2	describe Linear Programming Problem and Solve by using Graphical method	Upto K3
CO 3	solve Simplex method and Big – M method	Upto K3
CO 4	demonstrate and solve Assignment problems and Travelling Salesman problem	Upto K3
CO 5	illustrate various methods in Transportation problem	Upto K3

K1– KNOWLEDGE (REMEMBERING), K2–UNDERSTANDING, K3–APPLYING

Passed in the BoS Meeting held on 27/02/2025

Signature of the Chairman



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

481

RESOURCE MANAGEMENT TECHNIQUE

UNIT – I:

Introduction – Role of OR – Classification of models – Characteristics of a good model – Principles of Modelling – General methods for solving O.R. – Main phases of O.R. – Limitation

UNIT – II: FORMULATION AND GRAPHICAL SOLUTION

Introduction –Formulation of LPP –Basic assumptions – Graphical method of the Solution of a LPP –some more cases – Advantage of Linear Programming – Limitations of Linear Programming

UNIT – III: GENERAL LINEAR PROGRAMMING

General Linear Programming Problem – Definition – Canonical and Standard forms of LPP –Simplex method – Simplex Algorithm – Artificial Variables Technique – Big M Method(Example problems only)

UNIT – IV: TRANSPORTATION MODEL

Introduction – Mathematical Formulation of TP – Methods of finding IBFS – MODI method (Test for optimal solution) – Degeneracy in TP – Unbalanced TP

UNIT – V: ASSIGNMENT PROBLEM

Introduction – Mathematical formulation of an AP – Assignment Algorithm – Unbalanced AP – Maximization case in AP – Restrictions in Assignments – Travelling Salesman problem.

TEXT BOOKS: Resource Management Techniques

Author: Prof. V. Sundaresan, K. S. Ganapathy Subramanian, K. Ganeshan

Publications : A. R. Publications

Unit –1 Section 1.1 – 1.9, Page no. 1.1 – 1.8

Unit –2 Section 2.1 – 2.8, Page no. 2.1 – 2.41

Unit –3 Section 3.1.1 – 3.1.4, 3.2, 3.2.1, Page no. 3.1 – 3.42

Unit –4 Section 7.1 – 7.5, Page no. 7.1 – 7.64

Unit –5 Section 8.1 – 8.9, Page no, 8.1 – 8.49

REFERENCE BOOKS:

Linear Programming Problem , (ii) Operation Research. Arumugam and Isaac, Kanti and Swarup, Manmohan Publications. Prentice Hall, 2002, Harvard University Press, 2001.

DIGITAL TOOLS:

<https://www.scribd.com/document/435954053/RESOURCE-MANAGEMENT-TECHNIQUES>

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	2	1	1	1
CO2	1	2	2	1	1	2
CO3	1	2	2	1	1	2
CO4	1	2	2	1	1	1
CO5	1	2	2	1	1	1

3. Advanced Application 2. Intermediate Development 1. Introductory Level



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

482

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCANP1	LAB: ADVANCED EXCEL	SEC NME – 1 LAB	—	2	2

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	III	40	60	100

Curriculum Design and Development	Employability		✓	Skill Oriented		✓	Entrepreneurship		✓
	National		Local		Regional		Global		✓
Curriculum Enrichment	Professional Ethics		Gender		Environment and Sustainability		Human Values		Other Values ✓

COURSE DESCRIPTION:

This course is designed to learn various features for Advanced Excel in MS–OFFICE.

