

**Title of the Course : PYTHON PROGRAMMING**

**Category of the Course : Core Course**

**Course Code : U1R3CACCI1**

**Nature of the Course : Employability**

**Marks : CIA : 25 + Ext: 75 = 100**

**Hrs/Week: 05**

**Credits: 05**

**Total Inst. Hours: 75**

### **COURSE OBJECTIVES:**

1. To make students understand the concepts of Python programming
2. To apply the OOPs concept in PYTHON programming.
3. To impart knowledge on demand and supply concepts
4. To make the students learn best practices in PYTHON programming
5. To know the costs and profit maximization

### **Unit-I: BASICS OF PYTHON PROGRAMMING (Inst.Hours:15)**

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 (Inst.Hours:15)**

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 (Inst.Hours:15)**

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 (Inst.Hours:15)**

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****(Inst.Hours:15)**

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.

**TEXT BOOK (S):**

1. Reema Thareja,–”Python Programming using problem solving approach,”-First Edition, 2017,Oxford University Press.
2. Dr.R.Nageswara Rao, – Core Python Programming , First Edition, 2017, Dreamtech Publishers.

**REFERENCE BOOK (S):**

1. Vamsi Kurama–Python Programming : A Modern Approach, Pearson Education.
2. Mark Lutz, Learning Python, Orielly.
3. Adam Stewarts, – Python Programming -Online.
4. Fabio Nelli –Python Data Analytics,APress.
5. Kenneth A.Lambert ,–Fundamentals of Python –First Programs, CENGAGE Publication.

**ONLINE RESOURCE (S):**

1. <https://www.programiz.com/python-programming>
2. <https://www.guru99.com/python-tutorials.html>
3. [https://www.w3schools.com/python/python\\_intro.asp](https://www.w3schools.com/python/python_intro.asp)

**COURSE OUTCOMES:**

On completion of this course, students will	
CO1	Learn the basics of python, Do simple programs on python – <b>K3</b>
CO2	Develop program using selection statement, Work with Loops – <b>K4</b>
CO3	Concept of function, function arguments – <b>K3, K5</b>
CO4	Work with List, tuples and dictionary, Write program using list, Tuples and dictionary – <b>K3, K4</b>
CO5	Usage of File handlings in python, Concept of reading and writing files, Do programs using files – <b>K2, K4</b>

**MAPPING WITH PROGRAMME OUTCOMES:**

<b>CO/PSO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>	<b>PSO6</b>
<b>CO1</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>CO2</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>
<b>CO3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>2</b>
<b>CO4</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>
<b>CO5</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>

**Mean Overall Relationship is 2.53 which is HIGH**

**Title of the Course : PYTHON PROGRAMMING PRACTICAL**

**Category of the Course : Core Course**

**Course Code : U1R3CACCC2P**

**Nature of the Course : Employability**

**Marks : CIA : 40 + Ext: 60 = 100**

**Hrs/Week: 05**

**Credit: 05**

**Total Inst. Hours: 75**

**COURSE OBJECTIVES:**

1. Be able to design and program Python applications.
2. Be able to create loops and decision statements in Python.
3. Be able to work with functions and pass arguments in Python.
4. Be able to build and package Python modules for reusability.
5. Be able to read and write files in Python.

**LIST OF PRACTICALS:**

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.

<b>COURSE OUTCOMES</b>	
On completion of this course, students will	
CO1	Demonstrate the understanding of syntax and semantics of– <b>K3</b>
CO2	Identify the problem and solve using PYTHON programming techniques – <b>K3</b>
CO3	Identify suitable programming constructs for problem solving – <b>K3</b>
CO4	Analyze various concepts of PYTHON language to solve the problem in an efficient way – <b>K5</b>
CO5	Develop a PYTHON program for a given problem and test for its correctness – <b>K5</b>

**MAPPING WITH PROGRAMME OUTCOMES:**

<b>CO/PSO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>	<b>PSO6</b>
<b>CO1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>
<b>CO2</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>CO3</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>2</b>
<b>CO4</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>1</b>
<b>CO5</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>2</b>

**Mean Overall Relationship is 2.13 which is HIGH**

**Title of the Course** : **STRUCTURED PROGRAMMING LANGUAGE IN C**

**Category of the Course** : **FOUNDATION COURSE**

**Course Code** : **U1R3CAFC**

**Nature of the Course** : **EMPLOYABILITY**

**Marks : CIA : 25 + Ext: 75 = 100**

**Hrs/Week: 02**

**Credit: 02**

**Total Inst. Hours: 30**

**COURSEOBJECTIVES:**

1. To familiarize the students with the Programming basics and the fundamentals of C
2. To understand the concept using if statements and loops
3. To understand the concept of Arrays
4. To understand the concept of Functions
5. To understand the concept of implementing pointers.

