

# TECNIA INSTITUTE OF ADVANCED STUDIES

## GRADE 'A' INSTITUTE

Department of Information Communication & Technology

### COURSE PLAN

ACADEMIC SESSION 2024-25

# As per Scheme & Syllabus (w.e.f. Academic Session 2024-2025 onwards); As per UGC Curriculum & Credit Framework for Undergraduate Programme (CCFUP) (Dec 2022) Guru Gobind Singh Indraprastha University, New Delhi.

PROGRAMME CODE:	G20	PROGRAMME:	Bachelor of Computer Applications (BCA)	SHIFT:	1st	L	4	T/P	0	Credits	4
COURSE CODE :	BCA-101T	COURSE NAME:	Programming for Problem Solving using C	SECTION:	A						
		COURSE TYPE:	Core Course Theory (CCT)	FACULTY:	Mr. Gaurav Singh Rawat						

**LEARNING OBJECTIVES:**  
 This course will provide the learners the following:-  
 1. Understanding of the syntax and the semantics of C programming language  
 2. Building of their logics for solving a given problem.

PREREQUISITE: None

#### COURSE OUTCOME & MAPPING, COURSE ARTICULATION

		DISCIPLINARY KNOWLEDGE: Disciplinary Knowledge: Apply the knowledge of computer application concepts and domain knowledge to solve the problems in IT domain/IT industry.	PROBLEM ANALYSIS: Identify, formulate, review research literature, and analyse complex computer application problem at their workplace and for the society.	DESIGN /DEVELOPMENT OF SOLUTIONS: Design and evaluate solutions for computer applications problems, and design the processes that meet specified needs with appropriate consideration for the public health, safety, cultural, societal, and environmental considerations.	MODERN TOOL USAGE: Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computer application activities, with an understanding of the limitations.	PROFESSIONAL ETHICS: Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices.	LIFE-LONG LEARNING: Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.	PROJECT MANAGEMENT AND FINANCE: Demonstrate knowledge and understanding of the computing and manage projects and in multidisciplinary environments.	COMMUNICATION EFFICACY WITH COOPERATION/TEAMWORK: Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions. Function effectively as an individual and as a member or a leader.	SOCIETAL AND ENVIRONMENTAL CONCERN: Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practices.	INNOVATION AND ENTREPRENEURSHIP: Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.
CC - PO MAPPING		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Develop programming skills by learning the fundamentals of structured programming using C language.	4	4	4	2	-	2	1	-	-	2
CO2	Design and develop programs using arrays, storage classes, functions and to understand memory management through pointers	4	4	4	2	-	2	1	-	-	2
CO3	Critically analyze real world problems using structures, unions and develop applications for handling text and binary files.	4	4	4	2	-	2	1	-	-	2
CO4	Explore the use of command line arguments, string manipulation and standard libraries	4	4	4	2	-	2	1	-	-	2
<b>Course Articulation (Average)</b>		4	4	4	2	-	2	1	-	-	2

