Programme	B. Sc. Computer Science				
Course Code	CSC1MN104				
Course Title	Computer Essentials with Word Processing & Presentation				
Type of Course	**Minor**				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	1. Fundamental Mathematics Concepts: Number System				
Course Summary	This course serves as an introductory exploration into the foundational concepts of computing. Through a combination of lectures, hands-on exercises, and practical assignments, participants develop a holistic understanding of computer fundamentals. Ultimately, this course serves as a cornerstone for further studies in computer science, information technology, and related disciplines, empowering learners to navigate and contribute to the ever-evolving landscape of computing.				

Course Outcomes (CO):

CO	**CO Statement**	**Cognitive Level***	**Knowledge Category#**	**Evaluation Tools used**
CO1	Gain proficiency in understanding and representing data in various forms, including binary, decimal, hexadecimal, and character encodings.	Ap	F	Instructor-created exams / Quiz
CO2	Understand the basic principles of computer architecture and organization	U	C	Assignment / Demonstrations
CO3	Understand the concept of software and its significance in computing and be familiar with various types of software, including system software, application	U	C	Seminar Presentation / Group Tutorial Work

	software, and utility software.			
CO4	Understand the basic principles of document design and layout for enhanced readability and visual appeal	Ap	P	Hands-on practical sessions
CO5	Understand the importance of effective communication and visual aids in presentations.	Ap	P	Hands-on practical sessions
CO6	Acquire practical skills through hands-on exercises and projects, preparing participants to apply their knowledge in academic, professional, and personal contexts.	Ap	P	Hands-on practical sessions
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	**Introduction to Computer Science and data representation**		**10**	**20**
	1	Introduction to Computers: Generation, Classification, Characteristics of Computers, Significance	2	
	2	Number Systems :Binary, Decimal, Octal, Hexadecimal.	2	
	3	Conversion from one base to another	3	
	4	Computer Codes: BCD Code, Excess 3 Code, ASCII Code, Unicode, Gray Code	3	
II	**Basic Computer Organization**		**10**	**20**
	5	CPU organisation :Arithmetic and Logic Unit, Control Unit	1	
	6	Memory hierarchy: Registers, Cache, Primary Memory, Secondary Memory	2	
	7	Primary Storage: RAM(SRAM, DRAM), ROM**(Masked ROM,** PROM,EPROM,EEPROM)	2	
	8	Secondary storage: SSD,HDD, Magnetic tapes, Disk Storage	2	

	9	Input/Output Unit:- Input Device: Keyboard, MouseTouchpad, Trackball, Scanner, Graphics Tablet, Microphone, Webcam, Joystick/Gamepad, Biometric Input Devices Output Devices: Monitor/Display, Printer,Projector, Speakers, Headphones, Plotter	3	
III	**Understanding Softwares**		**10**	**20**
	10	**Introduction to Software** (Definition and Importance of Software, Types of Software-System software, Application Software, Prop oratory vs Open source)	2	
	11	**Operating Systems** (Introduction to Operating Systems , Common Operating Systems,User Interfaces)	2	
	12	**Device Drivers and Utilities (Device Drivers** , **System Utilities** ,**Productivity Software** ,**Multimedia Software)**	2	
	13	Computer languages(Machine, Assembly and HighLevel), Language Translator- Assembler, Compiler, Interpreter	2	
	14	**Security Software and Best Practices(Antivirus Programs** ,F**irewalls and Security Suites**,**Best Practices for Software Security)**	2	
IV	**Introduction to Word Processing & Presentation**		**15**	**10**
	15	**Basics of Word Processing**: Creating, Opening, Saving, and Closing Documents, Text Entry and Formatting (Font, Size, Color),Paragraph Formatting (Alignment, Spacing),Copying, Cutting, and Pasting Text,Spell Check and Grammar Check)	2	
	16	**Advanced Word Processing Techniques**(Styles and Templates,Tables and Graphics (Inserting, Formatting),Headers and Footers,Page Layout (Margins, Orientation),Document Views (Print Layout, Draft, Outline	2	
	17	Advanced Graphics and Multimedia(SmartArt and Shapes , Customizing SmartArt and shapes,Embedding and Linking Media,Advanced techniques for embedding and linking images, audio, and video)	2	
	18	),Document Collaboration (Track Changes, Comments),Mail Merge for Personalized Documents)	1	
	19	**Introduction to Presentation Software(**Creating a New Presentation, Slide Basics (Adding, Deleting, Rearranging), Slide Layouts and Choosing Templates,Text Entry and Formatting Inserting and Formatting Images and Shapes)	2	