**Unit- I: Overview of C**

**(Inst.Hrs:06)**

Importance of C, sample C program, C program structure, executing C program. Constants, Variables, and Data Types: Character set, C tokens, keywords and identifiers, constants, variables, datatypes, declaration of variables, assigning values to variables—Assignment statement, declaring a variable as constant, Operators and Expression.

**Unit – II: Decision Making and Branching:**

**(Inst.Hrs:06)**

Decision making with If, simple IF, IF ELSE, nested IF ELSE, ELSE IF ladder, switch, GOTO statement. Decision Making and Looping: While, Do-While, For, Jumps in loops.

**Unit – III: Arrays:**

**(Inst.Hrs:06)**

Declaration and accessing of one & two-dimensional arrays, initializing two-dimensional arrays, multidimensional arrays.

**Unit- IV: Functions:**

**(Inst.Hrs:06)**

The form of C functions, Return values and types, calling a function, categories of functions, Nested functions, Recursion, functions with arrays, call by value, call by reference.

**Unit-V: Structures and Pointers**

**(Inst.Hrs:06)**

Structures-Definition and declaration – Pointers – Definition-declaring and initializing pointers, accessing a variable through address and through pointer

**TEXT BOOK (S):**

1. E.Balagurusamy,"Programming in ANSI C", Fifth Edition, TataMcGraw-Hill,2010.

**REFERENCE BOOK (S):**

1. Byron Gottfried, Schaum's Outline Programming with C, Fourth Edition, Tata McGraw - Hill,2018.
2. Kernighanand Ritchie, The C Programming Language, Second Edition, Prentice Hall, 1998
3. Yashavant Kanetkar, Let Us C, Eighteenth Edition, BPB Publications, 2021

**ONLINE RESOURCE (S):**

1. <https://www.tutorialspoint.com/c> programming

**COURSE OUTCOMES:**

<b>COURSE OUTCOMES</b>	
On completion of this course, students will	
CO1	Know the purpose of C and Structure of C– <b>K1</b>
CO2	Identify the types of Branching statements in C– <b>K3</b>
CO3	Know the concepts of Arrays– <b>K3</b>
CO4	Know the concepts of Functions– <b>K3</b>
CO5	Develop a C program using Structures and Pointers– <b>K5</b>

**MAPPING WITH PROGRAMME OUTCOMES:**

<b>CO/PSO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>	<b>PSO6</b>
<b>CO1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>CO2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>
<b>CO3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>
<b>CO4</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>1</b>
<b>CO5</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>

Mean Overall Relationship is **2.16** which is **HIGH**

**Title of the Course** : **Object Oriented Programming Concepts Using C++**

**Category of the Course** : **Core Course**

**Course Code** : **U2R3CACC3**

**Nature of the Course** : **Employability**

**Max Marks** : 25 + 75 =100

**Hrs/Week** : 05

**Credit** : 5

**Total Hrs** : 75

**Course Objectives:**

1. Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.
2. Understand Dynamic memory management techniques using pointers, constructors, destructors.
3. Describe the concept of function overloading, operator overloading, virtual functions and Polymorphism.
4. Classify inheritance with the understanding of early and late binding, usage of exception handling.
5. Demonstrate the use of various OOPs concepts with the help of programs.

**UNIT-I**

**(Inst Hrs : 15)**

**Introduction to C++** - Basic concepts of Object-Oriented Programming — Benefits of OOP – Object Oriented Languages – I/O in C++ - C++Declarations – Structure of C++ Program – Tokens, Keywords, Identifiers, Constants.

**UNIT-II**

**(Inst Hrs : 15)**

**Control Structures:- Decision Making and Statements:** If..else, jump, goto, break, continue, Switch case statements - Loops in C++ :for, while, do. Functions in C++ - inline functions – Function Overloading.

**UNIT-III**

**(Inst Hrs : 15)**

**Classes and Objects:** Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects – friend functions – Overloading member functions – Constructor and Destructor.