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S. No.	Lecture No.	Unit No.	Topic	Sessional Outcome	Experiential Learning	Participative Learning	Problem Solving Methodologies	ICT Tools & E-Resources Utilization	Mapping with CO	Class Material (PPT Faculty+ Students)	Additional Material (Links/ Journals/ Articles/ NEWS)	Mode of Assessment	Status
1	L1	1	C basics: C character set, Identifiers and keywords	Students will able to understand basic concepts of C character set, identifiers & keywords	Demonstration of loops	Discussion	Brainstorming	<a href="https://www.youtube.com/watch?v=70P4H1BKA">https://www.youtube.com/watch?v=70P4H1BKA</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=EMW4bAwU">https://www.youtube.com/watch?v=EMW4bAwU</a>	Questions from Assignment	
2	L2	1	Data types, constants, symbolic constants	Use data types, define constants in C programs		Lecture through PPT		<a href="https://www.youtube.com/watch?v=OGJD1Cu4Koc&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=18">https://www.youtube.com/watch?v=OGJD1Cu4Koc&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=18</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=ngt-gu7T2uE">https://www.youtube.com/watch?v=ngt-gu7T2uE</a>	Questions from Assignment	
3	L3	1	Variable Declarations	Use Data Types, Define Constants In C Programs		Lecture through PPT	Brainstorming	<a href="https://nptel.ac.in/courses/106105171">https://nptel.ac.in/courses/106105171</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=mgDaf5E3uGQ">https://www.youtube.com/watch?v=mgDaf5E3uGQ</a>	Questions from Assignment	
4	L4	1	Variable Declarations	Use & Declare The Variables In C Programs	Demonstration of loops			PPT					
5	L5	1	Structure Of Basic C Program			Flipped Classroom		<a href="https://www.youtube.com/watch?v=VSU7EaHMzIB&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=4">https://www.youtube.com/watch?v=VSU7EaHMzIB&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=4</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=buuhtuKDUk">https://www.youtube.com/watch?v=buuhtuKDUk</a>	PPT by Student	
6	L6	1	Writing And Executing The First C Program	Understand How To Create The Programs		Flipped Classroom		<a href="https://www.youtube.com/watch?v=VSU7EaHMzIB&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=4">https://www.youtube.com/watch?v=VSU7EaHMzIB&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=4</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=57WZ0hbbxg">https://www.youtube.com/watch?v=57WZ0hbbxg</a>	PPT by Student	
7	L7	1	#include Preprocessor Directive	Understand How To Write & Execute Programs In C Language		Flipped Classroom		<a href="https://www.techonthenet.com/c_language/directives/include.php">https://www.techonthenet.com/c_language/directives/include.php</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=MD0P38p3Y">https://www.youtube.com/watch?v=MD0P38p3Y</a>	PPT by Student	
8	L8	1	#include Preprocessor Directive	Use & Learn How Preprocessor Directive Works In C?	Demonstration of loops			PPT					
9	L9	1	Expression Statements, Compound Statements			Discussion		<a href="https://www.youtube.com/watch?v=qSGZzPZDs_M&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=22">https://www.youtube.com/watch?v=qSGZzPZDs_M&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=22</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=M58_UdhezvM">https://www.youtube.com/watch?v=M58_UdhezvM</a>	Viva-1	
10	L10	1	Operators: Arithmetic, Unary, Relational, Logical, Assignment	Understand About The Expression, Compound Statements		Lecture through PPT		<a href="https://www.youtube.com/watch?v=wiY0O_tHyrl&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=6">https://www.youtube.com/watch?v=wiY0O_tHyrl&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=6</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=5Q7CAmW83c">https://www.youtube.com/watch?v=5Q7CAmW83c</a>	Viva-1	
11	L11	1	Shorthand Assignment, Conditional And Bitwise, Comma Operator	Learn How To Use Operators In C Programs			Practical	<a href="https://www.youtube.com/watch?v=L2oataK7F10&amp;list=PLJ5C6qdAvBFzL9su5J-FX8x80BMhkPy1&amp;index=11">https://www.youtube.com/watch?v=L2oataK7F10&amp;list=PLJ5C6qdAvBFzL9su5J-FX8x80BMhkPy1&amp;index=11</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=8Q0b7zak">https://www.youtube.com/watch?v=8Q0b7zak</a>	Viva-1	
12	L12	1	Shorthand Assignment, Conditional And Bitwise, Comma Operator	Learn How To Use Shorthand Assignment & Conditional & Comma Operators	Demonstration of loops			PPT					
13	L13	1	Decision Making Statements: If Statement, If... Else Statement, Else If Ladder			Group Discussion	Practical	<a href="https://www.youtube.com/watch?v=HyDpW7A16_E&amp;list=PLRp3GssE9VZP80tWkbF984SDuPfOdZvSg&amp;index=15">https://www.youtube.com/watch?v=HyDpW7A16_E&amp;list=PLRp3GssE9VZP80tWkbF984SDuPfOdZvSg&amp;index=15</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=50AC20uL3e">https://www.youtube.com/watch?v=50AC20uL3e</a>	Questions from Assignment	