COURSE OBJECTIVES:

- Handle large amounts of data
- Aggregate numeric data and summarize into categories and subcategories
- Filtering, sorting, and grouping data or subsets of data
- Create pivot tables to consolidate data from multiple files
- Presenting data in the form of charts and graphs



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

483

ADVANCED EXCEL LAB

1. Use Excel functions like SUM, AVERAGE, MAX, and MIN to calculate totals, averages, and other basic statistics.
2. Set up data validation rules to control data input and prevent errors in your spreadsheet.
3. Create simple bar charts, line charts, and pie charts to visualize data trends
4. Filter and Sort data to quickly find information in large datasets.
5. Write basic IF statements to perform conditional calculations in your spreadsheet
6. Create data tables to perform sensitivity analysis or to display multiple scenarios of a calculation.
7. Practice text functions like CONCATENATE, LEFT, RIGHT, and TRIM to clean and manipulate text data
8. Use functions like VLOOKUP and HLOOKUP to search for and retrieve specific data from a table.
9. Build a PivotTable to summarize and analyze data from a large dataset
10. Apply conditional formatting rules to highlight specific data based on certain criteria
11. Use Subtotal function to group and summarize data in a list.
12. Use date and time functions to calculate dates, durations and time differences

TEXT BOOK:

M Alexander , *Microsoft Excel 365 BIBLE*, 2022,Wiley

REFERENCE BOOKS:

1. Wanyne. L. Winston, *Market Analytics Data Driven Technique with Microsoft Excel*, 2014
2. Punit Prabhu, *Data Analytics with Excel*, 2019
3. Manisha Nigam, *Advanced Analytics with Excel*, 2019, BPB Publications

DIGITAL TOOLS:

<https://www.coursera.org/learn/excel-data-analysis>

<https://www.udemy.com/course/data-analytics-in-excel/>

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3					
CO2		2	1			2
CO3	3					
CO4	2		2	2		1
CO5	2	2	2	3	2	1

3. Advanced Application 2. Intermediate Development 1. Introductory Level



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

484

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCAS31	UNDERSTANDING INTERNET	SEC	2	—	2

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	III	25	75	100

Curriculum Design and Development	Employability		✓	Skill Oriented		✓	Entrepreneurship			✓
	National		Local		Regional		Global			✓
Curriculum Enrichment	Professional Ethics		Gender		Environment and Sustainability		Human Values		Other Values	✓

COURSE DESCRIPTION:

To learn the basic concept and access of Internet.

COURSE OBJECTIVES:

To make the students

- know of Internet medium
- understand Internet as a mass medium
- understand the features of Internet Technology
- understand Internet as source of infotainment
- study internet audiences and about cyber-crime

COURSE OUTCOMES (COs):

After the completion of the course, the students will be able to

No.	Course Outcomes	Knowledge Level (According to Bloom's Taxonomy)
CO 1	know the basic concept in internet Concept of mass medium and world wide web.	Upto K3
CO 2	know the concept of internet as a technology	Upto K3
CO 3	understand the concept of infotainment and classification based on content And style.	Upto K3
CO 4	know about Demographic and psychographic description of Internet.	Upto K3
CO 5	understand the concept of cyber-crime and future possibilities.	Upto K3

K1– KNOWLEDGE (REMEMBERING), K2–UNDERSTANDING, K3–APPLYING



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

485

UNDERSTANDING INTERNET

UNIT– I: EMERGENCE OF INTERNET

The emergence of internet as a mass medium – the world of world wide web

UNIT– II: FEATURES OF INTERNET

Features of internet as a technology

UNIT– III: CLASSIFICATION

Internet as a source of infotainment – classification based on content and style

UNIT– IV: EFFECT OF INTERNET

Demographic and psychographic descriptions of internet–audiences – effect of internet on the values and life – styles

UNIT– V: ISSUES AND POSSIBILITIES

Present issues such as cyber–crime and future possibilities

TEXT BOOKS

1. *Barnouw.E and Krishnaswamy S [1990], Indian Film, New York, OUP.*
2. *Kumar, Keval [1999] Mass Communication in India. Mumbai, Jaico.*
3. *Srivastava, KM [1992] Media Issues. Sterling Publishers Pvt Ltd.*

REFERENCE BOOKS:

1. Acharya, RN [1987] *Television in India*. Manas Publications, New Delhi.
2. Barnouw, E [1974] *Documentary – A History of Non-fiction*. Oxford, OUP
3. Luthra, HR [1986] *Indian Broadcasting. Ministry of I & B*, New Delhi.
4. Vasudev, Aruna [1986] *The New Indian Cinema*. Macmillan India, New Delhi

