E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI – 625 014.

(*An Autonomous Institution – Affiliated to Madurai Kamaraj University*)
Re-accredited **(3rd Cycle)** with Grade **A+** & **CGPA 3.51** by NAAC

DEPARTMENT OF COMPUTER SCIENCE

TANSCHE - **CBC**S With OBE

BACHELOR OF SCIENCE

PROGRAMME CODE - S

COURSE STRUCTURE

(w.e.f. 2023 – 2024 Batch onwards)

E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI -14.
(An Autonomous Institution – Affiliated to Madurai Kamaraj University)
(Re –accredited (3rd cycle) with Grade A$^+$ and CGPA 3.51 by NAAC)
TANSCHE-CBCS with OBE
DEPARTMENT OF COMPUTER SCIENCE - UG
COURSE STRUCTURE
(w.e.f. 2023 – 2024 Batch onwards)

Semester	Part	Course Code	Title of the Course	Teaching hrs (per week)	Duration of Exam (hrs.)	Marks Allotted			Credits
						CIA	SE	Total	
III	I	23OU1TA3	Tamil	6	3	25	75	100	3
	II	23OU2EN3	General English - III	6	3	25	75	100	3
	III	23OUCS31	**Core Course 5:** Python Programming	5	3	25	75	100	5
	III	23OUCS3P	**Core Course 6:** Python Programming Lab	5	3	40	60	100	5
	III	23OUCSGEMA3	**GEC 3:** Mathematics III Statistical Methods and its Application	4	3	25	75	100	3
	IV	23OUCSSEC31	**SEC 4:** Multimedia Systems	2	3	25	75	100	2
	IV	23OUCSSEC32	**SEC 5:** PHP Programming	1	3	25	75	100	1
	IV		Environmental Studies	1	-	-	-	-	-
IV			**TOTAL**	**30**					**22**
	I	23OU1TA4	Tamil	6	3	25	75	100	3
	II	23OU2EN4	General English - IV	6	3	25	75	100	3
	III	23OUCS41	**Core Course 7:** Java Programming	5	3	25	75	100	5
	III	23OUCS4P	**Core Course 8:** Java Programming Lab	5	3	40	60	100	5
	III	23OUCSGEMA4	**GEC 4:** Mathematics IV Resource Management Techniques	4	3	25	75	100	3
	IV	23OUCSSEC41	**SEC 6:** Web Designing	2	3	25	75	100	2
	IV	23OUCSSEC42	**SEC 7:** Software Testing	1	3	25	75	100	1
		23OU4EV4	Environmental Studies	1	3	25	75	100	2
			TOTAL	**30**					**25**

Department of Computer Science				Class: II B.Sc.,				
Sem	Category	Course Code	Course Title	Credits	Contact Hours/ Week	CIA	SE	Total
III	Core	23OUCS31	Python Programming	5	5	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship oriented**
✓		

Course Objectives:

1. To describe the core syntax and semantics of Python programming language.
2. To discover the need for working with the strings and functions.
3. To Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.
4. To understand the usage of packages and Dictionaries
5. To acquire the Knowledge of File handling in Python

Course Content:

Unit – I Basics of Python Programming: History of Python-Features of Python-Literal-Constants-Variables - Identifiers–Keywords-Built-in Data Types-Output Statements – Input Statements-Comments – Indentation- Operators-Expressions-Type conversions. **Python Arrays:** Defining and Processing Arrays – Array methods.

Unit – II Control Statements: Selection/Conditional Branching statements: if, if-else, nested if and if-elif-else statements. Iterative Statements: while loop, for loop, else suite in loop and nested loops. **Jump Statements:** break, continue and pass statements.

Unit – III Functions: Function Definition – Function Call – Variable Scope and its Lifetime-Return Statement. **Function Arguments:** Required Arguments, Keyword Arguments, Default Arguments and Variable Length Arguments- Recursion. **Python Strings:** String operations-Immutable Strings - Built-in String Methods and Functions - String Comparison. **Modules:** import statement- The Python module – dir() function – Modules and Namespace – Defining our own modules.

Unit – IV Lists: Creating a list -Access values in List-Updating values in Lists- Nested lists - Basic List Operations-List Methods. **Tuples:** Creating, Accessing, Updating and Deleting Elements in a tuple – Nested tuples– Difference between lists and tuples. **Dictionaries:** Creating,

Accessing, Updating and Deleting Elements in a Dictionary – Dictionary Functions and Methods - Difference between Lists and Dictionaries.

Unit – V Python File Handling: Types of files in Python - Opening and Closing files-Reading and **Writing files:** write() and writelines() methods- append() method – read() and readlines() methods – with keyword – Splitting words – File methods - File Positions- Renaming and deleting files.

Book for Study:

1. ReemaThareja (2017), "*Python Programming using problem solving approach*", Oxford University Press, First Edition.

Chapters:

        Unit – I   **:** 3.1, 3.2 3.5, 3.6, 3.9, 3.10,3.11, 3.12, 3.16

        Unit – II   **:** 4.2 to 4.7

        Unit – III   **:** 5.2 to 5.6, 5.10, 5.11, 6.1,6.2, 6.4, 6.8.