	20	**Enhancing Presentations with Multimedia**(Inserting and Formatting Media (Audio, Video),Transitions Between Slides,Master Slides for Consistent Formatting,Design and Themes for Visual Appeal)	3	
	21	**Animations for Text and Objects (**Slide Show Setup (Timings, Rehearsal)	2	
	22	**Effective Presentation Delivery (**Tips for Engaging Presentations, Presenter View and Speaker Notes, Handling Q&A Sessions, Dealing with Technical Issues, Customizing Presentations for Different Audiences, Printing and Exporting Slides	1	
V	**Hands-on Word Processor and Presentation Tool:** **Practical Applications, Case Study and Course Project**		**30**	
		Identification and familiarization of Hardware Components (Processor, RAM,ROM, Peripheral devices, SSD, HDD, SMPS, Motherboard, Ports)	5	
		Microsoft Word: 1. Document Formatting: ● Create a new document, set margins to 1 inch, and change the page orientation to landscape. ● Apply a consistent font style, size, and color to the entire document. 2. Paragraph Formatting: ● Create a bulleted or numbered list with at least three items. ● Adjust the indentation and line spacing for a specific paragraph. 3. Headers and Footers: ● Insert a header with the document title and page number on the right. ● Add a footer with the date aligned to the center. 4. Tables and Graphics: ● Create a table with four columns and three rows. ● Insert an image into the document and adjust its position. 5. Styles and Themes: ● Apply a heading style to a section of text. ● Change the document theme to give it a different look. **Microsoft PowerPoint:**	20	

		6. Slide Creation: ● Create a new PowerPoint presentation and add five slides. ● Apply different slide layouts to each slide. 7. Text and Object Formatting: ● Add a title to the first slide and format it with a unique font and color. ● Insert a shape and customize its fill and outline colors. 8. Transitions and Animations: ● Apply a slide transition between the first and second slides. ● Add an entrance animation to a text box on the third slide. 9. Master Slides: ● Customize the master slide with a background color or image. ● Add a placeholder for slide numbers in the master slide. 10. Delivery and Export: ● Set up presenter view for a slideshow. Export the presentation as a PDF document		
		Case Study: Exploring feature of PowerPoint to enhance presentation skill	5	

Reference Books:

1. Tanenbaum, Andrew S. and Herbert Bos. Modern Operating Systems. 4th ed., Pearson, 2014.
2. Brookshear, J. Glenn. Computer Science: An Overview. 13th ed., Pearson, 2014.
3. Norton, Peter. Introduction to Computers. 7th ed., McGraw-Hill, 2016.
4. Patterson, David A. and John L. Hennessy. Computer Organization and Design: The Hardware/Software Interface. 5th ed., Morgan Kaufmann, 2013.
5. Stallings, William. Computer Organization and Architecture: Designing for Performance. 10th ed., Pearson, 2016.
6. Hennessey, John L. and David A. Patterson. Computer Architecture: A Quantitative Approach. 6th ed., Morgan Kaufmann, 2017.

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	-	-	-	-	-						
CO 2	2	3	-	-	-	-						

CO 3	-	-	1	1	-	-						
CO 4	-	-	2	3	-	-						
CO 5	-		-	3	-	-						
CO 6	-	-	-	3	-	-						

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments (20%)
- Final Exam (70%)

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓	✓		✓
CO 2	✓	✓		✓
CO 3	✓	✓		✓
CO 4			✓	✓
CO 5			✓	✓
CO 6			✓	

Programme	B. Sc. Computer Science Minor				
Course Code	CSC2MN104				
Course Title	Web Design Trends and Techniques				
Type of Course	**Minor**				
Semester	II				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	1. Knowledge in Computers. 2. Basic knowledge in Internet and Basic knowledge Computers and Internet				
Course Summary	The aim of this course is to provide students with an understanding of the basic concepts in web browser and to achieve the basic web designing skills				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	To get general introduction to internet	U	C	
CO2	To identify and analyse the current trends in web designing	Ap	P	
CO3	To understand basic knowledge in HTML5 and CSS3 for responsive web design	Ap	P	
CO4	To learn how to design a simple web applications	Ap	P	
CO5	To incorporate user experience principle in web design	Ap	P	
CO6	To Enable student to become	Ap	P	

	proficient in web designing through current technologies			

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)

- Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs
I	**Introduction to Web Design**		**09**
	1	Overview of Internet	1
	2	Over view of Internet Security	1
	3	Client Server System	1
	5	Websites and Digital Communication Tools	1
	6	Collaboration for Website Development	1
	7	Understanding the evolution of web design	2
	8	Exploring current design trends	1
	9	Overview of innovative websites	1
II	**HTML – Building the Foundation**		**12**
	10	Understanding the basic structure of web pages(Role of HTML, basic concept of webpage, html document structure <!DOCTYPE>,<html>,<head>,<body>).	2
	11	Exploring tags, attributes, and their significance (font type, text formatting tag, otrher text related tag, heading, paragraphs, list, link, image, common attributes like class, id, src, alt, href).	2
	12	Creating interactive forms to collect user data(form element tag like <form>,<input>,<textarea>,<select>,<button>,various form controls like text input, button, drodwonbox).	3
	13	Designing and structuring tabular data.(Basic table structure tag, colspan, rowspan)	2
	14	Enhancing the meaning and structure of your content(understanding semantic elements, benifit of semantic	3

		HTML).	
III	**CSS – Styling Your Web Pages**		**12**
	15	Introduction to CSS(understanding the concept of styling, presentation, basic synatx electors, properties and values, inline, internal and external style, different types of selectors)	3
	16	Introduction to common CSS properties(color,font,text,margin, padding, border, background), CSS box model(margin, border, padding and content), positioning elementss (static, relative, absolute, fixed, z-index)	3
	17	Introduction to layouts in web desigining, The role of responsive layouts, Flexbox layout model, creating Grid, Media queries and breakpoints	3
	18	Transition properties(duration, timing function, property), CSS Animation, Adding interactive hover effect. Overview of CSS frameworks and their benefits. Introduction to Bootstrap and its features.	3
IV	**JavaScript Essentials**		**12**
	19	Overview of Javascript, declaring the variables and understanding data types. Object in Javascript, basic operations and control flow in Javascript	3
	20	Understanding the Document Object Model (DOM).Using selectors to target HTML elements. Modifying content, attributes, and styles dynamically. Using selector, content, attributes and styles dynamically. Creating and Deleting elements. Navigating through the DOM hierarchy.	3
	21	Understanding events triggered, common events, writing event handlers, Bubbling and capturing phases of event propagation, controlling event flow, accessing event object	3
	22	Overview of JavaScript libraries and their benefits.Selecting elements, manipulating the DOM, and handling events with jQuery.Applying visual effects and animations with jQuery. Fade, slide, show/hide, and custom animations.Making asynchronous requests with jQuery.ajax(). Handling JSON data and updating the DOM dynamically.	3

V	**Hands-on Programming in Java(Using VSCode, Atom, Aptana Studio):**		**30**
	Practical Applications, Case Study and Course Project		
	1	Implement the following:	
		1. Program for implementing html tags	20
		2. Write program for implementing Style a paragraph (<p>) to have a red color, a font size of 16px, and a bold font weight	
		3. Write a program to implement CSS Box Model	
		4. Create a simple layout using Flexbox, with three div elements aligned horizontally.	
		5. Implement a media query that changes the background color of a webpage when the screen width is less than 600 pixels.	
		6. Write a JavaScript function that changes the text content of an HTML element with the id "demo" to "Hello, World!" when a button is clicked.	
		7. Declare a variable in JavaScript and assign it a string value. Also, mention the data type of the variable.	
		8. Write a JavaScript program for attaching a click event to a button.	
		9. Use JavaScript to make an asynchronous request to a JSON file and display the data on the webpage.	
		10. Use JavaScript to perform AJAX operation	
	2	Case Study	2
	3	**Project:** Build a web application for perform responsive web application.	8

Text Book :

1. HTML5 Black Book, Covers CSS3, JavaScript, XML, XHTML, AJAX, PHP And JQuery (Second Edition), Dreamtech Press,ISBN: 9789351199076

References :

1. Internet and World Wide Web, H.M.Dietel, Pearson.
2. Mastering HTML, CSS & Javascript Web Publishing (English, Paperback, Lemay Laura)
3. Web Designing (English, Paperback, Hirdesh Bhardwaj)

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	1	-	3	3	-	-						
CO 2	1	-	3	3	-	-						
CO 3	-	-	3	3	2	3						
CO 4	-	-	2	3	-	-						
CO 5	-	-	3	3	2	3						
CO 6			3	3	3							

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments (20%)
- Final Exam (70%)

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓	✓		✓
CO 4		✓		✓
CO 5		✓		✓

Programme	B. Sc. Computer Science				
Course Code	CSC3MN204				
Course Title	Programming fundamentals using C				
Type of Course	**Minor**				
Semester	III				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	1. Basic Computer Literacy 2. Basic Problem-Solving Skills				
Course Summary	This course teaches the basics of programming using the C language. C is a powerful and widely used programming language known for its efficiency and flexibility. Through this course, students will learn how to write, understand and debug C code to solve various problems and build simple applications.				