**UNIT-IV**

**(Inst Hrs : 15)**

**Operator Overloading:** Unary, binary operators – Overloading Friend functions – type conversion – Inheritance: Types of Inheritance – Single, Multilevel, Multiple, Hierarchal, Hybrid, Multipath inheritance – Virtual base Classes – Abstract Classes.

## UNIT-V

(Inst Hrs : 15)

**Pointers–Declaration** – Arrays – Characteristics – array of classes - Files – File stream classes – file modes – Sequential Read / Write operations

### TextBook:

1. E.Balagurusamy –Object Oriented Programming with C++,TMH 2013,7<sup>th</sup> Edition.

### Reference Books:

1. Ashok N Kamthane –Object Oriented Programming with ANSI and Turbo C++ Pearson Education 2003.
2. Maria Litvin & Gray Litvin –C++ for you,Vikas Publication 2002.

### WebResources:

<https://alison.com/course/introduction-to-c-plus-plus-programming>

### Course Outcomes:

	Course Outcomes	Programme Outcome
	Upon completion of the course the students would be Able to:	
1	Remember the program structure of C with its syntax and semantics	PO1, PO6
2	Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)	PO2
3	Apply the programming principles learnt in real Time problems	PO4, PO7
4	Analyze the various methods of solving a problem and choose the best method	PO6
5	Code, debug and test the programs with appropriate test Case	PO7, PO8

**Mapping with Programme Outcomes:**

<b>CO/PSO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>	<b>PSO6</b>
<b>CO1</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>1</b>
<b>CO2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>
<b>CO3</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>-</b>
<b>CO4</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>
<b>CO5</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>2</b>
<b>Weightage of course contributed to each PSO</b>	12	9	6	5	6	4

**S – Strong - 3 M – Medium - 2 L – Low – 1**

**Title of the Course** : **C++ Programming Lab**

**Category of the Course** : **Core Course**

**Course Code** : **U2R3CACC4P**

**Nature of the Course** : **EMPLOYABILITY**

**Max marks** : 40 + 60 =100

**Hrs/Week** : 05

**Credit** : 5

**Total Hrs** : 75

**Course Objectives:**

1. Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.

2. Understand dynamic memory management techniques using pointers, constructors, destructors.

3. Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.

4. Classify inheritance with the understanding of early and late binding, usage of exception handling.

5. Demonstrate the use of various OOPs concepts with the help of programs.

1. Write a C++ program to demonstrate function overloading.

2. Write a C++ program to demonstrate Class and Objects.

3. Write a C++ program to demonstrate the concept of Passing Objects to Functions.

4. Write a C++ program to demonstrate the Friend Functions.

5. Write a C++ program to demonstrate Constructor.

6. Write a C++ program to demonstrate Destructor.

7. Write a C++ program to demonstrate Binary Operator Overloading

8. Write a C++ program to demonstrate Hierarchical Inheritance.

9. Write a C++ program to perform Sequential I/O Operations on a file.

10. Write a C++ program to find the Biggest Number using Command Line Arguments.

**TextBook:**

E.Balagurusamy,-Object-Oriented Programming with C++ II, TMH 2013, 7th Edition.

**Reference Books:**

1. Ashok N Kamthane – Object Oriented Programming with ANSI and Turbo C++, Pearson Education 2003.
2. Maria Litvin & Gray Litvin – C++ for you, Vikas Publication 2002.

**Web Resources:**

<https://alison.com/course/introduction-to-c-plus-plus-programming>

**Course Outcomes:**

<b>Course Outcomes</b>		<b>Programme Outcome</b>
Upon completion of the course the students would be Able to:		
1	Remember the program structure of C with its syntax and semantics	PO1, PO6
2	Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)	PO2
3	Apply the programming principles learnt in real Time problems	PO4, PO7
4	Analyze the various methods of solving a problem and choose the best method	PO6
5	Code, debug and test the programs with appropriate test Case	PO7, PO8

**Mapping with Programme Outcomes:**

<b>CO/PSO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>	<b>PSO6</b>
<b>CO1</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>1</b>
<b>CO2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>
<b>CO3</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>-</b>
<b>CO4</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>
<b>CO5</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>2</b>
<b>Weightage of course contributed to each PSO</b>	<b>12</b>	<b>9</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>4</b>

**S-Strong-3 M-Medium-2 L-Low-1**

**Title of the Course : Fundamentals of Information Technology**

**Category of the Course : Skill Enhancement Course**

**Course Code : U2R3CASEC 3:1**

**Nature of the Course : EMPLOYABILITY**

**Max marks : 25 + 75 =100**

**Hrs/Week : 02**

**Credit : 2**

**Total Hrs : 30**

### **Course Objectives:**

1. Understand basic concepts and terminology of information technology.
2. Have a basic understanding of personal computers and their operation.
3. Be able to identify data storage and its usage.
4. Get great knowledge of software and its functionalities.
5. Understand about operating system and their uses.