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14	L14	1	C Control Structures: While, Do..., While, For, And Switch Statement, Nested Control Structure	Describe C Control Structure Statements Like If, If-Else & Else If Ladder	Demonstration of loops		Practical	<a href="https://www.youtube.com/watch?v=pU2Nvsa_9zc&amp;list=PLRp3GssE9VZP80tWkbF984SDuPF0dZvSg&amp;index=22">https://www.youtube.com/watch?v=pU2Nvsa_9zc&amp;list=PLRp3GssE9VZP80tWkbF984SDuPF0dZvSg&amp;index=22</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=2111_921ndg">https://www.youtube.com/watch?v=2111_921ndg</a>	Questions from Assignment
15	L15	1	C Control Structures: Break, Labelled Break, Continue, Labelled Continue Statement, Exit Statement, Goto Statement,	Undersatnd How To Use Control Structures In Programs.		Flipped Classroom	Practical	<a href="https://www.youtube.com/watch?v=BZwdn-t_unY&amp;list=PLEAYKsg4uSQ2k6GwNhpGSHodGT8wfvfgwu&amp;index=17">https://www.youtube.com/watch?v=BZwdn-t_unY&amp;list=PLEAYKsg4uSQ2k6GwNhpGSHodGT8wfvfgwu&amp;index=17</a>	CO1	PPT	<a href="https://www.youtube.com/watch?v=18u1c0h0z0">https://www.youtube.com/watch?v=18u1c0h0z0</a>	PPT by Student
16	L16	2	C Control Structures: Break, Labelled Break, Continue, Labelled Continue Statement, Exit Statement, Goto Statement,	Use & Describe Control Structure Statements In C Programs				PPT		PPT		
17	L17	2	C Functions: Functions: Declaration, Definition & Scope		Demonstration			<a href="https://www.youtube.com/watch?v=CUBwN0rHxvg&amp;list=PLEAYKsg4uSQ2k6GwNhpGSHodGT8wfvfgwu&amp;index=23">https://www.youtube.com/watch?v=CUBwN0rHxvg&amp;list=PLEAYKsg4uSQ2k6GwNhpGSHodGT8wfvfgwu&amp;index=23</a>	CO2	PPT	<a href="https://www.youtube.com/watch?v=18u1c0h0z0">https://www.youtube.com/watch?v=18u1c0h0z0</a>	Questions from Assignment
18	L18	2	Recursion	Define & Describe About Functions, Their Declaration & Scope	Demonstration			<a href="https://nptel.ac.in/courses/106105171">https://nptel.ac.in/courses/106105171</a>	CO2	PPT	<a href="https://www.youtube.com/watch?v=18u1c0h0z0">https://www.youtube.com/watch?v=18u1c0h0z0</a>	Questions from Assignment
