



# Module Presenter's Manual *for*

## Logic Building and Elementary Programming

*Effective from: March 2023  
Ver 1.0*

### Amendment Record

Version No.	Effective Date	Change	Replaced Pages
1.0	March 2023	New	-

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## 1. Introduction

At the end of this module, student will be able to:









- Explain the basic concept of program, including variable, data types and expressions
- Explain the basic Flow Control of a C program
- Explain point of C program focusing data and structured programming
- Explain array, structures, pointers, basic arithmetic and other basic data structures

## 2. Information on Session Allocation

Module	Online (No. of Hours)	Self-Study (No. of Hours)
<b>C</b>	<b>40</b>	<b>12</b>

Throughout this Presenter's Manual, the module **Logic Building and Elementary Programming** will be referred to as **C**.

Resources available on OnlineVarsity for Students:

Icons	Feature - Description/Functionality
	<b>Download Book</b> - Student has the option to download the subject related e-book and read offline.
	<b>Glossary</b> - Student can access a list of subject related specialized words with their definitions.
	<b>FAQ</b> - Student can access frequently asked questions and their answers.
	<b>Practice 4 Me</b> - Student can test and evaluate their understanding of module related topics.
	<b>Work Assignments</b> - Student can solve scenario based lab assignments (Hands-on). The faculty will evaluate and give their feedbacks.
	<b>References</b> - Student can access additional subject related material for reading.
	<b>Feedback</b> - Student can provide feedback on the course material.
	<b>Ask to Learn</b> – Student can submit subject related technical queries. Queries submitted will be directed to the particular course coordinator/head.

### 3. Week-wise Session Schedule

- A Session is of 2 hours duration.

Week	Day 1	Day 2		Day 3	Day 4	
1	Session 1 C – TL1	Session 2 C – TL2		Session 3 C – TL3	Session 4 C – TL4	S1
2	Session 5 C – TL5	Session 6 C – TL6		Session 7 C – TL7	Session 8 C – TL8	S2
3	Session 9 C – TL9	Session 10 C – TL10	S3	Session 11 C – TL11	Session 12 C – TL12	
4	Session 13 C – TL13	Session 14 C – TL14	S4	Session 15 C – TL15	Session 16 C – TL16	
5	Session 17 C – TL17	Session 18 C – TL18	S5	Session 19 C – TL19	Session 20 C – TL20	S6

TL – Online Session

S – Self Study Session (over and above the module duration)

#### 4. Session Coverage

Session No.	Session Title	Session Details	Deliverables' Mapping
1	C – TL1	<p>All the topics as listed below from Session 1 of <i>Elementary Programming in C</i> book should be covered in this session.</p> <p><b><u>Session 1: Basics of C</u></b></p> <ul style="list-style-type: none"> <li>• Introduction to programs</li> <li>• Constituents of any programming language</li> <li>• Algorithms, pseudo codes and flowcharts</li> <li>• Introduction to C</li> </ul>	<p><b>Elementary Programming in C</b></p> <p>SG – Session 1 XP – Session 1 TG – Session 1</p>
2	C – TL2	<p>All the topics as listed below from Session 2 of <i>Elementary Programming in C</i> book should be covered in this session.</p> <p><b><u>Session 2: Variables and Data Types</u></b></p> <ul style="list-style-type: none"> <li>• C language specific data storage mechanisms</li> <li>• Data Types</li> <li>• Variables and constants in C</li> <li>• Basic arithmetic operators with the variables and constants</li> </ul>	<p><b>Elementary Programming in C</b></p> <p>SG –Session 2 XP –Session 2 TG –Session 2</p>
3	C – TL3	<p>All the topics as listed below from Session 4 of <i>Elementary Programming in C</i> book should be covered in this session.</p> <p><b><u>Session 4: Operators and Expressions</u></b></p> <ul style="list-style-type: none"> <li>• Assignment Operators</li> <li>• Relational Operators</li> <li>• Logical operators</li> <li>• Expressions</li> <li>• Operator precedence</li> </ul>	<p><b>Elementary Programming in C</b></p> <p>SG – Session 4 XP – Session 4 TG – Session 4</p>
4	C – TL4	<p>All the Lab topics from Session 3 and Session 5 of <i>Elementary Programming in C</i> book should be covered in this session.</p>	<p><b>Elementary Programming in C</b></p> <p>Session 3 &amp; 5</p>
	S1	<p>All the assignments from Session 1 to Session 4 of <i>Elementary Programming in C</i> course should be covered in this session.</p>	<p><b>Elementary Programming in C (OnlineVarsity)</b></p>