        Unit – IV   **:** 8.2.1 to 8.2.3, 8.2.5, 8.2.6, 8.4.1, 8.4.3 to 8.4.5, 8.4.9,8.4.12, 8.6.1 to 8.6.4, 8.6.8, 8.6.9

        Unit – V   **:** 7.3 to 7.7

2. Dr. R. NageswaraRao (2017), "*Core Python Programming*", Dream tech Publishers, First Edition.

Chapters:

        Unit – I   : 3, 5, 7

Books for Reference:

1. VamsiKurama, "*Python Programming: A Modern Approach*", Pearson Education.
2. Mark Lutz, "*Learning Python*", June 2013 , Orielly.
3. Kenneth A. Lambert, "*Fundamentals of Python – First Programs*", CENGAGE Publication.

Web Resources / E.Books:

1. https://www.programiz.com/python-programming
2. https://www.guru99.com/python-tutorials.html
3. https://www.w3schools.com/python/python_intro.asp

Pedagogy:

      Chalk and Talk, PPT, group discussion, quiz, ICT tools and Peer Teaching.

Rationale for nature of Course:

Knowledge and Skill: To make the students to know the basic concepts of programming language.

Activities to be given: students shall be practiced with different programming concepts.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge According to Bloom's Taxonomy (Up to K level)
CLO1	Learn the basics of python, Do simple programs on python, Learn how to use an array.	K1 to K3
CLO2	Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements.	K1 to K3
CLO3	Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules.	K1 to K4
CLO4	Work with List, tuples and dictionary, Write program using list, tuples and dictionary.	K1 to K3
CLO5	Usage of File handlings in python, Concept of reading and writing files, Do programs using files.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	3	3	3	3	2
CLO2	3	3	3	2	3	3
CLO3	3	3	3	3	3	3
CLO4	2	3	3	3	3	3
CLO5	3	3	3	3	3	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (75 HRS)

UNIT	DESCRIPTION	HRS	MODE
I	**Basics of Python Programming:** History of Python-Features of Python-Literal-Constants-Variables - Identifiers–Keywords-Built-in Data Types-Output Statements – Input Statements-Comments – Indentation- Operators-Expressions-Type conversions. **Python Arrays:** Defining and Processing Arrays – Array methods.	15	Chalk and Talk, PPT, quiz, on the spot test

II	**Control Statements:** Selection/Conditional Branching statements: if, if-else, nested if and if-elif-else statements. Iterative Statements: while loop, for loop, else suite in loop and nested loops. **Jump Statements:** break, continue and pass statements.	15	Chalk and Talk, quiz, on the spot test
III	**Functions:** Function Definition – Function Call – Variable Scope and its Lifetime-Return Statement. **Function Arguments:** Required Arguments, Keyword Arguments, Default Arguments and Variable Length Arguments-Recursion. **Python Strings:** String operations- Immutable Strings - Built-in String Methods and Functions - String Comparison. **Modules:** import statement- The Python module – dir() function – Modules and Namespace – Defining our own modules.	15	Chalk and Talk, PPT, group discussion and You tube Links
IV	**Lists:** Creating a list -Access values in List-Updating values in Lists- Nested lists -Basic list operations-List Methods. Tuples: Creating, Accessing, Updating and Deleting Elements in a tuple – Nested tuples– Difference between lists and tuples. **Dictionaries:** Creating, Accessing, Updating and Deleting Elements in a Dictionary – Dictionary Functions and Methods - Difference between Lists and Dictionaries.	15	Chalk and Talk, PPT, quiz
V	**Python File Handling:** Types of files in Python - Opening and Closing files-Reading and Writing files: write() and writelines() methods- append() method – read() and readlines() methods – with keyword – Splitting words – File methods - File Positions-Renaming and deleting files.	15	Chalk and Talk, PPT, group discussion, quiz, open book test

Course Designer

Mrs.N. Kavitha

Department of Computer Science				Class: II B.Sc.,				
Sem	Category	Course Code	Course Title	Credits	Contact Hours/ Week	CIA	SE	Total
III	Core	23OUCS3P	Python Programming Lab	5	5	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship Oriented
✓		

PROGRAM LIST

1. Program using variables, constants, I/O statements in Python.
2. Program using Operators in Python.
3. Program using Conditional Statements.
4. Program using Loops.
5. Program using Jump Statements.
6. Program using Functions.
7. Program using Recursion.
8. Program using Arrays.
9. Program using Strings.
10. Program using Modules.
11. Program using Lists.
12. Program using Tuples.
13. Program using Dictionaries.
14. Program for File Handling.

Books for Reference:

1. Mark Lutz (2018), *Learning Python Powerful Object Oriented Programming*, O'reilly Media,5th Edition.

2. Ch Satyanarayana M Radhika Mani,B N Jagadesh (2018), *Python programming*, Universities Press,2nd Edition.

3. Timothy A. Budd (2017), *Exploring Python*, Tata MCGraw Hill Education Private Limited, 1st Edition.

Web Resources / E.Books:

1. **https://www.fullstackpython.com/best-python-resources.html**
2. **https://www.learnpython.org/**
3. **https://realpython.com/products/**

Pedagogy

Chalk and Talk, PPT, group discussion, quiz, ICT tools and Peer Teaching.