19	L19	2	Call By Value, Call By Reference	Create Programs Using Recursion			Practical	<a href="https://nptel.ac.in/courses/106105171">https://nptel.ac.in/courses/106105171</a>	CO1,CO2	PPT	<a href="https://www.youtube.com/watch?v=21A2T0A8">https://www.youtube.com/watch?v=21A2T0A8</a>	Questions from Assignment
20	L20	2	Call By Value, Call By Reference	Create Programs Using Call By Value & Call By Reference				PPT				
21	L21	2	Macros With Arguments, Nested Macros		Discussion			<a href="https://www.youtube.com/watch?v=i45XFn4Rag&amp;list=PLRp3GssE9VZP80tWkbF984SDuPF0dZvSg&amp;index=41">https://www.youtube.com/watch?v=i45XFn4Rag&amp;list=PLRp3GssE9VZP80tWkbF984SDuPF0dZvSg&amp;index=41</a>	CO2	PPT	<a href="https://www.youtube.com/watch?v=9g6x6QwqJG">https://www.youtube.com/watch?v=9g6x6QwqJG</a>	Viva-2
22	L22	2	# And ## Operators, Conditional Compilation	Define & Use Macros While Creating Programs In C Language	Demonstration of operators	Lecture through PPT		<a href="https://www.tutorialspoint.com/what-is-conditional-compilation-in-c-language">https://www.tutorialspoint.com/what-is-conditional-compilation-in-c-language</a>	CO2	PPT	<a href="https://www.youtube.com/watch?v=9g6x6QwqJG">https://www.youtube.com/watch?v=9g6x6QwqJG</a>	Viva-2
23	L23	2	Storage Classes: Automatic, External (Global), Static & Registers	Define & Use # And ## While Creating Programs In C Language		Flipped Classroom		<a href="https://www.coursera.org/lecture/c-for-everyone/storage-class-code-example-iOxEy">https://www.coursera.org/lecture/c-for-everyone/storage-class-code-example-iOxEy</a>	CO2	PPT	<a href="https://www.youtube.com/watch?v=9g6x6QwqJG">https://www.youtube.com/watch?v=9g6x6QwqJG</a>	Viva-2
24	L24	2	Storage Classes: Automatic, External (Global), Static & Registers	Classify Between Different Variable Declaration				PPT		PPT		
25	L25	2	Arrays: Arrays (1D, 2D), Strings					<a href="https://www.youtube.com/watch?v=19828WOCeMg&amp;list=PLJ5C_6qdAvBFzL9su5J-FXBx80BMhkPy1&amp;index=26">https://www.youtube.com/watch?v=19828WOCeMg&amp;list=PLJ5C_6qdAvBFzL9su5J-FXBx80BMhkPy1&amp;index=26</a>	CO1,CO2	PPT	<a href="https://www.youtube.com/watch?v=19828WOCeMg&amp;list=PLJ5C_6qdAvBFzL9su5J-FXBx80BMhkPy1&amp;index=26">https://www.youtube.com/watch?v=19828WOCeMg&amp;list=PLJ5C_6qdAvBFzL9su5J-FXBx80BMhkPy1&amp;index=26</a>	Class Test

