

**MANONMANIAM SUNDARANAR UNIVERSITY, TIRUNELVELI**

UG COURSES – AFFILIATED COLLEGES

**B.Sc COMPUTER SCIENCE**

(Choice Based Credit System)

(with effect from the academic year 2017-2018 onwards)

Sem	Part I/ II/ III/ IV/V	Sub No.	Subject Status	Subject Title	Contact Hrs/ week	Credits
<b>I</b>	I	1	Language	Tamil/Other Language	6	4
	II	2	Language	English	6	4
	III	3	Core	Programming in C	5	4
	III	4	Major Practical - I	Programming in C	4	2
	III	5	<b>Allied - I</b> a) For the B.Sc.(CS) Programme	a)Discrete Mathematics	3	3
				b) For other U.G. Programme		
	III	6	<b>Allied Practical – I</b> a) For the B.Sc.(CS) Programmes	a) Computer Basics	4	2
				b) For other U.G. Programmes		
	IV	7	Common	Environmental Studies	2	2
<b>Subtotal</b>					<b>30</b>	<b>21</b>
<b>II</b>	I	8	Language	Tamil/Other Language	6	4
	II	9	Language	English	6	4
	III	10	Core	Programming in C++	5	4
	III	11	Major Practical - II	Programming in C++	4	2
	III	12	<b>Allied –II</b> a)For the B.Sc.(CS) Programmes	a)Digital Design	3	3
				b) For other U.G. Programmes		
	III	13	<b>Allied Practical – II</b> a)For the B.Sc.(CS) Programmes	a) Linux	4	2
				b) For other U.G. Programmes		
	IV	14	Common	Value Based Education	2	2
<b>Subtotal</b>					<b>30</b>	<b>21</b>
<b>III</b>	III	15	Core	Java Programming	5	4
	III	16	Core	Data Structures	5	4
	III	17	Major Practical - III	Java Programming	6	3

	III	18	Allied -III	Scripting Languages	4	3
	III	19	Allied Practical - III	Scripting Languages	4	2
	III	20	Skill Based I Core	Fundamentals of Operating System	4	4
	IV	21	Non-Major Elective	1. Fundamentals of Internet 2. Basic Programming Design	2	2
	<b>Subtotal</b>				<b>30</b>	<b>22</b>
IV	III	22	Core	Computer Architecture	5	4
	III	23	Major Practical - IV	Data Structure	6	3
	III	24	Major Elective - I	1. Multimedia Applications 2. Embedded System 3. Open Source Technologies	5	4
	III	25	Allied -IV	E-Commerce	4	3
	III	26	Allied Practical - IV	PYTHON	4	2
	IV	27	Skill Based II Common	Personality Development & Yoga	4	4
	IV	28	Non-Major Elective	1. HTML 2. Programming in C	2	2
	V		Extension Activity	NCC, NSS, YRC, YWF	0	1
<b>Subtotal</b>				<b>30</b>	<b>23</b>	
V	III	29	Core	Software Engineering and Testing	5	4
	III	30	Core	Data communication and Computer Network	5	4
	III	31	Core	Dot NET Technologies	5	4
	III	32	Major Practical - V	Dot NET	4	2
	III	33	Mini Project		4	4
	III	34	Major Elective - II	1. Mobile Computing 2. Cryptography 3. Cloud Computing	5	4
	III	35	Skill Based Common	Computers for Digital Era	2	2
	<b>Subtotal</b>				<b>30</b>	<b>24</b>
VI	III	36	Core	Operating Systems	4	4
	III	37	Core	Relational Database Management System	4	4
	III	38	Core	Computer Graphics and Visualization	4	4
	III	39	Core	Data Mining	4	4
	III	40	Major Practical -VII	Oracle	4	2
	III	41	Major Project		6	7
	III	42	Major Elective - III	1. Network Security 2. Big Data Analytics 3. Neural Networks	4	4
	<b>Subtotal</b>				<b>30</b>	<b>29</b>
<b>Total credits</b>				<b>140</b>		

**Programming in C**

**L T P C**

**3 1 0 4**

**Objective:** To obtain knowledge about the structure of the programming language C and to develop the program writing and logical thinking skill.