DIGITAL TOOLS:

<https://www.teachucomp.com/samples/html/5/manuals/MasteringHTML5–CSS3.pdf>

<https://www.w3schools.com/html/default.asp>

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	1	2	2		2
CO2	1	2		1	1	2
CO3		2	2	1	2	
CO4	1			1	1	2
CO5	1	2	2	1	1	1

3. Advanced Application 2. Intermediate Development 1. Introductory Level



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

486

COURSE STRUCTURE – SEMESTER – IV

S. No.	Course Code	Part	Course Title	Hrs. / Week	Exam (Hrs.)	CA	SE	Total Marks	Credits
1	24UACT41	I	Tamil – பொதுத் தமிழ் – IV	6	3	25	75	100	3
	24UACH41		Hindi – General Hindi – IV						
	24UACS41		Sanskrit – Alankara, Didactic & Modern Literature and Translation						
2	24UACE41	II	English – General English – IV	6	3	25	75	100	3
3	24UCAC41	III	Core-7: Data Structure and Algorithm	5	3	25	75	100	5
4	24UCACP4		Core – 8: Lab: Data Structure and Algorithm using C	5	3	40	60	100	4
5	24UCAA41		Elective/Allied – 4: Numerical Methods	4	3	25	75	100	3
6	24UCAN41		SEC: NME – 2 : Office Automation	2	3	25	75	100	2
7	24UCASP2	IV	SEC: Lab: Web Designing	2	3	40	60	100	2
8		V	Extension Activity	–	–	–	–	100	1
			TOTAL	30				800	23

*All students will do internship after IV Semester. The evaluation will be done in the beginning of V Semester and marks will be included in the V Semester mark sheet.

CA – Class Assessment (Internal)

SE – Summative Examination

SEC – Skill Enhancement Course

NME – Non –Major Elective

T – Theory

P – Practical



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

487

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCAC41	DATA STRUCTURE AND ALGORITHM	CORE – 7	5	—	5

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	IV	25	75	100

Curriculum Design and Development	Employability	✓	Skill Oriented	✓	Entrepreneurship	✓
	National	Local	Regional		Global	✓
Curriculum Enrichment	Professional Ethics	Gender	Environment and Sustainability		Human Values	Other Values ✓

COURSE DESCRIPTION

This course aims to impart fundamental knowledge on application of data structures in problem solving using several predefined algorithms.

COURSE OBJECTIVES

- To impart knowledge and skill on identifying apt data structures to solve problems efficiently.
- To impart skill to write time and space efficient algorithms.
- To give knowledge on the concepts and applications of (i) linear data structures viz., arrays, stacks, queues (ii) linked linear data structures viz., linked lists, linked stacks and linked queues and (iii) Non-linear data structures viz., trees, binary trees
- To give knowledge on various sorting and searching algorithms
- To impart knowledge about File organization

COURSE OUTCOMES (COs):

After the completion of the course, the students will be able to

No.	Course Outcome	Knowledge Level (According to Bloom's Taxonomy)
CO 1	identify data structures needed to solve specific problems	Upto K3
CO 2	analyze the data structures for effective use in problem solving	Upto K3
CO 3	design and develop efficient algorithms in terms of Space and Time	Upto K3
CO 4	troubleshoot algorithms	Upto K3
CO 5	analyze time complexity of algorithms	Upto K3

K1-KNOWLEDGE(REMEMBERING),K2-UNDERSTANDING,K3-APPLYING



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

488

DATA STRUCTURES AND ALGORITHMS

UNIT- I:

Introduction of algorithms, analyzing algorithms, Arrays : Representation of Arrays, Implementation of Stacks and queues, Application of Stack: Evaluation of Expression – Infix to postfix Conversion – Multiple stacks and Queues, Sparse Matrices.