### **UNIT-I**

**(Inst Hrs : 06)**

**Introduction To Computers** – Generations of Computer–Data and Information – Components of Computer – Software – Hardware – Input Devices – Output Devices— Types of Operating System.

### **UNIT-II**

**(Inst Hrs : 06)**

**MS Word:** Introduction –Elements of Window – Files, Folders and Directories – Text Manipulating: Cut, Copy, Paste, Drag and Drop – Text Formatting: Font – Style, Size, Face and Colors (Both foreground and background) – Alignment – Bullets and Numbering - Header and footer - watermark–inserting objects (images, other application document) Table creation – Mail merge.

### **UNIT-III**

**(Inst Hrs : 06)**

**MS Excel:** Introduction – Inserting rows and columns – Sizing rows and columns – Implementing formulas – Generating series – Functions in excel – Creation of Chart – Inserting objects – Filter – Sorting – Inserting worksheet.

### **UNIT-IV**

**(Inst Hrs : 06)**

**MS PowerPoint:** Introduction – Slides Manipulation (Inserting new, Copy, paste, delete and duplicate slides) – Slide show – Types of Views – Types of Animations –Inserting Objects – Implementing multimedia (Video and Audio) – Templates (Built-in and User-Defined).

## UNIT-V

(Inst Hrs : 06)

**Internet:** Introduction to Internet and Intranet – Services of Internet - Domain Name – URL – Browser – Types of Browsers – Search Engine - E-Mail – Basic Components of E-Mail – How to send group mail. **E-Commerce:** Digital Signature – Digital Currency – Online shopping and transaction.

### Textbooks:

1. Anoop Mathew, S. Kavitha Murugesan (2009) – Fundamental of Information Technology, Majestic Books.
2. Alexis Leon, Mathews Leon, Fundamental of Information Technology, 2<sup>nd</sup> Edition.
3. S.K.Bansal – Fundamental of Information Technology.

### Reference Books:

1. Bhardwaj Sushil Puneet Kumar, – Fundamental of Information Technology.
2. G.Wilkson – Fundamentals of Information Technology, Wiley - Blackwell.
3. A.Ravichandran – Fundamentals of Information Technology, Khanna Book Publishing.

### Web Resources:

- <https://testbook.com/learn/computer-fundamentals>
- <https://www.tutorialsmate.com/2020/04/computer-fundamentals-tutorial.html>
- <https://www.javatpoint.com/computer-fundamentals-tutorial>
- [https://www.tutorialspoint.com/computer\\_fundamentals/index.htm](https://www.tutorialspoint.com/computer_fundamentals/index.htm)
- <https://www.nios.ac.in/media/documents/sec229new/Lesson1.pdf>

### Course Outcomes

CO On completion of this course, students will

CO1 Learn the basics of computer, Construct the structure of the required things in computer, learn how to use it.

### Programme Outcomes

PO1, PO2, PO3, PO4, PO5, PO6

CO2	Develop organizational structure using for the devices present currently under input or output unit.	PO1, PO2, PO3,PO4,PO5,PO6
CO3	Concept of storing data in computer using two header namely RAM and ROM with different types of ROM with advancement in storage basis.	PO1, PO2, PO3,PO4,PO5,PO6
CO4	Work with different software, Write program in the software and Applications of software.	PO1, PO2, PO3,PO4,PO5,PO6
CO5	Usage of Operating system in information technology which really acts as a interpreter between software and hardware.	PO1,PO2,PO3, PO4,PO5,PO6

**Mapping with Programme Outcomes:**

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	2	2	1	1
CO2	3	2	3	2	3	3
CO3	3	2	2	2	2	3
CO4	2	3	3	3	3	1
CO5	3	3	3	3	3	2
<b>Weightageofcourse contributedtoeach PSO</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>12</b>	<b>12</b>	<b>10</b>

**S – Strong - 3      M - Medium – 2 L - Low - 1**

**Title of the Course : Understanding Internet**

**Category of the Course : Skill Enhancement Course**

**Course Code : U2R3CASEC 3:2**

**Nature of the Course : EMPLOYABILITY**

**Max marks : 25 + 75 =100**

**Hrs/Week : 02**

**Credit : 2**

**Total Hrs : 30**

**Course Objectives:**

1. Knowledge of Internet medium.
2. Internet as a mass medium.
3. Features of Internet Technology.
4. Internet as source of infotainment.
5. Study of internet audiences and about cybercrime.

