B.Sc. (CS) Semester-III

Course Code	**US03MACSC01**	Title of the Course	**Fundamentals of Computer Programming Using C**
Total Credits of the Course	**4**	Hours per Week	**4**

Course Objectives:	1. To study fundamental concepts of the C programming language. 2. To understand logic development and structured programming concepts using C. 3. To learn the basics of library functions and user-defined functions. 4. To study fundamental concepts related to arrays, strings, and pointers.

Course Content		
Unit	Description	Weightage* (%)
1.	**Basics of C Language** – Introduction to translators and editors – History and Importance of C – Basic structure of a C program – Problem analysis – Various data types and operators – Constants, variables, expressions and manipulation – I/O statements, Assignment statements – Compilers vs Interpreters – Type Casting in C	25%
2.	**Logic Development, Structured Programming, Arrays** – Formatted I/O statements – Control constructs, conditions – Loop statements – Introduction to structured programming – Arrays – Command-Line Arguments	25%

3.	**Strings, Library Functions and User-Defined Functions** – Standard library functions – User-defined functions – Working with functions – String handling – Calling functions, passing arguments – Inline Functions	25%
4.	**Usage of Pointers** – Introduction and usage of pointers – Declaration, initialization and dereferencing of pointer variables – Pointers and addresses, Pointer arithmetic – Pointers and function arguments – Returning multiple values through pointers – Dynamic memory allocation – Pointers and arrays – Pointer to Pointer	25%

Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Examination	50%
2.	University Examination	50%

Course Outcomes: Having completed this course, the learner will be able to understand	
1.	the fundamental concepts of the C programming language.
2.	logic development and structured programming concepts using C.
3.	the basics of library functions and user-defined functions.
4.	the fundamental concepts related to arrays, strings, and pointers.

Suggested References:	
Sr. No.	References
1.	Balaguruswami, Programming in ANSI C., Tata McGraw Hill Publication, 2008.
2.	Cooper H. & Mullish H., The Spirit of C, Jaico Publication House, New Delhi, 2006.
3.	Kernighan B., Ritchie D., The C Programming Language, Prentice Hall, 1988.

On-line resources to be used if available as reference material
On-line Resources
1. https://www.tutorialspoint.com/
2. http://www.w3schools.com/
3. https://www.javatpoint.com/

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B.Sc. (CS) Semester-III

Course Code	**US03MACSC02**	Title of the Course	**Web Application Development – I**
Total Credits of the Course	**4**	Hours per Week	**4**

Course Objectives:	To understand 1. the fundamental concepts related to Internet and World Wide Web. 2. the basics of Web page designing, Frames and Forms. 3. the fundamentals of HTML5 and DHTML. 4. the basic concepts related to Cascading Style Sheets.

Course Content		
Unit	Description	Weightage* (%)
1.	**Introduction to Internet and Basics of HTML** – Introduction to Internet and Basics of HTML – Services provided by the Internet (email, HTTP, FTP, Telnet, WWW) – Basic terminology and concepts (URL, Webpage, Website, Web servers, Web browsers, Search Engines) – Components of a browser window – Use of menus and toolbar buttons – Security and privacy precautions – Introduction to HTML, HTML tags, Structure of HTML document, – Text and Paragraph formatting, ordered and unordered lists – Client-Server Architecture	25%
2.	**Web Page Designing, Frames and Forms** – Hyperlink, image tag – HTML tables – Frames, framesets, nested framesets – Designing HTML forms – Webpage layout – Multimedia tags (audio, video), Webpage layout – Form Validation using HTML5	25%

3.	**Introduction to HTML5 and DHTML** – HTML5: HTML5 new elements – ! Doctype, meta, Input Controls (number, date, time, calendar, ranges) – HTML5 semantics elements: header, footer, article, section. – HTML5 graphics elements: SVG, Canvas – Introduction to DHTML – Uses / Applications of DHTML, Components of DHTML – Introduction to AJAX	25%
4.	**Cascading Style Sheet** – Introduction to Cascading Style Sheet (CSS) – Introduction to the way of specifying Style Inline Internal – Cascading Style Sheet Attributes (font, color, text, background, border, margin, list) – Implementation of external style sheets – Advanced CSS (Rounded Corners, Shadows, Text effects, Animations,2D and 3D transforms) – **CSS Variables**	25%

Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Examination	50%
2.	University Examination	50%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand the fundamental concepts related to Internet and World Wide Web.
2.	understand Web page designing, Frames and Forms.
3.	understand basics of HTML5 and DHTML.
4.	design web pages using HTML5 and CSS3.
5.	create HTML forms.

6.	understand the fundamental concepts related to Cascading Style Sheets.

Suggested References:	
Sr. No.	References
1.	Ivan Bay ross, Web Enabled Commercial Applications Development using HTML, DHTML, Java script, Perl CGI, BPB, 2004.
2.	Bhaumik Shroff, Introduction to Internet and HTML scripting, 2nd edition, Ahmedabad Books India, 2008.
3.	Douglas E Comer, The Internet, Second Edition, PHI, May 2000.

On-line resources to be used if available as reference material
On-line Resources
4. https://www.tutorialspoint.com/
5. http://www.w3schools.com/
6. https://www.javatpoint.com/

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Course Code	**US03MACSC03**	Title of the Course	**Practical Based on US03MACSC01 and US03MACSC02**
Total Credits of the Course	**4**	Hours per Week	**8**

Course Objectives:	1. To apply fundamentals knowledge of C programming. 2. To apply the fundamental knowledge of HTML.

Course Content		
Part	Description	Weightage* (%)
I.	Practical Based on US03MACSC01	50%
II.	Practical Based on US03MACSC02	50%

Teaching-Learning Methodology	Practical-based learning in small groups and hands-on training through required ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Examination	50%
2.	University Examination	50%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand how to implement programs in C language.
2.	understand how to implement programs in HTML.
On-line resources to be used if available as reference material	
On-line Resources	
w3schools.com	

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