Course Outcomes (CO):

CO	**CO Statement**	**Cognitive Level***	**Knowledge Category#**	**Evaluation Tools used**
CO1	Demonstrate a solid understanding of fundamental programming concepts	An	P	Instructor-created lab exams / Quiz
CO2	Develop effective problem-solving skills by applying algorithmic thinking and logical reasoning.	An	P	Problem-solving assessments
CO3	Gain proficiency in writing, compiling, debugging, and executing	Ap	P	Modelling Assignments

	C programs to implement algorithms, solve problems, and create applications.			
CO4	Learn techniques to write efficient and optimized C code, including memory management, algorithm design, and performance tuning, to produce high-quality and scalable software solutions.	Ap	P	Modelling Assignments/ / Case studies
CO5	Understand and apply software development practices such as modular programming, code documentation and debugging techniques to write maintainable and robust C programs.	Ap	P	Modelling Assignments/ / Case studies
CO6	Develop critical thinking skills by analyzing and evaluating C code, identifying errors and inefficiencies, and proposing solutions to improve code quality and performance.	Ap	P	Hands-on exercises

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)

- Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	**Problem solving and logical Thinking**		**10**	**15**
	1	Overview of computational thinking concepts. Definition of algorithm and its characteristics .Understanding the importance	2	

		of algorithms in problem-solving		
	2	Algorithm Development:Steps involved in designing algorithms	2	
	3	Pseudocode as an intermediate step in algorithm development.	1	
	4	Understanding flowchart symbols and their meanings .Learning to represent algorithms using flowcharts.	2	
	5	Raptor as a precursor to text-based programming languages	2	
	6	Drawing simple flowcharts	1	
II	**Introduction to C**		**10**	**20**
	7	Structure of C program	2	
	8	C Character Set, Keywords, Identifiers	1	
	9	Data Types, Variables, Declarations, Symbolic Constants	2	
	10	Operators :Arithmetic, Logical, Relational & Equality, and Unary, Operator Precedence and Associativity	2	
	11	Library Functions, Comments	1	
	12	I/O functions- Formatted scanf() & printf().	2	
III	**Control Statements,Arrays & Strings**		**14**	**20**
	13	Selection Statements: if, if-else, switch	3	
	14	Iteration: while, do while, for	4	
	15	Arrays: One dimensional and Two Dimensional(introduction only)	3	
	16	Strings:Basic string handling functions	2	
	17	Structure :Definition,Processing-period Operator, Union(Concepts only)	2	
1V	**User defined Functions**		**11**	**15**
	18	Definition of function,Advantages, Understanding function prototypes and declarations	3	
	19	Introduction to function definitions and function calls	3	
	20	Exploring function parameters : Actual and Formal parameters	2	
	21	Recursion	2	

	22	Pointers-declarations(Basic concept only)	1	
V	**Hands-on C:** **Practical Applications, Case Study and Course Project**		**30**	
	1	Write a C program using Variables and Data Types Write a C program using Arithmetic Operations Write a C program using Loops Write a C program using Arrays Write a C program using Functions Write a C program using Strings	20	
	2	Case study: 1. Library Management System: 2. Develop a program to manage a library's collection of books. Implement functions for adding, removing, and searching for books. 3. Ticket Booking System: Design a program to manage ticket bookings for a cinema or theater.	5	
	3	Capstone/Course Project: Design a real-time project in C	5	

Reference:

1. Balagurusamy, E. Programming in ANSI C. Tata McGraw-Hill Education, 2019.
2. King, K. N. C Programming: A Modern Approach. 2nd ed., W. W. Norton & Company, 2008.
3. Kernighan, Brian W., and Dennis M. Ritchie. The C Programming Language. 2nd ed., Prentice Hall, 1988.
4. Prata, Stephen. C Primer Plus. 6th ed., Addison-Wesley, 2013.
5. Perry, Greg. Absolute Beginner's Guide to C. 3rd ed., Que Publishing, 2014.
6. Oualline, Steve. Practical C Programming. 3rd ed., O'Reilly Media, 1997.
7. Hanly, Jeri R., and Elliot B. Koffman. Problem Solving and Program Design in C. 8th ed., Pearson, 2016.
8. Gottfried, Byron S. Programming with C. 2nd ed., McGraw-Hill, 1996.
9. Holmes, Dan. C in a Nutshell. 2nd ed., O'Reilly Media, 2015.

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	1	-	-	-	1						
CO 2	1	-	2	-	-	-						

CO 3	-	-	2	-	-	-						
CO 4	-	1	3	3	-	3						
CO 5	-	2	3	3	-	3						
CO 6	-	-	-	-	-	3						

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
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Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments (20%)
- Final Exam (70%)

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1		✓		✓
CO 2	✓	✓		✓
CO 3		✓		✓
CO 4	✓			✓
CO 5	✓		✓	✓
CO 6	✓		✓	✓