UNIT- II:

Linked list: Singly Linked list – Linked stacks and queues – polynomial addition – More on linked Lists – Doubly linked List and Dynamic Storage Management – Garbage collection and compaction.

UNIT- III:

Trees: Basic Terminology – Binary Trees – Binary Tree representations – Binary trees – Traversal – More on Binary Trees – Threaded Binary trees – counting Binary trees. Graphs: Terminology and Representations – Traversals, connected components and spanning Trees, Single Source Shortest path problem.

UNIT- IV:

Symbol Tables : Static Tree Tables – Dynamic Tree Tables – Hash Tables : Hashing Functions – overflow Handling. External sorting : Storage Devices – sorting with Disks : K-way merging – sorting with tapes.

UNIT- V:

Internal sorting : Insertion sort – Quick sort – 2 way Merge sort – Heap sort – shell sort – sorting on keys. Files: Files, Queries and sequential organizations – Index Techniques – File organization.

TEXT BOOK:

Ellis Horowitz, Sartaj Shani, *Data Structures*, Galgotia Publications.

REFERENCE BOOKS:

1. *Data Structures Using C* Aaron M. Tenenbaum, Yedidyah Langsam, Moshe J. Augenstein, Kindersley (India) Pvt. Ltd.,
2. *Data Structure and Algorithms*, Alfred V. Aho, John E. Hopcroft, Jeffrey D. Ullman, Pearson Education Pvt. Ltd.,

DIGITAL TOOLS:

<https://www.computer-pdf.com/programming/781-tutorial-data-structure-and-algorithm-notes.html>

<https://www.cs.princeton.edu/courses/archive/spr11/cos217/lectures/08DsAlg.pdf>

https://www.iare.ac.in/sites/default/files/lecture_notes/IARE_DS_Lecture_NO_TES2.pdf

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2		2	1		
CO2		2	1			1
CO3		2	2		2	
CO4	2			1		3
CO5		2	1	1	2	3

3. Advanced Application 2. Intermediate Development 1. Introductory Level



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

489

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCACP4	LAB: DATA STRUCTURE AND ALGORITHM USING C	CORE – 8 LAB	—	5	4

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	IV	40	60	100

Curriculum Design and Development	Employability	✓	Skill Oriented	✓	Entrepreneur ship	✓
	National	Local	Regional		Global	✓
Curriculum Enrichment	Professional Ethics	Gender	Environment and Sustainability		Human Values	Other Values ✓

COURSE DESCRIPTION

This course aims to impart fundamental knowledge on application of data structures in problem solving using several predefined algorithms.

COURSE OBJECTIVES

- To impart knowledge and skill on identifying apt data structures to solve problems efficiently.
- To impart skill to write time and space efficient algorithms.
- To give knowledge on the concepts and applications of (i) linear data structures viz., arrays, stacks, queues (ii) linked linear data structures viz., linked lists, linked stacks and linked queues and (iii) Non-linear data structures viz., trees, binary trees
- To give knowledge on various sorting and searching algorithms
- To impart knowledge about File organization

COURSE OUTCOMES (COs):

After the completion of the course, the students will be able to

No.	Course Outcome	Knowledge Level (According to Bloom's Taxonomy)
CO 1	identify data structures needed to solve specific problems	Upto K3
CO 2	analyze the data structures for effective use in problem solving	Upto K3
CO 3	design and develop efficient algorithms in terms of Space and Time	Upto K3
CO 4	troubleshoot algorithms	Upto K3
CO 5	analyze time complexity of algorithms	Upto K3