LESSON PLAN FOR PRACTICAL: TOTAL HOURS (75 HRS)

Cycle	Description	Hrs	Mode
1	1. Program using variables, constants, I/O statements in Python. 2. Program using Operators in Python. 3. Program using Conditional Statements.	15	Writing and executing the program in a system
2	1. Program using Loops. 2. Program using Jump Statements. 3. Program using Functions	15	Writing and executing the program in a system
3	1. Program using Recursion. 2. Program using Arrays. 3. Program using Strings	15	Writing and executing the program in a system
4	1. Program using Modules. 2. Program using Lists. 3. Program using Tuples.	15	Writing and executing the program in a system
5	1. Program using Dictionaries. 2. Program for File Handling.	15	Writing and executing the program in a system

Course Designer

Mrs. R.Chinthamani

Department of Computer Science				Class: II B.Sc.,				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
III	Skill Enhancement Course	23OUCSSEC31	Multimedia Systems	2	2	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship Oriented**
✓		

Unit -I Multimedia Definition-Use Of Multimedia Delivering Multimedia- Text: About Fonts and Faces - Using Text in Multimedia.

Unit –II Computers and Text Font Editing and Design Tools Hypermedia and Hypertext. Images: Plan Approach - Organize Tools - Configure Computer Workspace -Making Still Images - Color - Image File Formats.

Unit –III Sound: The Power of Sound –Digital Audio Midi Audio-Midivs.Digital Audio Multimedia System Sounds Audio File Formats Vaughan's Law of Multimedia Minimums - Adding Sound to Multimedia Project.

Unit –IV Animation: The Power of Motion-Principles of Animation-Animation by Computer - Making Animations that Work.

Unit –V Video: Using Video - Working with Video and Displays-Digital Video Containers-Obtaining Video Clips -Shooting and Editing Video.

Books for Study:

TayVaughan, *Multimedia: Making It Work* ,8th Edition, Osborne/McGraw Hill,2001.

Books for Reference:

1. Ralf Steinmetz &Klara Nahrstedt *Multimedia Computing, Communication &Applications* , Pearson Education,2012.

Chapters:

    Unit – I   **:** 1,2

    Unit – II   **:** 2,3

    Unit – III   **:** 4

    Unit – IV   **:** 5

    Unit – V   **:** 6

Web Resources / E.Books:

https://www.geeksforgeeks.org/multimedia-systems-with-features-or-characteristics/

https://www.encyclopedia.com/finance/finance-and-accountingmagazines/multimedia-systems

https://www.tutorialspoint.com/multimedia/multimedia_systems.htm

Pedagogy:

Chalk and Talk, PPT, group discussion, quiz, ICT tools and Peer Teaching.
Rationale for nature of Course:

Knowledge and Skill: To make the students to know the basic concepts of programming language.
Activities to be given: students shall be practiced with different programming concepts.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge According to Bloom's Taxonomy (Up to K level)
CLO1	To understand the concepts, importance, application and the process of developing multimedia	K1 to K3
CLO2	To have basic knowledge and understanding about image related processing	K1 to K3
CLO3	To understand the framework of frames and bit images to animations	K1 to K4
CLO4	Speaks about the multimedia projects and stages of requirement in phases of project.	K1 to K3
CLO5	Understanding the concept of cost involved in multimedia planning, designing, and producing	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	2	2	3	3	3	2
CLO2	2	3	2	3	2	1
CLO3	1	2	3	3	3	2
CLO4	3	2	2	2	1	2
CLO5	2	3	1	3	3	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN FOR PRACTICAL: TOTAL HOURS (30 HRS)

Cycle	Description	Hrs	Mode
1	Multimedia Definition-Use Of Multimedia Delivering Multimedia- Text: About Fonts and Faces - Using Text in Multimedia.	6	Chalk and Talk, PPT, group discussion and quiz.
2	Computers and Text Font Editing and Design Tools Hypermedia and Hypertext. Images: Plan Approach - Organize Tools - Configure Computer Workspace -Making Still Images - Color - Image File Formats.	6	Chalk and Talk, PPT, group discussion and quiz.
3	Sound: The Power of Sound –Digital Audio Midi Audio-Midivs.Digital Audio Multimedia System Sounds Audio File Formats Vaughan's Law of Multimedia Minimums - Adding Sound to Multimedia Project.	6	Chalk and Talk, PPT, group discussion and quiz.
4	Animation: The Power of Motion-Principles of Animation-Animation by Computer - Making Animations that Work.	6	Chalk and Talk, PPT, group discussion and quiz.
5	Video: Using Video - Working with Video and Displays-Digital Video Containers-Obtaining Video Clips -Shooting and Editing Video.	6	Chalk and Talk, PPT, group discussion and quiz.