**Unit – I: INTRODUCTION**

C Declarations:- Character Set – C tokens – Keywords and Identifiers – Identifiers – Constants – Variables – Data types – Declaration of Variables – Declaration of Storage Class – Assigning Values to Variables – Defining Symbolic Constants – Declaring Variable as Constant. Operators and Expressions:- Introduction – Arithmetic Operators – Relational Operators – Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operator – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Expressions. Managing Input and Output Operations:- getchar( ) – putchar( ) – scanf( ) – printf( ).

**(14L)**

**Unit – II: CONTROL STRUCTURES**

Decision Making and Branching:- Decision Making with IF Statement – Simple IF statement – The IF...Else Statement – Nesting of IF...Else Statements – The ELSE IF ladder – The Switch Statement – The ?: Operator – The GOTO statement. Decision Making and Looping:- The WHILE Statement – The DO Statement – The FOR statement.

**(10L)**

**Unit – III: ARRAYS**

One-dimensional arrays – Declaration of One-dimensional arrays – Initialization of One-dimensional arrays - Two-dimensional arrays – Initialization of Two-dimensional arrays – Multi-dimensional arrays. Character Arrays and Strings:- Declaring and Initializing String Variables – Reading Strings from Terminal – Writing Strings to Screen – String Handling Functions.

**(10L)**

## **Unit – IV: FUNCTIONS**

User-Defined functions:- Need for User-defined functions – Definition of functions – Return Values and their Types – Function Calls – Function Declaration – Category of functions – No Arguments and No return values – Arguments but No return Values – Arguments with return values – No arguments but a return a value – Recursion – Passing Arrays to functions – Passing Strings to functions – The Scope, Visibility and lifetime of a variables. Structures and Unions:- Defining a Structure – Declaring Structure Variables – Accessing Structure Members – Structure Initialization – Arrays of structures –Unions.

**(14L)**

## **Unit – V: POINTERS AND FILES**

Pointers:- Understanding pointers – Accessing the Address of a Variable – Declaring Pointer Variables – Accessing a variable through its pointer – Pointer Expressions –Pointers as function arguments. File Management in C:- Defining and Opening a file – Closing a File – Input/output Operations on files – Error Handling during I/O Operations.

**(12L)**

### **Text Book :**

Programming in ANSI C – 6<sup>th</sup> Edition by E Balagurusamy – Tata McGraw Hill Publishing Company Limited.

### **Reference Books:**

1. Computer System and Programming in C by Manish Varhney, Naha Singh – CBS Publishers and Distributors Pvt Ltd.
2. Introduction to Computer Science, IITL Education Solutions Limited, Second Edition, Pearson Education
3. Computer Basics and C Programming by V. Rajaraman – PHI Learning Private Limited
4. Programming with C, Third Edition, Byron S Gottfried, Tata McGraw Hill Education Private Limited.

## Major Practical – I Programming in C

L T P C  
0 0 4 2

**Objective:** To develop skills in implementing algorithms through the programming Language C and to explore the features of C by applying sample problems.

**Each exercise should be completed within two hours.**

**It is compulsory to complete all the exercises given in the list in the stipulated time.**

1. To find all possible roots of a quadratic equation using if statement
2. Program to check vowel or consonant using switch case statement
3. Evaluate Sine series using while loop  
$$\sin(x) = x - x^3/3! + x^5/5! - \dots - x^n/n$$
4. Sort a list of numbers in ascending order
5. Search an element in an array
6. Reverse a number
7. Check the given string is palindrome or not
8. Find the binomial coefficient ( $nC_r$ ) value using recursion
9. Multiply two matrices (check for compatibility)
10. Transpose of a matrix
11. Find the sum of 'n' numbers by making function call
12. Alphabetical sorting (passing array as argument to function)
13. Exchange values using pointers and function
14. Prepare the student details using structure
15. Prepare mark sheet using file

**Discrete Mathematics**

**L T P C**  
**3 0 0 3**

**Objective:** To apply basic concepts for clear understanding of mathematical principles and to solve practical problems.