K1–KNOWLEDGE (REMEMBERING), K2–UNDERSTANDING, K3–APPLYING



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

490

LAB: DATA STRUCTURE AND ALGORITHM USING C

1. Write a C program to create two array list of integers. Sort and store the elements of both of them in third list.
2. Write a C program to multiply two matrices A and B and store the resultant matrix in C using arrays.
3. Write a C program to experiment the operation of STACK using array.
4. Write a C program to create menu driven options to implement QUEUE to perform the following
 - (i) Insertion (ii) Deletion (iii) Modification (iv) Listing of elements
5. Write a C program to create Linked list representations of employee records and do the following operations using pointers.
 - (i) To add a new record
 - (ii) To delete an existing record.
 - (iii) To print the details about an employee.
 - (iv) To find the number of employees in the structure.
6. Write a C Program to count the total nodes of the linked list.
7. Write a C program to insert an element at the end of the linked list.
8. Write a C program to insert an element at the beginning of a doubly linked list.
9. Write a C program to display the hash table, using the mid square method.
10. Write a program to demonstrate Binary Search.
11. Write a C program to insert nodes into a Binary tree and to traverse in pre order.
12. Write a C program to traverse the given binary tree using all traversal methods.
13. Write a C program to arrange a set of numbers in ascending order using QUICKSORT.

TEXT BOOK:

Ellis Horowitz, SartajShani, *Data Structures*, Galgotia publication.

REFERENCE BOOKS:

1. *Data Structures Using C* Aaron M. Tenenbaum, Yedidyah Langsam, Moshe J. Augenstein, Kindersley (India) Pvt. Ltd.,
2. *Data Structure and Algorithms*, Alfred V. Aho, John E. Hopcroft, Jeffrey D. Ullman, Pearson Education Pvt. Ltd.,

DIGITAL TOOLS:

<https://www.computer-pdf.com/programming/781-tutorial-data-structure-and-algorithm-notes.html>

<https://www.cs.princeton.edu/courses/archive/spr11/cos217/lectures/08DsAlg.pdf>

https://www.iare.ac.in/sites/default/files/lecture_notes/IA

[RE_DS_LECTURE_NOTES2.pdf](#)

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2		2	1		
CO2		2	1			1
CO3		2	2		2	
CO4	2			1		3
CO5		2	1	1	2	3

3. Advanced Application 2. Intermediate Development 1. Introductory Level



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

491

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCAA41	NUMERICAL METHODS	ELECTIV/ ALLIED – 4	4	–	3

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	IV	25	75	100

Curriculum Design and Development	Employability	✓	Skill Oriented		✓	Entrepreneurship		✓
	National	Local	Regional			Global		✓
Curriculum Enrichment	Professional Ethics	Gender	Environment and Sustainability			Human Values	Other Values	✓

COURSE DESCRIPTION:

This course is designed to teach various methods involved in Numerical Methods by iteration process.

COURSE OBJECTIVES:

- To Explain the various methods in Trigonometry, Sine and Cosine functions by Iteration process.
- To Explain and solve the methods in Simulation equations.
- To Explain and solve the methods in Interpolation.
- To Explain and solve the methods in Numerical Differentiation and Integration
- To Explain and solve the methods in Differential equation

COURSE OUTCOMES (COs) :

After the completion of the course, the students will be able to

No.	Course Outcomes	Knowledge Level (According to Bloom's Taxonomy)
CO1	explain and solve different methods in Algebraic and Transcendental equations	Upto K3
CO2	summarize and solve the various methods involved in Simulation equation	Upto K3
CO3	demonstrate the different methods involved in Interpolation	Upto K3
CO4	illustrate and solve the various methods in Numerical Differentiation and Integration	Upto K3
CO5	discuss and solve the different methods in Differential Equation	Upto K3

K1– KNOWLEDGE (REMEMBERING), K2–UNDERSTANDING, K3–APPLYING



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

492

NUMERICAL METHODS

UNIT – I:

Algebraic and Transcendental equations : Errors in Numerical computation – Iteration methods – Bisection method – Regula-falsi method – Newton Raphson method.

UNIT – II:

Gauss Elimination method – calculation of inverse of matrix – Gauss Seidal method. Curve fitting method of least squares.

UNIT – III:

Newton's Interpolation formula – Central Differences Interpolation formula – Lagrange's Interpolation formula – Inverse Interpolation

UNIT – IV:

Numerical Differentiation: Newton's Forward and Backward Difference formula
Numerical Integration : Trapezoidal rule – Simpson's rule . Eigen values and Eigen vectors of a matrix.