Course Designer
Mrs.V.Jayavani

	Department of Computer Science			Class: II B.Sc.,				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
III	Skill Enhancement Course	23OUCSSE C32	PHP Programming	1	1	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship Oriented**
✓		

Unit -I Introduction to PHP -Basic Knowledge of websites -Introduction of Dynamic Website - Introduction to PHP -Scope of PHP -XAMPP and WAMP Installation.

Unit –II PHP Programming Basics -Syntax of PHP -Embedding PHP in HTML -Embedding HTML in PHP. Introduction to PHP Variable -Understanding Data Types -Using Operators -Using Conditional Statements -If(), else if() and else if condition Statement.

Unit –III Switch() Statements -Using the while() Loop -Using the for() Loop PHP Functions. PHP Functions -Creating an Array -Modifying Array Elements Processing Arrays with Loops - Grouping Form Selections with Arrays -Using Array Functions.

Unit –IV PHP Advanced Concepts -Reading and Writing Files -Reading Data from a File.

Unit –V Managing Sessions and Using Session Variables -Destroying a Session -Storing Data in Cookies -Setting Cookies.

Books for Study:

Tim Converse and Joyce park with Clark Margon , *PHP5 and MySQL Bib*le 2004 ,Wiley Publishing,Inc.

Books for Reference:

1. Lynn mighley and Michael *Head First PHP & MySQL: A Brain-Friendly Guide-* 2009
2. DT Editorial Services (Author), "*HTML 5 Black Book (Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP, jQuery)*", Paperback 2016, 2nd Edition.
3. Alan Forbes.*The Joy of PHP: A Beginner's Guide to Programming Interactive Web Applications with PHP and MySQL*

Chapters:

Unit – I   : 1,3

Unit – II   : 5,6

Unit – III	**:**	6,9
Unit – IV	**:**	23
Unit – V	**:**	24

Web Resources / E.Books:

Opensource digital libraries: PHP Programming

https://www.ukessays.com/essays/marketing/contemporary-issues-in-marketing-marketing-essay.php

https://www.w3schools.com/php/default.asp

Pedagogy:

Chalk and Talk, PPT, group discussion, quiz, ICT tools and Peer Teaching.

Rationale for nature of Course:

Knowledge and Skill: To make the students to know the basic concepts of programming language.

Activities to be given: students shall be practiced with different programming concepts.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge According to Bloom's Taxonomy (Up to K level)
CLO1	Write PHP scripts to handle HTML forms	K1 to K3
CLO2	Write regular expressions including modifiers, operators, and meta characters.	K1 to K3
CLO3	Create PHP Program using the concept of array.	K1 to K4
CLO4	Create PHP programs that use various PHP library functions	K1 to K3
CLO5	Manipulate files and directories.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	2	1	2	1	2
CLO2	3	3	2	2	3	3
CLO3	3	3	2	3	3	2
CLO4	3	2	3	2	2	3
CLO5	3	2	2	2	3	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN FOR PRACTICAL: TOTAL HOURS (30 HRS)

Cycle	Description	Hrs	Mode
1	**Introduction to PHP** -Basic Knowledge of websites -Introduction of Dynamic Website -Introduction to PHP -Scope of PHP -XAMPP and WAMP Installation.	6	Chalk and Talk, PPT, group discussion and quiz.
2	**PHP Programming Basics -**Syntax of PHP -Embedding PHP in HTML -Embedding HTML in PHP. Introduction to PHP Variable -Understanding Data Types -Using Operators -Using Conditional Statements -If(), else if() and else if condition Statement	6	Chalk and Talk, PPT, group discussion and quiz.
3	Switch() Statements -Using the while() Loop -Using the for() Loop PHP Functions. PHP Functions -Creating an Array -Modifying Array Elements Processing Arrays with Loops -Grouping Form Selections with Arrays -Using Array Functions.	6	Chalk and Talk, PPT, group discussion and quiz.
4	PHP Advanced Concepts -Reading and Writing Files -Reading Data from a File.	6	Chalk and Talk, PPT, group discussion and quiz.
5	Managing Sessions and Using Session Variables -Destroying a Session -Storing Data in Cookies -Setting Cookies.	6	Chalk and Talk, PPT, group discussion and quiz.

Course Designer

Ms.K.Shalini

Department of Computer Science				Class: II B.Sc.,				
Sem	Category	Course Code	Course Title	Credits	Contact Hours/ Week	CIA	SE	Total
IV	Core	23OUCS41	Java Programming	5	5	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship oriented**
✓		

Course Objectives:

1. To provide fundamental knowledge of object-oriented programming.
2. To equip the student with programming knowledge in Core Java from the basics up.
3. To enable the students to use AWT controls, Event Handling and Swing for GUI.
4. To provide fundamental knowledge of object-oriented programming.
5. To equip the student with programming knowledge in Core Java from the basics up.

Course Content:

Unit – I The History and Evolution of Java: Java Lineage –The Creation of Java-How Java Changed the Internet –The Java Buzzwords. **Datatypes, Variables and Arrays**: The Primitive Types – Integers – Floating-Point Types-Characters-Booleans-Variables-Arrays. **Operators:** Arithmetic Operators – The Bitwise Operators – Relational Operators – Boolean Logical Operators.