**UNIT-I**

**(Inst Hrs : 06)**

**The Emergence of Internet as a Mass Medium** – The world of World Wide Web

**UNIT-II**

**(Inst Hrs : 06)**

Features of Internet as a Technology

**UNIT-III**

**(Inst Hrs : 06)**

**Internet as a source of Infotainment** – Classification based on Content and Style

**UNIT-IV**

**(Inst Hrs : 06)**

**Demographic and Psychographic descriptions of Internet audiences** – Effect of internet on the values and life - styles

**UNIT-V**

**(Inst Hrs : 06)**

Present issues such as Cybercrime and future possibilities.

**Textbooks:**

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 Book:**

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.

**Web Resources:**

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

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

<b>Course Outcomes</b>	<b>Programme Outcomes</b>
CO On completion of this course, students will	
CO1 Knows the basic concept in internet Concept of mass medium and world wide web	PO1,PO2, PO3, PO4
CO2 Knows the concept of internet as a technology	PO1 – PO6
CO3 Understand the concept of infotainment and classification based on content and style	PO1 - PO6
CO4 Can be able to know about Demographic and psychographic description of Internet	PO1 - PO6
CO5 Understand the concept of cybercrime and future possibilities	PO1 - PO6

**Mapping with Programme Outcomes:**

<b>CO/PSO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	<b>PSO4</b>	<b>PSO5</b>	<b>PSO6</b>
<b>CO1</b>	3	3	3	3	3	3
<b>CO2</b>	3	3	2	3	3	3
<b>CO3</b>	2	3	3	3	3	3
<b>CO4</b>	3	3	3	3	3	3
<b>CO5</b>	3	3	3	2	3	3
<b>Weightage of course contributed to each PSO</b>	14	15	14	14	15	15

**S – Strong - 3 M – Medium - 2 L – Low - 1**

(Offered to Other Departments)

**Title of the Course** : **Computer Skill Development Course**

**Category of the Course** : **Skill Enhancement Course**

**Course Code** : **U2R3CASEC2:1**

**Nature of the Course** : **EMPLOYABILITY**

**Max Marks** : 25 + 75 = 100

**Hrs / Week** : 02

**Credit** : 2

**Total Inst. Hrs:** 30

**COURSE OBJECTIVES:**

1. To understand the basics of computer.
2. To understand the concept of computer component.
3. To get the knowledge about programming languages.
4. To understand the concept of computer networks.
5. To get the knowledge about applications of computer.

**UNIT - I: Introduction to Computer**

**(Inst Hrs: 06)**

Generations of Computer - Types of Computers (**ICT**) - Characteristics of Computers – Purpose of Computer – Limitations of Computer - Classification of Digital Computer Systems - Functions and Components of a Computer.

**UNIT - II: Computer Components**

**(Inst Hrs: 06)**

Memory Units - Main and Auxiliary Storage Devices (**Seminar**) - Input Devices - Output Devices - Classification and Characteristics of Output Devices - Introduction to Computer Software: System Software and Application Software.

**UNIT - III: Programming languages**

**(Inst Hrs: 06)**

Types of Programming Languages - General Software Features and Trends - Data Processing - Introduction to Database Management Systems (**Assignment**) - Introduction to Telecommunications.

**UNIT - IV: Computer Networks**

**(Inst Hrs: 06)**

Types of Networks - Network Topologies - Network Protocols - Network Architecture - Communication Systems (**ICT**) - Internet and World Wide Web: Internet Access and Basics - Internet Protocols - Internet Addressing – WWW – HTML - E-mail - Introduction to Multimedia

**UNIT - V: Applications of Computers****(Inst Hrs: 06)**

Computers In Business and Industry- Computers in Home- Computers in Education and Training- Computers in Entertainment, Science, Medicine And Engineering (ICT).