**Unit – I: RELATIONS**

Introduction to Relations – Binary relation – Classification of Relations – Composition of Relations – Inverse of Relation – Closure operation on Relations – Matrix representation of Relation - digraphs. (9L)

**Unit – II: FUNCTIONS**

Introduction to Functions – Addition and Multiplication of Functions - Classifications of Functions – Composition of Function – Inverse Function. (6L)

**Unit – III: MATHEMATICAL LOGIC**

Introduction – Statement (Propositions) – Laws of Formal Logic –Basic Set of Logical operators/operations - Propositions and Truth Tables – Algebra Propositions - Tautologies and Contradictions – Logical Equivalence – Logical Implication – Normal Forms. (10L)

**Unit – IV: MATRIX ALGEBRA**

Introduction – Definition of a Matrix - Types of Matrices – Operations on Matrices – Related Matrices – Transpose of a Matrix – Symmetric and Skew-symmetric Matrices – Complex Matrix – Conjugate of a Matrix – Determinant of a Matrix – Typical Square Matrices – Adjoint and Inverse of a Matrix – Singular and Non-singular Matrices – Adjoint of a Square Matrix – Properties of Adjoint of a Matrix – Properties of Inverse of a Matrix. (10L)

**Unit – V: GRAPH**

Introduction – Graph and Basic Terminologies – Types of Graphs – Sub Graph and Isomorphic Graph – Operations on Graphs – Representation of Graph. (10L)

**Text Book:**

DISCRETE MATHEMATICS, Swapan Kumar Chakraborty and Bikash Kanti Sarkar, OXFORD University Press.

**Reference Books:**

1. DISCRETE MATHEMATICS, Third Edition, Seymour Lipschutz and Marc Lars Lipson, Tata McGraw Hill Education Private Limited.
2. Discrete Mathematical Structures with Applications to Computer Science by J.P.Tremblay, R.Manohar TMH edition

## INTRODUCTION TO COMPUTERS

(For the Institutions with B.Sc. (Maths) Programme not opting Physics / Chemistry as Allied Subjects with effect from 2017-18 and onwards for Semesters - I & II and also for Semesters - III & IV of the 2016-17 batch )

### **Aim**

The Allied paper is to gain fundamental knowledge in computer

### **Objectives**

- To know the characteristic, parts and applications of computers
- To know the various devices and familiarize with their functions
- To know the usage of internet

### **UNIT I:**

Computer Basics: Introduction, Characteristics of Computers - Generation of Computers, Classification of Computers: Micro computers, Mini Computers, Mainframe, Super Computer, Careers in IT industry. Data representation in Computer: Types of number system, Conversion between Number bases. Coding Schemes: ASCII, EBCDIC, and Unicode.

### **UNIT II:**

Computer Memory and Storage: Introduction, memory hierarchy, Random Access memory (RAM), Read only memory (ROM), RAM, ROM and CPU interaction. Types of Secondary storage devices, Magnetic tape, magnetic disk, types of magnetic disk, optical disk, type of optical disks, USB drives.

### **UNIT III:**

Multimedia Essentials: Introduction, Definition, Building blocks of Multimedia, multimedia system, multimedia applications, Virtual reality, Multimedia and the internet.

### **UNIT IV:**

Operating system: Introduction, definition, Evolution of Operating System, Types of Operating System, Functions of Operating system.

Computer software: definition, categories of Software, Software Piracy.

## **UNIT V:**

The Internet: Introduction, Evolution of Internet – Basic Internet terms – Getting connected to Internet – Internet Applications – Data over Internet.

Emerging trends in IT: Introduction, E-Commerce – Electronic Data Interchange – Mobile Communication – Bluetooth – Global Positioning System – Infrared Communication – Smart Card – Imminent Technologies.

### **Text Book**

Introduction to Computers and Information Technology, Dr. D.Glory Ratna Mary, Mrs. S. Selvanayahi, Dr. V. Joseph Peter, Jupiter Publications

### **Reference Book**

1. Introduction to Computer Science, Second Edition, ITL Education Solutions Ltd, Pearson Education
2. Introduction to Computers, Peter Norton, 7th Edition, Tata McGraw Hill Education
3. Fundamentals of Computers, V.Rajaram, 5th Edition, PHI

## Computer Basics

L T P C  
0 0 4 2

**Objective:** To develop skills in implementing algorithms through the programming Language C and to explore the features of C by applying sample problems.