Unit – II Control Statements: Java's Selection Statements – Iteration Statements-Jump Statements**. Introducing Classes :** Class Fundamentals – Declaring Objects **–** Assigning Object Reference Variables – Introducing Methods**-** Constructors**-** The this Keyword-Garbage Collection-The finalize() Method. **Inheritance**: Inheritance Basics – Using Super –Method Overriding – Using Abstract Classes – Using final with Inheritance. Types of inheritance - Member access rules - Usage of this and Super key word - Method Overloading - Method overriding - Abstract classes - Dynamic method dispatch - Usage of final keyword. **Packages**: Definition – Access Protection - Importing Packages. **Interfaces**: Definition – Implementation – Extending Interfaces. **Exception Handling**: try – catch- throw - throws – finally – Built-in exceptions - Creating Own Exceptionclasses.

Unit – III: Packages and Interfaces: Packages – Access Protection – Importing Packages-Interfaces. Definition – Access Protection - Importing Packages - Interfaces. **Exception**

Handling: Exception Handling Fundamentals - Exception Types-Uncaught Exceptions – Using try and catch – Multiple catch Clauses- Nested try Statements- throw –throws- finally.

Multithreaded Programming: The Java Thread Model – The Main Thread – Creating a Thread – Creating Multi Threads Class – Using isAlive() and join() – Thread Priorities - Synchronization -Inter thread Communication.

Unit – IV: The Applet Class: Two Types of Applets – Applet Basics – Applet Architecture- An Applet Skeleton- Simple Applet Display Methods – The HTML APPLET Tag. **Event Handling:** Two Event Handling Mechanisms – The Delegation Event Model – Event Classes Sources of Events – Event Listener Interfaces.

Unit – V: Using AWT Controls , Layout Managers and Menus: Labels – Using Button – Applying Check Boxes- Check Box Group – Using Lists - Using TextField – Using a Text Area- Understanding Layout Managers. **Exploring Swing:** JLabel and IamgeIcon- JTextField – The Swing Buttons - JTabbedPane - JScrollPane.- JList - - JComboBox – Trees – JTable.

Book for Study:
1. Herbert Schildt (2010), *"The Complete Reference"*, Tata McGraw Hill, New Delhi, 7th Edition.

Chapters:

Unit – I	**:** 1,3,4
Unit – II	**:** 5,6,8
Unit – III	**:** 9,10,11
Unit – IV	**:** 21, 22
Unit – V	**:** 23,30

Books for Reference:

1. Herbert Schildt(2006) ,*The Complete Reference Java*, 5th Edition, TMH Publication, New Delhi.

2. Y. Daniel Liang(2010), *Introduction to Java Programming*, 7th Edition, Pearson Education India.

3. Danny Goodman(2005), *Java Script Bible*, 4thedition, WILEYdreamtech India Pvt.ltd, India.

Web Resources / E.Books:

1. https://javabeginnerstutorial.com/core-java-tutorial
2. http://docs.oracle.com/javase/tutorial/
3. https://www.coursera.org/

Pedagogy:

Chalk and Talk, PPT, group discussion, quiz, ICT tools and Peer Teaching.

Rationale for nature of Course:

Knowledge and Skill: To make the students to know the basic concepts of programming language.

Activities to be given: students shall be practiced with different programming concepts.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge According to Bloom's Taxonomy (Up to K level)
CLO1	Understand the basic Object-oriented concepts. Implement the basic constructs of Core Java.	K1 to K3
CLO2	Implement inheritance, packages, interfaces and exception handling of Core Java.	K1 to K3
CLO3	Implement multi-threading and I/O Streams of Core Java.	K1 to K4
CLO4	Implement AWT and Event handling.	K1 to K3
CLO5	Use Swing to create GUI.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	3	3	3	3	2
CLO2	3	3	3	2	2	3
CLO3	2	2	1	3	3	3
CLO4	3	3	3	3	3	2
CLO5	3	3	3	3	3	1

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN: TOTAL HOURS (75 HRS)

UNIT	DESCRIPTION	HRS	MODE
	The History and Evolution of Java: Java Lineage –The Creation of Java-How Java Changed the Internet –The Java Buzzwords. **Datatypes, Variables and Arrays:** The Primitive Types – Integers – Floating-Point Types-Characters-Booleans-Variables-Arrays. Operators: Arithmetic Operators – The Bitwise Operators – Relational Operators – Boolean Logical Operators.	15	Chalk and Talk, PPT, quiz, on the spot test
II	**Control Statements**: Java's Selection Statements – Iteration Statements-Jump Statements. Introducing Classes : Class Fundamentals – Declaring Objects – Assigning Object Reference Variables – Introducing Methods- Constructors- The this Keyword-Garbage Collection-The finalize() Method. Inheritance: Inheritance Basics – Using Super –Method Overriding – Using Abstract Classes – Using final with **Inheritance.** Types of inheritance - Member access rules - Usage of this and Super key word - Method Overloading - Method overriding - Abstract classes - Dynamic method dispatch - Usage of final keyword. Packages: Definition – Access Protection - Importing Packages. Interfaces: Definition – Implementation – Extending Interfaces. Exception Handling: try – catch- throw - throws – finally – Built-in exceptions - Creating Own Exception classes.	15	Chalk and Talk, quiz, on the spot test
III	**Packages and Interfaces**: Packages – Access Protection – Importing Packages-Interfaces. Definition – Access Protection - Importing Packages - Interfaces. **Exception Handling**: Exception Handling Fundamentals - Exception Types-Uncaught Exceptions – Using try and catch – Multiple catch Clauses- Nested try Statements- throw –throws- finally. **Multithreaded Programming**: The Java Thread Model – The Main Thread – Creating a Thread – Creating Multi Threads Class – Using isAlive() and join() – Thread Priorities - Synchronization - Inter thread Communication.	15	Chalk and Talk, PPT, group discussion and You tube Links