UNIT – V:

Numerical Solution of Differential Equation : Euler's method – Taylor's Series method – Range Kutta method

TEXT BOOKS:

Numerical Methods. S. Arumugam and Thangapandi Isaac, A. Soma Sundaram Publications : Scitech Publications, Chennai 2002

Unit –1 Page no. 3.1 – 3.5, **Unit – 2** Page no. 4.3 , 4.5 and 4.8,

Unit – 3 Page no. 7.3, 7.3 and 7.6, **Unit – 4** Page no. 8.1, 8.2, 8.5, 5.0 – 5.2,

Unit – 5 Page no, 10.1 – 10.4

REFERENCE BOOKS:

Numerical Methods. T. Veerarajan and J. Ramchandran 2nd edition. Publications:Tata McGraw Hill 2006.

DIGITAL TOOLS:

<http://csw.uobaghdad.edu.iq/wp-content/uploads/sites/30/uploads/computer%20science/ Lectures/2nd%20year/>

<https://byjus.com/maths/gauss-elimination-method/>

<https://nptel.ac.in/content/storage2/courses/122104018/node109.html>

<http://www.vbspu.ac.in/wp-content/uploads/2016/02/Differentiation-and-Integration.pdf>

<http://faculty.olin.edu/bstorey/Notes/DiffEq.pdf>

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	2	1	1	2
CO2	1	2	2	1	1	2
CO3	1	2	2	1	1	2
CO4	1	2	2	1	1	2
CO5	1	2	2	1	1	2

3. Advanced Application 2. Intermediate Development 1. Introductory Level



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

493

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCAN41	OFFICE AUTOMATION	SEC NME – 2	2	—	2

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	IV	25	75	100

Curriculum Design and Development	Employability	✓	Skill Oriented	✓	Entrepreneurship	✓
	National	Local	Regional		Global	✓
Curriculum Enrichment	Professional Ethics	Gender	Environment and Sustainability		Human Values	Other Values ✓

COURSE DESCRIPTION:

This course provides the concepts of Computer System Components and Creating documents, design spreadsheet and PowerPoint tool in MS–Office.

COURSE OBJECTIVE:

To make the students understand

- the basics of computer systems and its components
- and apply the basic concepts of a word processing package
- and apply the basic concepts of electronic spread sheet software
- and apply the basic concepts of data base management system
- and create a presentation using Power Point tool

COURSE OUTCOMES (COs):

After the completion of the course, the students will be able to

No.	Course Outcomes	Knowledge Level (According to Bloom's Taxonomy)
CO1	possess the knowledge on the basics of computers and its components.	Upto K3
CO2	gain knowledge on Creating Documents, spread sheet and presentation.	Upto K3
CO3	learn the concepts of Database and implement the Query In Database.	Upto K3
CO4	demonstrate the understanding of different automation tools.	Upto K3
CO5	utilize the automation tools for documentation, calculation and presentation purpose.	Upto K3

K1– KNOWLEDGE (REMEMBERING), K2–UNDERSTANDING, K3–APPLYING



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

494

OFFICE AUTOMATION

UNIT – I: INTRODUCTORY CONCEPTS

Introductory concepts: Memory unit – CPU – Input Devices: Key board, Mouse and Scanner. Output devices: Monitor, Printer. Introduction to Operating systems & its features: DOS – UNIX – Windows. Introduction to Programming Languages

UNIT – II: WORD PROCESSING

Word Processing: Open, Save and close word document; Editing text tools, formatting, bullets; Spell Checker – Document formatting – Paragraph alignment, indentation, headers and footers, numbering; printing – Preview, options, merge.

UNIT – III: SPREADSHEETS

Excel – opening, entering text and data, formatting, navigating; Formulas – entering, handling and copying; Charts – creating, formatting and printing, analysis tables, preparation of financial statements, introduction to data analytics.