**TEXTBOOK (S):**

1. Alexis Leon, Mathews Leon “Fundamentals of Information Technology” Vikas Publications 1999.

**UNIT – I: Chapter 1, 2, 3; UNIT – II: Chapter 6, 7, 8, 9, 10;**

**UNIT – III: Chapter 12, 13, 14, 15, 17; UNIT – IV: Chapter 18, 19, 21, 22, 24**

**UNIT – V: Chapter 33, 34, 35, 36.**

**REFERENCE BOOK (S):**

1. Dennis P.Curtin, Kim Foley, Kunal Sen, Cathleen Morin “Information Technology the breaking wave” TATA-McGRAW-HILL 2007.
2. V.Rajaraman “Introduction to Information Technology” PHI Learning Private Limited 2003.

**ONLINE RESOURCE (S):**

1. [https://www.tutorialspoint.com/data\\_communication\\_computer\\_network](https://www.tutorialspoint.com/data_communication_computer_network)

**COURSE OUTCOMES:**

**After the successful completion of the Course the Students shall be able to,**

- Understand the knowledge about computers and its types
- Attain the skills about Input, Output and Memory Units
- Acquire the competence of computers and its applications
- Gain the knowledge about various types of programming language
- Obtain the insight about role of computers in human life

(Offered to Other Departments)

Title of the Course : **Computer Applications in Chemistry**

Category of the Course : **Skill Enhancement Course**

Course Code : **U2R3CASEC2:2**

Nature of the Course : **EMPLOYABILITY**

Max Marks : 25 + 75 = 100

Hrs / Week : 02

Credit : 2

Total Inst. Hrs: 30

**COURSE OBJECTIVES:**

1. To enable the students to learn the basics of computer.
2. To understand the concept of operating systems and its types.
3. To learn computer network basics.
4. To introduce the concept of C programming to the learners.
5. To enable the students to apply the concept of C Programming in applications of Chemistry.

**UNIT -- I: Introduction to Computer**

**(Inst Hrs: 06)**

Characteristics Of Computers – Organization Of A Computer – Secondary Storage Devices – Computer Languages – Low Level, Assembly And High Level Languages – Software – System and Application Software – Applications Of Computer (ICT) – Algorithms And Flow Charts.

**UNIT -- II: Operating system**

**(Inst Hrs: 06)**

MS-DOS, Simple DOS Commands – MS-Windows - Components Of Windows – Desktop, My Computer, Recycle Bin, Taskbar, My Briefcase and Network Neighborhood – Windows Accessories – Calculator, Games, Windows Media Player, Notepad and Imaging – Windows Explorer. Power Point – Creating a Presentation – Slide Preparation (**Seminar**).

**UNIT -- III: Fundamentals of Computer Networks**

**(Inst Hrs: 06)**

Importance – Mode Of Connections – Protocol – Network Topologies – Bus, Ring And Star Topologies – Network Architecture – Network Components – Hubs , Cables, Repeaters, Routers And Bridges, Internet And Its Application: Internet – Meaning – Importance – WWW (**Assignment**) – Browsing the Internet – Browsing Software – URL Addresses, Search Engines, Exploring Websites and Downloading Materials from Websites, E-Mail – Sending, Receiving and Storing Mail and Chatting.

**UNIT -- IV: Fundamentals of C**

**(Inst Hrs: 06)**

Character Set – Identifiers – Keywords – Data Types – Constants – Variables – Symbolic Constants – Operators – Expressions – Evaluation Of Expressions. Input And Output

Functions - getchar – putchar – scanf – printf – gets and puts Functions (ICT).

**UNIT – V: Applications of C - Programming: (Inst Hrs: 06)**

- Basic Structure of C - Programming
- Conversion of temperature from Kelvin to Celsius
- Calculation of rate constant using first order rate equation
- Calculation of root mean square, average and most probable velocities of molecules
- Calculation of Bohr radius
- pH determination using Henderson equation
- Determination of vander Waals constants (ICT)

**TEXT BOOK (S):**

1. E. Balagurusamy “Programming in ANSI C” 6<sup>th</sup> Ed., Tata McGraw-Hill – New Delhi.
1. Pundir Ansu Bansal “Computers for Chemists” 9<sup>th</sup> Ed., Pragati Prakashan Publication, 2011.
2. Andrews Tenenbaum “Computer Networks” 4<sup>th</sup> Ed., Prentice-Hall of India Pvt.Ltd. New Delhi -110 001.