IV	The Applet Class: Two Types of Applets – Applet Basics – Applet Architecture- An Applet Skeleton- Simple Applet Display Methods – The HTML APPLET Tag. Event Handling: Two Event Handling Mechanisms – The Delegation Event Model – Event Classes Sources of Events – Event Listener Interfaces.	15	Chalk and Talk, PPT, quiz
V	**Using AWT Controls , Layout Managers and Menus:** Labels – Using Button – Applying Check Boxes- Check Box Group – Using Lists - Using TextField – Using a Text Area- Understanding Layout Managers. Exploring **Swing**: JLabel and IamgeIcon- JTextField – The Swing Buttons - JTabbedPane - JScrollPane.- JList - - JComboBox – Trees – JTable.	15	Chalk and Talk, PPT, group discussion, quiz, open book test

Course Designer

Mrs.P.Ruby Stella Mary

Department of Computer Science				Class: II B.Sc.,				
Sem	Category	Course Code	Course Title	Credits	Contact Hours/ Week	CIA	SE	Total
IV	Core	23OUCS4P	Java Programming Lab	5	5	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship Oriented**
✓		

PROGRAM LIST

1. Write a Java program that prompts the user for an integer and then prints out all the prime numbers up to that Integer.

2. Write a Java program to multiply two given matrices.

3. Write a Java program that displays the number of characters, lines andwords in a text.

4. Generate random numbers between two given limits using Random classand print messages according to the range of the value generated.

5. Write a program to do String Manipulation using CharacterArray and perform the following string operations:
   a) String length
   b) Finding a character at a particular position
   c) Concatenating two strings

6. Write a program to perform the following string operations using String class:
   a) String Concatenation
   b) Search a substring
   c) To extract substring from given string

7. Write a program to perform string operations using String Buffer class:
   a) Length of a string
   b) Reverse a string
   c) Delete a substring from the given string

8. Write a java program that implements a multi-thread application that has three threads. First thread generates random integer every 1 secondand if the value is even, second thread computes the square of the number and prints. If the value is

odd, the third thread will print the value of cube of the number.

9. Write a threading program which uses the same method asynchronously to print the numbers 1to10 using Thread1 and to print90 to100 using Thread2.

10. Write a program to demonstrate the use of following exceptions.

   a) Arithmetic Exception

   b) Number Format Exception

   c) ArrayIndexOutofBoundException

   d) NegativeArraySizeException

11. Write a Java program that reads on file name from the user, then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length ofthe file in bytes.

12. Write a program to accept a text and change its size and font. Includebold italic options. Use frames and controls.

13. Write a Java program that handles all mouse events and shows the event name at the center of the window when a mouse event is fired.(Use adapter classes).

14. Write a Java program that works as a simple calculator. Use a grid layout to arrange buttons for the digits and for the +, -, *, % operations.Add a text field to display the result. Handle any possible exceptions like divide by zero.

15. Write a Java program that simulates a traffic light. The program lets theuser select one of three lights: red, yellow, or green with radio buttons. On selecting a button, an appropriate message with "stop" or "ready" or"go" should appear above the buttons in a selected color. Initially there is no message shown.

Books for Reference:

1. Herbert Schildt, *The Complete Reference, Tata McGraw Hill*, New Delhi, 7th Edition, 2010.
2. Gary Cornell, *Core Java 2 Volume I – Fundamentals*, Addison Wesley, 1999.

Web Resources / E.Books:

1. https://www.w3schools.com/java/
2. http://java.sun.com
3. http://www.afu.com/javafaq.html

Pedagogy

Chalk and Talk, PPT, group discussion, quiz, ICT tools and Peer Teaching.