**Each exercise should be completed within two hours.**

**It is compulsory to complete all the exercises given in the list in the stipulated time.**

**(Any open source Office or MS Office)**

1. Usage of Numbering, Bullets, Indents and Headers in a Word Document
2. Prepare a Calendar in a Word Document
3. Design a wedding invitation in Word Document
4. Usage of Spell Check, Find and Replace
5. Picture Insertion and Alignment
6. Prepare a semester wise mark statement for a computer class of 20 students using any spreadsheet' worksheet. Total, average and rank the student marks. Give proper headings. Make the column headings bold and italic.
7. Consider the sample employee worksheet and calculate their salary.
8. Use any spreadsheet to use mathematical, statistical and logical functions
9. Use any spreadsheet to plot a chart for marks obtained by the students (out of 5) vs. frequency (total number of students in class is 50).
10. Create a database for a Telephone Directory. Create a table named phone book with relevant fields. Enter a minimum of 10 records.
11. Create a student database and create validation rules for fields like age, date of birth, pincode etc.
12. Enter data to the student database using a form.
13. Create a query and add criteria to the query.
14. Create a tabular auto report.
15. Customize a report in report design.

### Reference Books:

1. Microsoft Office 2016 Step By Step, Lambert, Joan , Frye, Curtis D., Phi Learning
2. *Microsoft Access 2016* Step By Step, By Lambert, Joan Phi Learning
3. *Microsoft Excel 2016* Step By Step, Curtis Frye, Phi Learning
4. Browse the Internet for Open Source Office Software

**M.S Office –List of Practicals**

**(For the Institutions with B.Sc. (Maths) Programme not opting Physics / Chemistry as Allied Subjects with effect from 2017-18 and onwards for Semesters - I & II and also for Semesters - III & IV of the 2016-17 batch )**

**Objective:** To develop skills in office automation by applying sample problems.

1. Text editing with different styles (Wedding or Invitation Card)
2. Table creation and editing (Calendar or Timetable)
3. Cut, Paste, find and replace usage
4. Mathematical symbols, suffix and super fix, equation creation and editing
5. Worksheet for Payroll
6. Worksheet for EB billing
7. Use any spreadsheet to plot a chart for marks obtained by the students (out of 5) vs. frequency (total number of students in class is 50).
8. Database Creation for library books
9. Database Creation for employee's details
10. Presentation for a seminar with dynamic provisions

## Object Oriented Programming in C++

L T P C  
3 1 0 4

**Objective:** To gain the basic knowledge of object oriented programming concepts and to understand the detail idea of C++ streams, Inheritance, Overloading of operators, functions, constructors, File Handling and templates concepts of C++ programming.

### **Unit – I: Principles of Object Oriented Programming**

Basic Concepts of Object Oriented Programming. **Classes and Objects:** Introduction – Specifying a Class – Defining Member Functions – Making an Outside Function Inline – Nesting of Member Functions - Private Member Functions – Static Data Members – Static Member Functions – Arrays of Objects – Objects as function arguments – Friendly Functions – Returning Objects . (12L)

### **Unit – II: Constructors and Destructors**

Introduction – Constructors – Parameterized Constructors – Multiple Constructors in a class – Constructors with Default Arguments – Dynamic Initialization of Objects – Copy Constructors – Dynamic Constructors – const objects - Destructors. (12L)

### **Unit – III: Operator Overloading, Type Conversions and Inheritance**

Defining Operator Overloading – Overloading Unary Operators – Overloading Binary Operators – Overloading Binary Operators using Friends – Rules for Overloading Operators – Type Conversions. **Inheritance (Extending Classes):** Introduction – Defining Derived Class – Single Inheritance - Making a Private Member Inheritable – Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance – Hybrid Inheritance – Virtual Base Classes - Abstract Classes. (14L)

### **Unit – IV: Pointers, Virtual Functions and Polymorphism**

Pointers - Pointers to Objects – this Pointer – Pointers to Derived Classes – Virtual Functions - Pure Virtual Functions. **Managing Console I/O Operations:** Introduction – C++ Streams – C++ Stream Classes – Unformatted I/O operations – Managing Output with Manipulators. (12L)

## **Unit – V: Files and Templates**

**Working with Files:** Introduction – Classes for File Stream Operations – Opening and Closing a file – Detecting end-of-file – File Modes – Sequential Input and Output Operations.

**Templates:** Introduction - Class Templates – Function Templates. **(10L)**

### **Text Book:**

Object Oriented Programming with C++, Sixth Edition by E. Balagurusamy, Tata McGraw Hill Publishing Company Limited.