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26	L26	2	Pointers	Understand About How To Use Arrays & Strings In The Programs		Lecture through PPT		<a href="https://docs.oracle.com/cd/E19253-01/817-6223/chp-pointers-4/index.html#:~:text=An%20array%20is%20represented%20by%20variables%20and%20array%20variables.">https://docs.oracle.com/cd/E19253-01/817-6223/chp-pointers-4/index.html#:~:text=An%20array%20is%20represented%20by%20variables%20and%20array%20variables.</a>	CO1,CO2	PPT	<a href="https://youtu.be/0M12jwvA9U">https://youtu.be/0M12jwvA9U</a>	Viva-3	
27	L27	2	Array & Pointer Relationship	Learn About How To Use Pointers	Demonstration of operators	Lecture through PPT	Brainstorming	<a href="https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/33">https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/33</a>	CO1,CO2	PPT	<a href="https://youtu.be/0M12jwvA9U">https://youtu.be/0M12jwvA9U</a>	Viva-3	
28	L28	2	Array & Pointer Relationship	Learn About How To Use Memory Locations And Pointer Relationship				PPT				Viva-3	
29	L29	2	Dynamic Memory Allocation		Demonstration	Flipped Classroom		<a href="https://archive.nptel.ac.in/content/storage2/courses/122104019/numerical-analysis/itm/IIITM5.HTM#:~:text=The%20dynamic%20allocation%20of%20memory,through%20a%20couple%20of%20examples.">https://archive.nptel.ac.in/content/storage2/courses/122104019/numerical-analysis/itm/IIITM5.HTM#:~:text=The%20dynamic%20allocation%20of%20memory,through%20a%20couple%20of%20examples.</a>	CO1,CO2	PPT	<a href="https://www.youtube.com/watch?v=ufb2M2K6">https://www.youtube.com/watch?v=ufb2M2K6</a>	Student PPT	
30	L30	2	Pointer To Arrays, Array Of Pointers	Use & Apply The Functions Related To Dynamic Memory Allocation		Flipped Classroom		<a href="https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/36">https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/36</a>	CO1,CO2	PPT	<a href="https://youtu.be/US4228AG8Y">https://youtu.be/US4228AG8Y</a>	Student PPT	
31	L31	2	Pointers To Functions	Learn About The Concept Of Pointers With Array		Flipped Classroom	Brainstorming	<a href="https://www.ibm.com/docs/en/zos/2.2.0?topic=functions-pointers">https://www.ibm.com/docs/en/zos/2.2.0?topic=functions-pointers</a>	CO1,CO2	PPT	<a href="https://youtu.be/US4228AG8Y">https://youtu.be/US4228AG8Y</a>	Student PPT	
32	L32	2	Pointers To Functions	Understand How Pointers Can Be Used In Functions				PPT					
33	L33	2	Array Of Pointers To Functions		Demonstration			<a href="https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/36">https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/36</a>	CO1,CO2	PPT	<a href="https://youtu.be/US4228AG8Y">https://youtu.be/US4228AG8Y</a>	Viva	
34	L34	3	Structures: Structures, Unions	Learn About Use Of Array Of Pointers To Functions.	MINI PROJECTS			<a href="https://www.ibm.com/docs/en/zos/2.4.0?topic=types-structures-unions">https://www.ibm.com/docs/en/zos/2.4.0?topic=types-structures-unions</a>	CO1,CO3	PPT	<a href="https://youtu.be/8n7QCa1xY4">https://youtu.be/8n7QCa1xY4</a>	Viva	
35	L35	3	Enumeration	Understand The Concept Of Structure & Union		Lecture through PPT		<a href="https://in.coursera.org/lecture/c-plus-plus-a/2-7-enum-operator-overloading-189ta">https://in.coursera.org/lecture/c-plus-plus-a/2-7-enum-operator-overloading-189ta</a>	CO1,CO3	PPT	<a href="https://www.youtube.com/watch?v=MD1Efh9ag">https://www.youtube.com/watch?v=MD1Efh9ag</a>	Viva	
36	L36	3	Enumeration	Learn The Concept Of Enumeration				PPT					
37	L37	3	Passing Structure To Functions			Lecture through PPT		<a href="https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/49">https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/49</a>	CO1,CO3	PPT	<a href="https://www.youtube.com/watch?v=6C0KCS6Z6">https://www.youtube.com/watch?v=6C0KCS6Z6</a>	Viva	