LESSON PLAN FOR PRACTICAL: TOTAL HOURS (75 HRS)

Cycle	Description	Hrs	Mode
1	1. Write a Java program that prompts the user for an integer and then prints out all the prime numbers up to that Integer. 2. Write a Java program to multiply two given matrices. 3. Write a Java program that displays the number of characters, lines andwords in a text.	15	Writing and executing the program in a system
2	1. Generate random numbers between two given limits using Random class and print messages according to the range of the value generated. 2. Write a program to do String Manipulation using Character Array and perform the following string operations: a) String length b) Finding a character at a particular position c) Concatenating two strings 3. Write a program to perform the following string operations using String class: a) String Concatenation b) Search a substring c) To extract substring from given string	15	Writing and executing the program in a system
3	1. Write a program to perform string operations using String Buffer class: a) Length of a string b) Reverse a string c) Delete a substring from the given string 2. Write a java program that implements a multi-thread application that has three threads. First thread generates random integer every 1 secondand if the value is even, second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of cube of the number. 3. Write a threading program which uses the same method asynchronously to print the numbers 1to10 using Thread1 and to print90 to100 using Thread2.	15	Writing and executing the program in a system

4	1. Write a program to demonstrate the use of following exceptions. a) Arithmetic Exception b) Number Format Exception c) Array Index Out of Bound Exception d) Negative Array Size Exception 2. Write a Java program that reads on file name from the user, then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes. 3. Write a program to accept a text and change its size and font. Include bold italic options. Use frames and controls.	15	Writing and executing the program in a system
5	1. Write a Java program that handles all mouse events and shows the event name at the center of the window when a mouse event is fired.(Use adapter classes). 2. Write a Java program that works as a simple calculator. Use a grid layout to arrange buttons for the digits and for the +, -, *, % operations. Add a text field to display the result. Handle any possible exceptions like divide by zero. 3. Write a Java program that simulates a traffic light. The program lets the user select one of three lights: red, yellow, or green with radio buttons. On selecting a button, an appropriate message with "stop" or "ready" or "go" should appear above the buttons in a selected color. Initially there is no message shown	15	Writing and executing the program in a system

Course Designer

Mrs. P.Krishna Geetha

	Department of Computer Science			Class: II B.Sc.,				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
IV	Skill Enhancement Course	23OUCSSEC41	Web Designing	2	2	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship Oriented**
✓		

Unit -I HTML: HTML-Introduction-tag basics- page structure-adding comments working with texts, paragraphs and line break. Emphasizing test- heading and horizontal rules-list-font size, face and color alignment links-tables-frames.

Unit –II Forms & Images Using Html: Graphics: Introduction-How to work efficiently with images in web pages, image maps, GIF animation, adding multimedia, data collection with html forms textbox, password, list box, combo box, text area, tools for building web page front page.

Unit –III XML & DHTML: Cascading style sheet (CSS)-what is CSS-Why we use CSS-adding CSS to your web pages-Grouping styles-extensible markup language **(XML).**

Unit –IV Dynamic HTML: Document object model (DCOM) Accessing HTML & CSS through DCOM Dynamic content styles & positioning-Event bubbling-data binding. JavaScript: Client-side scripting, What is JavaScript, How to develop JavaScript, simple JavaScript, variables, functions, conditions, loops and repetition,

Unit –V Advance script, JavaScript and objects, JavaScript own objects, the DOM and web browser environments, forms and validations.

Books for Study:
1. Pankaj Sharma, "*Web Technology*", Sk Kataria& Sons Bangalore 2011.
2. Mike Mcgrath, "J*ava Script*", Dream Tech Press 2006, 1st Edition.
3. Achyut S Godbole & AtulKahate, "*Web Technologies*", 2002, 2nd Edition.

Books for Reference:

1. Laura Lemay, RafeColburn , Jennifer Kyrnin, "*Mastering HTML, CSS & Javascript Web Publishing*", 2016.

2. DT Editorial Services (Author), "*HTML 5 Black Book (Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP, jQuery)*", Paperback 2016, 2nd Edition.

Chapters:

> **Unit – I**   **:** 2,3
>
> **Unit – II**   **:** 3
>
> **Unit – III** **:** 4
>
> **Unit – IV** **:** 6
>
> **Unit – V**   **:** 7

Web Resources / E.Books:

Opensource digital libraries: PHP Programming

https://www.ukessays.com/essays/marketing/contemporary-issues-in-marketing-marketing-essay.php

https://www.w3schools.com/php/default.asp

Pedagogy:

Chalk and Talk, PPT, group discussion, quiz, ICT tools and Peer Teaching.

Rationale for nature of Course:

Knowledge and Skill: To make the students to know the basic concepts of programming language.

Activities to be given: students shall be practiced with different programming concepts.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge According to Bloom's Taxonomy (Up to K level)
CLO1	Develop working knowledge of HTML	K1 to K3
CLO2	Ability to Develop and publish Web pages using Hypertext Markup Language (HTML).	K1 to K3
CLO3	Ability to optimize page styles and layout with Cascading Style Sheets (CSS).	K1 to K4
CLO4	Ability to develop a java script	K1 to K3
CLO5	An ability to develop web application using Ajax.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	2	1	2	1	2
CLO2	3	3	2	2	3	3
CLO3	3	3	2	3	3	2
CLO4	3	2	3	2	2	3
CLO5	3	2	2	2	3	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN FOR PRACTICAL: TOTAL HOURS (30 HRS)