Session No.	Session Title	Session Details	Deliverables' Mapping
			Session 1, 2, & 4
5	C – TL5	<p>All the topics as listed below from Session 6 of <i>Elementary Programming in C</i> book should be covered in this session.</p> <p><b><u>Session 6: Input and Output in 'C'</u></b></p> <ul style="list-style-type: none"> <li>• Introduction to Input Output in C</li> <li>• printf(), scanf(), getchar(), and putchar()</li> </ul>	<p><b>Elementary Programming in C</b></p> <p>SG – Session 6 XP – Session 6 TG – Session 6</p>
6	C – TL6	<p>All the topics as listed below from Session 7 of <i>Elementary Programming in C</i> book should be covered in this session.</p> <p><b><u>Session 7: Condition</u></b></p> <ul style="list-style-type: none"> <li>• Selection constructs</li> <li>• Using if</li> <li>• Nested ifs</li> <li>• if-else,</li> <li>• multiple ifs</li> <li>• switch-case</li> </ul>	<p><b>Elementary Programming in C</b></p> <p>SG – Session 7 XP – Session 7 TG – Session 7</p>
7	C – TL7	<p>All the topics as listed below from Session 6 of <i>Elementary Programming in C</i> book should be covered in this session.</p> <p><b><u>Session 9: Loop</u></b></p> <ul style="list-style-type: none"> <li>• Introduction to loops</li> <li>• for</li> <li>• while</li> <li>• do-while</li> <li>• break</li> <li>• continue</li> <li>• exit()</li> </ul>	<p><b>Elementary Programming in C</b></p> <p>SG – Session 9 XP – Session 9 TG – Session 9</p>
8	C – TL8	<p>All the Lab topics from Session 8 and Session 10 of <i>Elementary Programming in C</i> book should be covered in this session.</p>	<p><b>Elementary Programming in C</b></p> <p>Session 8 &amp; 10</p>
	S2	<p>All the assignments from Session 6 to Session 9 of <i>Elementary Programming in C</i> course should be covered in this session.</p>	<p><b>Elementary Programming in C (OnlineVarsity)</b></p>

Session No.	Session Title	Session Details	Deliverables' Mapping
			Session 6, 7, & 9
9	C – TL9	<p>All the topics as listed below from Session 11 of <i>Elementary Programming in C</i> book should be covered in this session.</p> <p><b><u>Session 11: Arrays</u></b></p> <ul style="list-style-type: none"> <li>• Introduction to the array data structure</li> <li>• Defining and using arrays</li> <li>• Creating and initializing String/Character arrays</li> <li>• Multidimensional arrays</li> </ul>	<p><b>Elementary Programming in C</b></p> <p>SG – Session 11 XP – Session 11 TG – Session 11</p>
10	C – TL10	All the Lab topics from Session 12 of <i>Elementary Programming in C</i> book should be covered in this session.	<p><b>Elementary Programming in C</b></p> <p>Session 12</p>
	S3	All the assignments from Session 11 of <i>Elementary Programming in C</i> course should be covered in this session.	<p><b>Elementary Programming in C (OnlineVarsity)</b></p> <p>Session 11</p>
11	C – TL11	<p>All the topics as listed below from Session 13 of <i>Elementary Programming in C</i> book should be covered in this session.</p> <p><b><u>Session 13: Pointers</u></b></p> <ul style="list-style-type: none"> <li>• Introduction to pointers</li> <li>• Using pointers</li> <li>• Comparison of pointers</li> <li>• Pointer arithmetic</li> <li>• Passing pointers as arguments to functions</li> <li>• Memory allocation</li> <li>• Relation of pointers with character arrays and strings</li> </ul>	<p><b>Elementary Programming in C</b></p> <p>SG – Session 13 XP – Session 13 TG – Session 13</p>
12	C – TL12	All the Lab topics from Session 14 of <i>Elementary Programming in C</i> book should be covered in this session.	<p><b>Elementary Programming in C</b></p> <p>Session 14</p>
13	C – TL13	All the topics as listed below from Session 15 of <i>Elementary</i>	<b>Elementary Programming in C</b>