**REFERENCE BOOK (S):**

1. Kishor Arora “Computer Application in Chemistry” 1<sup>st</sup> Ed., Anmol Publications Pvt. Ltd. 2004.
2. K.V.Raman “Computer Chemistry” Tata Mc Graw Hill 2003.

**ONLINE RESOURCE (S):**

1. <https://www.w3schools.in/c-tutorial>
2. [https://www.tutorialspoint.com/data\\_communication\\_computer\\_network](https://www.tutorialspoint.com/data_communication_computer_network)

**COURSE OUTCOMES:**

**After the successful completion of the Course the Students shall be able to,**

- Obtain knowledge about computer
- Understand the need for operating system
- Understand the fundamentals of computer networks
- Understand the basics of the programming language C
- Know the applications of Programming language C in Chemistry

(Offered to other Department)

**Title of the Course** : INTERNET SKILL DEVELOPMENT COURSE

**Category of the Course** : SKILL ENHANCEMENT COURSE

**Course Code** : U1R3CASEC2:3

**Nature of the Skill** : Employability and Skill development

**Marks : CIA : 25 + Ext: 75 = 100** **Hrs / Week** : 02

**Credits : 02** **Total Inst. Hrs** : 30

### **COURSE OBJECTIVES**

1. To understand the basics of Internet concepts.
2. To understand the web servers, browsers, security.
3. To get the knowledge about creating websites and markup languages.
4. To get the knowledge about searching and web casting techniques.
5. To get the knowledge about network and security programming.

#### **UNIT - I: Introduction to Network and Internet (Inst Hrs: 06)**

Basics of Networks – Topologies of Networks - Layering in Networks – Switching in the Network – Bridges, Routers and Gateways – Types of Networks (ICT). Internet: Basics of Internet – Addresses and Names for the Internet, Web Objects and Sites – E Mail (Seminar) - WWW – FTP - Telnet.

#### **UNIT - II: Web Servers, Browsers and Security (Inst Hrs: 06)**

The Web Server – Proxy Server – The Fast Ready Connection on the Web – Web Browsers – Netscape Communication Suite – Microsoft Internet Explorer (Seminar) – The Virus Menace in the Internet – Firewalls – Data Security.

#### **UNIT - III: Creating Websites and Markup Language (Inst Hrs: 06)**

The Art of Creating a Web Site – Hypertext and HTML – HTML Document Features – Document Structuring Tags in HTML – Special Tags in HTML (Assignment) – Dynamic HTML – XML for Universal Format for the Data on the web – Microsoft Front Page

#### **UNIT - IV: Searching and Web Casting Techniques (Inst Hrs: 06)**

Introduction – Search – Subscription – Web Casting (Assignment) – Web Casting Channel Push Technology Mode – Search Alerts – Searching Citation – Search Engines – Search Tools (ICT) – Using Navigator, Using Internet Explorer, Saving Search Results – Subscribing – Channels.

#### **UNIT - V: Network and Security Programming (Inst Hrs: 06)**

Network Programming (**Seminar**) – URL Classes – Socket Classes – Programming for Security – CGI – Four Steps for CGI Script – CGI Script Language (**ICT**) – Scripting Language “Java Script” – Dynamic Page Functionality using Servlets and JSPs – Using ASP, COMs, DCOMs.

**TEXTBOOK (S):**

1. Raj Kamal, “Internet and Web Technologies” Tata McGraw- Hill Publishing company limited, New Delhi

**REFERENCE BOOK (S):**

1. K.L.James ,“The Internet - A User’s Guide”, PHI Learning Private Limited 2010.

**ONLINE RESOURCE (S):**

1. <https://www.w3schools.com/>

**COURSE OUTCOMES:**

After the successful completion of the Course the Students shall be able to,

1. Outline about the Internet and its Applications - **K2**
2. List the skills of Servers, Browsers and Security - **K1**
3. Make use of HTML and XML in designing web pages - **K3**
4. Chose opt words for Searching and utilize web search engine - **K5**
5. Know where to apply the knowledge about network and security programming – **K1, K3**

**Relationship Matrix for CO, PO, PSO**

Course Outcome (CO)	Programme Outcome (PO)					Programme Specific Outcome (PSO)				
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
<b>CO-1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>
<b>CO-2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>
<b>CO-3</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>3</b>
<b>CO-4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>CO-5</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>

Mean Overall Relationship is **2.36** which is **HIGH**