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38	L38	3	Arrays And Structures	Apply The Knowledge Of Passing Structure To Functions		Discussion		<a href="https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/50">https://freevidelectures.com/course/5014/nptel-introduction-programming-in-c/50</a>	CO1,CO3	PPT	<a href="https://youtu.be/7n7Q4u3t4">https://youtu.be/7n7Q4u3t4</a>	Viva	
39	L39	3	Typed Of, Structure	Analyze The Difference Between Array And Structure Using Programming		Lecture through PPT		<a href="https://www.youtube.com/watch?v=nCegkQnbJE&amp;list=PLJSC_6qdAvBFzL9su5J-FXBx80BMhkPy1&amp;index=57">https://www.youtube.com/watch?v=nCegkQnbJE&amp;list=PLJSC_6qdAvBFzL9su5J-FXBx80BMhkPy1&amp;index=57</a>	CO1,CO3	PPT	<a href="https://www.youtube.com/watch?v=5e50Kb1uW">https://www.youtube.com/watch?v=5e50Kb1uW</a>	Viva	
40	L40	3	Typed Of, Structure	Understand The Concept Of Identification Of Types & Difference B/W Structure And Union				PPT					
41	L41	3	Self-Referential Structure			Discussion		<a href="https://www.nielit.gov.in/gorakhpur/sites/default/files/Gorakhpur/Olevel_2_B4_Clang_22May_SS.pdf">https://www.nielit.gov.in/gorakhpur/sites/default/files/Gorakhpur/Olevel_2_B4_Clang_22May_SS.pdf</a>	CO1,CO3	PPT	<a href="https://www.youtube.com/watch?v=5u4e4y86u">https://www.youtube.com/watch?v=5u4e4y86u</a>	Viva	
42	L42	3	File Handling [Text (Ascii), Binary]	Learn About Self-Referential Structure		Brainstorming		<a href="https://www.geeksforgoeks.org/bit-fields-c/">https://www.geeksforgoeks.org/bit-fields-c/</a>	CO1,CO3	PPT	<a href="https://www.youtube.com/watch?v=V8tU8p7ZeeI">https://www.youtube.com/watch?v=V8tU8p7ZeeI</a>	Viva	
43	L43	3	File Input Output Operations	Learn How File Handling Works Using Programs		Lecture through PPT		<a href="https://www.youtube.com/watch?v=fWOnJFzOHYm&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=45">https://www.youtube.com/watch?v=fWOnJFzOHYm&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=45</a>	CO1,CO3	PPT	<a href="https://www.youtube.com/watch?v=2u_JB8kU8">https://www.youtube.com/watch?v=2u_JB8kU8</a>	Viva	
44	L44	3	File Input Output Operations	Learn How File Handling Works Using Programs				PPT				Viva	
45	L45	3	File Access Modes		Demonstration			<a href="https://www.youtube.com/watch?v=GU_nh88dSDc&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=46">https://www.youtube.com/watch?v=GU_nh88dSDc&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=46</a>	CO1,CO3	PPT	<a href="https://www.youtube.com/watch?v=Qn08aDx6Eg">https://www.youtube.com/watch?v=Qn08aDx6Eg</a>	Viva	
46	L46	3	File Pointers	Classify Between Different File Access Modes		Lecture through PPT		<a href="https://www.youtube.com/watch?v=GU_nh88dSDc&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=46">https://www.youtube.com/watch?v=GU_nh88dSDc&amp;list=PLEAYkSg4uSQ2k6GwNhpGSHodGT8wfvGwu&amp;index=46</a>	CO1,CO3	PPT	<a href="https://www.youtube.com/watch?v=Qn08aDx6Eg">https://www.youtube.com/watch?v=Qn08aDx6Eg</a>	Viva	
47	L47	3	File Positioning Functions	Classify Between Different File Access Modes		Discussion		<a href="https://www.sciencedirect.com/topics/engineering/file-pointer#:~:text=A%20file%20pointer%20stores%20the,h%20and%20is%20named%20FILE.">https://www.sciencedirect.com/topics/engineering/file-pointer#:~:text=A%20file%20pointer%20stores%20the,h%20and%20is%20named%20FILE.</a>	CO1,CO3	PPT	<a href="https://www.youtube.com/watch?v=5u4e4y86u">https://www.youtube.com/watch?v=5u4e4y86u</a>	Viva	
48	L48	3	File Positioning Functions	Use File Pointers Concept & Understand The Different Functions Related To File Positioning				PPT					
49	L49	4	Standard Library Functions From Stdio.H, Stdlib.H			Flipped Classroom		<a href="https://www.tutorialspoint.com/header-files-stdio-h-and-stdlib-h-in-c">https://www.tutorialspoint.com/header-files-stdio-h-and-stdlib-h-in-c</a>	CO4	PPT	<a href="https://www.youtube.com/watch?v=5u4e4y86u">https://www.youtube.com/watch?v=5u4e4y86u</a>	Student PPT	