### **Reference Book:**

1. Programming with ANSI C++, Bhushan Trivedi, 2010, Oxford University Press
2. The Complete Reference C++, Fourth/ Fifth Edition Herbert Schildt, Tata McGraw Hill Publishing Company Limited.
3. Programming With C++ Third Edition by D. Ravichandran, Tata McGraw Hill Education, 2011.
4. Programming in C++ Second Edition by Ashok N. Kamthane, Pearson Education

## Programming in C++

L T P C

0 0 4 2

**Objective:** To gain knowledge about the object oriented programming concepts and C++ streams, Inheritance, Overloading of operators, functions, constructors, File Handling and templates concepts of C++ programming by implementing sample programs.

**Each exercise should be completed within three hours.**

**It is compulsory to complete all the exercises given in the list in the stipulated time.**

- 1) Program with a Class and Member Functions.
- 2) Program to Overload Function.(minimum three geometric figures)
- 3) Program to implement Parameterized Constructor.
- 4) Program to implement Friend Function (minimum two classes)
- 5) Program to Overload Unary Minus Operator.
- 6) Program to Overload Binary Plus Operator.
- 7) Program to implement Multiple Inheritance for Family Details.
- 8) Program to implement Multilevel Inheritance for Bank Customer Details.
- 9) Program to implement Hierarchical Inheritance for Students Details.
- 10) Program to implement Virtual Function.

## Digital Design

L T P C

3 0 0 3

**Objective:** To understand the concept of digital systems, to operate on various number systems and simplify Boolean functions and to distinguish logical and combinational circuits.

### Unit – I: Number Systems, Codes and Digital Logic

Binary Number System – Binary to Decimal Conversion – Decimal to Binary Conversion – Octal Numbers – Hexadecimal Numbers – The ASCII Code – The Excess-3 Code – The Gray Code. **Digital Logic:** The Basic gates NOT, OR , AND – Universal Logic Gates NOR,NAND – AND-OR Invert Gates.

(10L)

### Unit – II: Combinational Logic Circuits

Boolean Laws and Theorems – Sum of Products Method – Truth Table to Karnaugh Map – Pairs, Quads and Octets – Karnaugh Simplifications – Don't Care Conditions – Product of Sums Method – Product of Sums Simplification.

(10L)

### Unit – III: Data Processing and Arithmetic circuits

Multiplexers – De-multiplexers – 1-of- 16- Decoders –BCD-to-Decimal Decoders – Seven-Segment decoders – Encoders – Exclusive-OR gates. **Arithmetic Circuits:** Binary Addition – Binary Subtraction – Unsigned Binary Numbers – Sign-Magnitude Numbers – 2's Complement Representation – 2's Complement Arithmetic.

(10L)

### Unit – IV: Flip-Flops

RS Flip Flops – Edge Triggered RS Flip Flops - Edge Triggered D Flip Flops - Edge Triggered JK Flip Flops – JK Master Slave Flip Flops.

(8L)

### Unit – V: Registers

Types of Registers – Serial in serial out – serial in parallel out – parallel in serial out – parallel in parallel out– Universal Shift Register.

(7L)

### Text Book:

Digital Principles and Applications, by Albert Paul Malvino & Donald P.Leach, Seventh Edition, Tata McGraw Hill Education Private Limited

### Reference Book:

1. Fundamentals of Digital Circuits, A.Anand Kumar, Second Edition, PHI Learning Private Limited
2. Digital design, M.Morris Mano, Third Edition, Pearson Education

## **Programming in C**

**(For the Institutions with B.Sc. (Maths) Programme not opting Physics / Chemistry as Allied Subjects with effect from 2017-18 and onwards for Semesters - I & II and also for Semesters - III & IV of the 2016-17 batch )**

**Objective:** To obtain knowledge about the structure of the programming language C and to develop the program writing and logical thinking skill.

### **Unit – I: INTRODUCTION**

C Declarations:- Character Set – C tokens – Keywords and Identifiers – Identifiers – Constants – Variables – Data types – Declaration of Variables – Declaration of Storage Class – Assigning Values to Variables – Defining Symbolic Constants – Declaring Variable as Constant. Operators and Expressions:- Introduction – Arithmetic Operators – Relational Operators – Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operator – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Expressions. Managing Input and Output Operations:- getchar( ) – putchar( ) – scanf( ) – printf( ).