Cycle	Description	Hrs	Mode
1	HTML: HTML-Introduction-tag basics- page structure-adding comments working with texts, paragraphs and line break. Emphasizing test-heading and horizontal rules-list-font size, face and color alignment links-tables-frames.	6	Chalk and Talk, PPT, group discussion and quiz.
2	Forms & Images Using Html: Graphics: Introduction-How to work efficiently with images in web pages, image maps, GIF animation, adding multimedia, data collection with html forms textbox, password, list box, combo box, text area, tools for building web page front page.	6	Chalk and Talk, PPT, group discussion and quiz.
3	XML & DHTML: Cascading style sheet (CSS)-what is CSS-Why we use CSS-adding CSS to your web pages-Grouping styles-extensible markup language (XML).	6	Chalk and Talk, PPT, group discussion and quiz.
4	Dynamic HTML: Document object model (DCOM)Accessing HTML & CSS through DCOM Dynamic content styles & positioning-Event bubbling-data binding. JavaScript: Client-side scripting, What is JavaScript, How to develop JavaScript, simple JavaScript,	6	Chalk and Talk, PPT, group discussion and quiz.

	variables, functions, conditions, loops and repetition.		
5	Advance script, JavaScript and objects, JavaScript own objects, the DOM and web browser environments, forms and validations.	6	Chalk and Talk, PPT, group discussion and quiz.

Course Designer

Mrs.N.Kavitha

Department of Computer Science				Class: II B.Sc.,				
Sem	Category	Course Code	Course Title	Credits	Contact Hours/ Week	CIA	SE	Total
IV	Skill Enhancem ent Course	23OUCSSEC42	Software Testing	1	1	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship Oriented
✓		

Unit –I: Introduction: Purpose–Productivity and Quality in Software Testing Vs Debugging– Model for Testing–Bugs–Types of Bugs – Testing and Design Style.

Unit –II Flow / Graphs and Path Testing – Achievable paths – Path instrumentation Application Transaction Flow Testing Techniques**.**

Unit –III Data Flow Testing Strategies – Domain Testing: Domains and Paths – Domains and Interface Testing.

Unit –IV Linguistic –Metrics – Structural Metric – Path Products and Path Expressions. Syntax Testing–Formats–Test Cases.

Unit –V Logic Based Testing–Decision Tables–Transition Testing–States, State Graph, StateTesting.

Books for Study:

1. B.Beizer,"*SoftwareTestingTechniques*",IIEdn.,DreamTechIndia,NewDelhi, 2003.

Books for Reference:

1. I.Burnstein,2003,"*Practical Software Testing*",Springer International Edn.
2. E. Kit, 1995, "*Software Testing in the Real World: Improving the Process*", Pearson Education,Delhi.
3. R. Rajani,and P.P.Oak,2004,"*SoftwareTesting*",TataMcgrawHill,New Delhi.

Chapters:

Unit – I   **:** 1,2

Unit – II   **:** 3,4

Unit – III   **:** 5,6,7

Unit – IV   **:** 8,9

Unit – V **:** 10,11

Web Resources / E.Books:

Open source digital libraries: PHP Programming

https://www.geeksforgeeks.org/software-testing-basics/

https://www.javatpoint.com/software-testing-tutorial

https://www.globalapptesting.com/blog/software-testing

Pedagogy:

Chalk and Talk, PPT, group discussion, quiz, ICT tools and Peer Teaching.
Rationale for nature of Course:

Knowledge and Skill: To make the students to know the basic concepts of programming language.
Activities to be given: students shall be practiced with different programming concepts.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge According to Bloom's Taxonomy (Up to K level)
CLO1	Students learn to apply software testing knowledge and engineering methods	K1 to K3
CLO2	Have an ability to identify the needs of software test automation, and define and develop a test tool to support test automation.	K1 to K3
CLO3	Have an ability understand and identify various software testing problems, and solve these problems by designing and selecting software test models, criteria, strategies, and methods.	K1 to K4
CLO4	Have basic understanding and knowledge of contemporary issues in software testing, such as component-based software testing problems	K1 to K3
CLO5	Have an ability to use software testing methods and modern software testing tools for their testing projects.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	2	1	2	1	2
CLO2	3	3	2	2	3	3
CLO3	3	3	2	3	3	2
CLO4	3	2	3	2	2	3
CLO5	3	2	2	2	3	3

1-Basic Level   2- Intermediate Level   3- Advanced Level

LESSON PLAN FOR PRACTICAL: TOTAL HOURS (30 HRS)

Cycle	Description	Hrs	Mode
1	Introduction: Purpose–Productivity and Quality in Software Testing Vs Debugging–Model for Testing–Bugs–Types of Bugs – Testing and Design Style.	6	Chalk and Talk, PPT, group discussion and quiz.
2	Flow / Graphs and Path Testing – Achievable paths – Path instrumentation Application Transaction Flow Testing Techniques.	6	Chalk and Talk, PPT, group discussion and quiz.
3	Data Flow Testing Strategies – Domain Testing: Domains and Paths – Domains and Interface Testing.	6	Chalk and Talk, PPT, group discussion and quiz.
4	Linguistic –Metrics – Structural Metric – Path Products and Path Expressions. Syntax Testing–Formats–Test Cases.	6	Chalk and Talk, PPT, group discussion and quiz.
5	Logic Based Testing–Decision Tables–Transition Testing–States, State Graph, State Testing.	6	Chalk and Talk, PPT, group discussion and quiz.

Course Designer

Mrs.R.Chinthamani