Session No.	Session Title	Session Details	Deliverables' Mapping
		<p><i>Programming in C</i> book should be covered in this session</p> <p><b><u>Session 15: Functions</u></b></p> <ul style="list-style-type: none"> <li>User defined functions in C</li> <li>Structure of functions</li> <li>Declaration of functions and their prototypes</li> <li>Calling functions <ul style="list-style-type: none"> <li>Call by Value</li> <li>Call by Reference</li> </ul> </li> <li>Scope of variables (global and formal parameters)</li> <li>Storage classes and function pointers</li> </ul>	<p>SG – Session 15 XP – Session 15 TG – Session 15</p>
14	C – TL14	All the Lab topics from Session 16 of <i>Elementary Programming in C</i> book should be covered in this session.	<p><b>Elementary Programming in C</b></p> <p>Session 16</p>
	S4	All the assignments from Session 13 and Session 15 of <i>Elementary Programming in C</i> course should be covered in this session.	<p><b>Elementary Programming in C (OnlineVarsity)</b></p> <p>Session 13 &amp; 15</p>
15	C – TL15	<p>All the topics as listed below from Session 17 of <i>Elementary Programming in C</i> book should be covered in this session</p> <p><b><u>Session 17: Strings</u></b></p> <ul style="list-style-type: none"> <li>Concept of strings in C</li> <li>Pointers to strings</li> <li>String input and output functions</li> <li>Various string functions</li> <li>Passing arrays as function arguments</li> <li>Passing strings as function arguments</li> </ul>	<p><b>Elementary Programming in C</b></p> <p>SG – Session 17 XP – Session 17 TG – Session 17</p>
16	C – TL16	All the Lab topics from Session 18 of <i>Elementary Programming in C</i> book should be covered in this session.	<p><b>Elementary Programming in C</b></p> <p>Session 18</p>
17	C – TL17	<p>All the topics as listed below from Session 19 of <i>Elementary Programming in C</i> book should be covered in this session.</p> <p><b><u>Session 19: Advanced Data types and Sorting</u></b></p>	<p><b>Elementary Programming in C</b></p> <p>SG – Session 19 XP – Session 19 TG – Session 19</p>

Session No.	Session Title	Session Details	Deliverables' Mapping
		<ul style="list-style-type: none"> <li>• Need for structures</li> <li>• Defining structures</li> <li>• Assignment of values to structure elements</li> <li>• Accessing structure elements</li> <li>• Passing structures as function arguments</li> <li>• Arrays of structures</li> <li>• Pointers to structures</li> <li>• Passing pointers to structures as function arguments</li> <li>• Use of 'typedef'</li> <li>• 'Insertion Sort' and 'Bubble Sort' algorithms</li> </ul>	
18	C – TL18	All the Lab topics from Session 20 of <i>Elementary Programming in C</i> book should be covered in this session.	<b>Elementary Programming in C</b>  Session 20
	S5	All the assignments from Session 17 and Session 19 of <i>Elementary Programming in C</i> course should be covered in this session.	<b>Elementary Programming in C (OnlineVarsity)</b>  Session 17 & 19
19	C – TL19	All the topics as listed below from Session 21 of <i>Elementary Programming in C</i> book should be covered in this session.  <b><u>Session 21 - File Handling</u></b> <ul style="list-style-type: none"> <li>• Introduction to Streams</li> <li>• Text Streams and Binary Streams</li> <li>• File Pointers and Various File Functions</li> <li>• Current File Pointer</li> <li>• Command-Line Arguments</li> </ul>	<b>Elementary Programming in C</b>  SG – Session 21 XP – Session 21 TG – Session 21
20	C – TL20	All the Lab topics from Session 22 of <i>Elementary Programming in C</i> book should be covered in this session.	<b>Elementary Programming in C</b>  Session 22
	S6	All the assignments from Session 21 of <i>Elementary Programming in C</i> course should be covered in this session.	<b>Elementary Programming in C (OnlineVarsity)</b>  Session 21

## 5. Library References

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➤ <b>C – The Complete Reference</b> , Herbert Schildt
➤ <b>Programming with C</b> , Byron Gottfried
➤ <b>Programming in C</b> , Balaguruswamy

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