### **Unit – II: CONTROL STRUCTURES**

Decision Making and Branching:- Decision Making with IF Statement – Simple IF statement – The IF...Else Statement – Nesting of IF...Else Statements – The ELSE IF ladder – The Switch Statement – The ?: Operator – The GOTO statement. Decision Making and Looping:- The WHILE Statement – The DO Statement – The FOR statement.

### **Unit – III: ARRAYS**

One-dimensional arrays – Declaration of One-dimensional arrays – Initialization of One-dimensional arrays - Two-dimensional arrays – Initialization of Two-dimensional arrays – Multi-dimensional arrays. Character Arrays and Strings:- Declaring and Initializing String Variables – Reading Strings from Terminal – Writing Strings to Screen – String Handling Functions.

## **Unit – IV: FUNCTIONS**

User-Defined functions:- Need for User-defined functions – Definition of functions – Return Values and their Types – Function Calls – Function Declaration – Category of functions – No Arguments and No return values – Arguments but No return Values – Arguments with return values – No arguments but a return a value – Recursion – Passing Arrays to functions – Passing Strings to functions – The Scope, Visibility and lifetime of a variables. Structures and Unions:- Defining a Structure – Declaring Structure Variables – Accessing Structure Members – Structure Initialization – Arrays of structures –Unions.

## **Unit – V: POINTERS AND FILES**

Pointers:- Understanding pointers – Accessing the Address of a Variable – Declaring Pointer Variables – Accessing a variable through its pointer – Pointer Expressions –Pointers as function arguments. File Management in C:- Defining and Opening a file – Closing a File – Input/output Operations on files – Error Handling during I/O Operations.

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Programming in ANSI C – 7<sup>th</sup> Edition by E Balagurusamy – Tata McGraw Hill Publishing Company Limited.

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3. Computer Basics and C Programming by V. Rajaraman – PHI Learning Private Limited
4. Programming with C, Third Edition, Byron S Gottfried, Tata McGraw Hill Education Private Limited.

## LINUX

L T P C

0 0 4 2

**Objective:** To understand and make effective use of Linux utilities and Shell scripting language to solve problems.

**Each exercise should be completed within three hours.**

**It is compulsory to complete all the exercises given in the list in the stipulated time.**

1. Use any text editor in linux(say vi) to enter a C program to find the largest of three numbers, compile using gcc and display the output.
2. Use any text editor in linux(say vi) to enter a C program to find the factorial of a given number, compile using gcc and display the output.
3. Linux commands
  - a. ls, mkdir, rmdir, cd, pwd, find, du(Directory oriented)
  - b. cat, cp, rm, mv, wc (File oriented)
  - c. ps, kill, batch, grep(Process oriented)
  - d. write, mail, wall (Communication oriented)
4. Linux commands
  - a. date, who, who am i, man, cal, echo, bc(General purpose)
  - b. Pipe, Filter
5. Write a shell script to display date in the mm/dd/yy format, time, username and current directory.
6. Write a shell script to find the sum of digits of a given number.
7. Write a program to generate Fibonacci series.
8. Write a program to check whether given string is palindrome or not
9. Write a shell script to find factorial of a given integer.
10. Write a shell script to generate mark sheet of a student. Take 3 subjects, calculate and display total marks, percentage and Class obtained by the student.

### Reference Books:

1. Linux: A practical approach, B. Mohamed Ibrahim, Firewall Media
2. Comdex Linux and Open Office course kit revised and upgraded, Gupta, Wiley India.
3. A practical guide to Linux command, editors, and shell programming 2/e; Mark G Sobell, Prentice Hall.
4. Linux Lab - Open source Technology : Ambavade - Dreamtech

**C Programming - List of Practicals**

**(For the Institutions with B.Sc. (Maths) Programme not opting Physics / Chemistry as Allied Subjects with effect from 2017-18 and onwards for Semesters - I & II and also for Semesters - III & IV of the 2016-17 batch )**

1. Write a program to convert the temperature from Fahrenheit to Celsius.
2. Write a program to test whether the given year is leap year or not.
3. Write a program to read two integers m and n and print the prime numbers in between them.
4. Write a program to evaluate the series  $e^x=1+ x/1!+x^2/2!+\dots$
5. Write a program to arrange the given set of numbers in ascending order.
6. Write a program to read two matrices and to find the sum and product of the matrices.
7. Write a program to check whether a given string is Palindrome or not.
8. Write a program to find Factorial value, Fibonacci, GCD value-Recursion.