UNIT – IV: DATABASE CONCEPTS

The concept of data base management system; Data field, records, and files, Sorting and indexing data; Searching records. Designing queries, and reports; Linking of data files; Understanding Programming environment in DBMS; Developing menu drive applications in query language (MS–Access).

UNIT – V: POWER POINT

Introduction to Power point – Features – Understanding slide type casting & viewing slides–creating slideshows. Applying special object – including objects & pictures – Slide transition – Animation effects, audio inclusion, timers.

TEXT BOOK:

Peter Norton, *Introduction to Computers* – Tata McGraw Hill

REFERENCE BOOKS:

Jennifer Ackerman Kettel, GuyHat–Davis, Curt Simmons, *Microsoft 2003*, Tata McGraw Hill.

DIGITAL TOOLS:

<https://www.udemy.com/course/office-automation-certificate-course/>

<https://www.javatpoint.com/automation-tools>

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	2	1	1	2
CO2		1	2		1	
CO3		2	2	1	3	3
CO4	1			2	3	2
CO5	3	2	2	1	1	2

3. Advanced Application 2. Intermediate Development 1. Introductory Level



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

495

COURSE CODE	COURSE TITLE	CATEGORY	T	P	CREDITS
24UCASP2	LAB: WEB DESIGNING	SEC LAB	–	2	2

YEAR	SEMESTER	INTERNAL	EXTERNAL	TOTAL
II	IV	40	60	100

Curriculum Design and Development	Employability		✓	Skill Oriented		✓	Entrepreneurship			✓
	National		Local		Regional		Global			✓
Curriculum Enrichment	Professional Ethics		Gender		Environment and Sustainability		Human Values		Other Values	✓

COURSE DESCRIPTION:

This course provides fundamental concepts of Web Designing using HTML and JAVA Script.

COURSE OBJECTIVE:

To make the students learn various concepts of designing a web page using different tags using HTML and JAVA Script

COURSE OUTCOMES (COs):

After the completion of the course, the students will be able to

No.	Course Outcomes	Knowledge Level (According to Bloom's Taxonomy)
CO1	design a web page using different tags using HTML	Upto K3
CO2	design a web page using tables, links, frames etc.	Upto K3
CO3	analyze the web page using different validation techniques using JAVA Script	Upto K3
CO4	apply the web page validation techniques using JAVA Script Event Handling	Upto K3
CO5	apply the web page validation techniques using JAVA Script Event Handling using simple form entry concept	Upto K3

K1– KNOWLEDGE (REMEMBERING), K2–UNDERSTANDING, K3–APPLYING



SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'A' grade by NAAC)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A)

SYLLABUS (Under CBCS based on OBE)

(For the students admitted from the academic year 2024 – 2025 onwards)

496

LAB: WEB DESIGNING

HTML:

1. Design student ID card using image tag.
2. Display various Subjects using Lists.
3. Design class Timetable using Tables.
4. Display various Text styles and Colors using Frames.
5. Design Student Admission Form.

JAVASCRIPT:

6. Login ID Validation
7. Handling Mouse Events
8. Creating Cookies
9. Background Color Changing
10. Evaluate an Expression.
11. Performing Arithmetic Operation.
12. Performing String Operation.
13. EB Bill Calculation.
14. Cinema Ticket Booking
15. Create a sample Bank Entry form.

TEXT BOOK:

Mastering HTML5 and CSS3 Made Easy, TeachUComp Inc., 2014.

REFERENCE BOOK:

Thomas Michaud, *Foundations of Web Design: Introduction to HTML & CSS*

DIGITAL TOOLS:

<https://www.teachucomp.com/samples/html/5/manuals/Mastering-HTML5-CSS3.pdf>

<https://www.w3schools.com/html/default.asp>

Mapping of CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2		2	1		
CO2	2	2	1			1
CO3		2	2	1	2	
CO4	2			1	2	3
CO5	3	2	1	1	2	3

3. Advanced Application 2. Intermediate Development 1. Introductory Level