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50	L50	4	Standard Library Functions From Conio,H, Ctype,H	Learn And Apply Functions Of Stdio,H, Stdlib,H In C Programs		Flipped Classroom		<a href="https://tutorials.freshersnow.com/cprogramming/c-conio-h-library-function/">https://tutorials.freshersnow.com/cprogramming/c-conio-h-library-function/</a>	CO4	PPT	<a href="https://www.youtube.com/watch?v=nuJEH24ICPQ">https://www.youtube.com/watch?v=nuJEH24ICPQ</a>	Student PPT	
51	L51	4	Standard Library Functions From Math.H	Learn And Apply Functions Of Conio,H, Ctype,H In C Programs	Demonstration	Flipped Classroom		<a href="https://www.tutorialspoint.com/c_standard_library/math_h.htm">https://www.tutorialspoint.com/c_standard_library/math_h.htm</a>	CO4	PPT	<a href="https://www.youtube.com/watch?v=nuJEH24ICPQ">https://www.youtube.com/watch?v=nuJEH24ICPQ</a>	Student PPT	
52	L52	4	Standard Library Functions From Math.H	Understand And Apply Functions Of Math.H In C Programs				PPT				Student PPT	
53	L53	4	Standard Library Functions From String.H			Flipped Classroom		<a href="https://www.tutorialspoint.com/c_standard_library/math_h.htm">https://www.tutorialspoint.com/c_standard_library/math_h.htm</a>	CO4	PPT	<a href="https://www.youtube.com/watch?v=nuJEH24ICPQ">https://www.youtube.com/watch?v=nuJEH24ICPQ</a>	Student PPT	
54	L54	4	Standard Library Functions From String.H	Understand And Apply Functions Of String.H In C Programs		Flipped Classroom		<a href="https://www.tutorialspoint.com/c_standard_library/math_h.htm">https://www.tutorialspoint.com/c_standard_library/math_h.htm</a>	CO4				
55	L55	4	Standard Library Functions From Process.H	Understand And Apply Functions Of String.H In C Programs		Flipped Classroom		<a href="https://www.tutorialspoint.com/c_standard_library/math_h.htm">https://www.tutorialspoint.com/c_standard_library/math_h.htm</a>	CO1	PPT		Student PPT	
56	L56	4	Standard Library Functions From Process.H	Understand And Apply Functions Of Process.H In C Programs				PPT					
57	L57	4	Usage Of Command Line Arguments			Discussion		<a href="https://en.wikipedia.org/wiki/Process.h">https://en.wikipedia.org/wiki/Process.h</a>	CO4	PPT	<a href="https://www.youtube.com/watch?v=nuJEH24ICPQ">https://www.youtube.com/watch?v=nuJEH24ICPQ</a>	Viva	
58	L58	4	Usage Of Command Line Arguments	Apply Command Line Arguments		Brainstorming		<a href="https://en.wikipedia.org/wiki/Process.h">https://en.wikipedia.org/wiki/Process.h</a>	CO4	PPT	<a href="https://www.youtube.com/watch?v=nuJEH24ICPQ">https://www.youtube.com/watch?v=nuJEH24ICPQ</a>	Viva	
59	L59	4	Previous Year Qp	Apply Command Line Arguments		Discussion & Doubt Clearing session	Brainstorming	<a href="https://en.wikipedia.org/wiki/Process.h">https://en.wikipedia.org/wiki/Process.h</a>	CO4	PPT	<a href="https://www.youtube.com/watch?v=nuJEH24ICPQ">https://www.youtube.com/watch?v=nuJEH24ICPQ</a>		
60	L60	4	Previous Year Qp	Revision Of Previous Year Question Papers		Discussion & Doubt Clearing session		PPT					

**Note :** 1 Credit (Theory) =15 Hrs. In a Semester; 1 Credit (Practical) =30 Hrs. In a Semester,

**Suggested Readings :(Latest Edition)**

**TEXTBOOKS**

- TB1.** 1. Yashwant Kanetkar, "Let us C" 17th edition, 2020  
**TB2.** 2. E. Balagurusamy, "Programming in ANSI C", 8th edition, 2019.  
**TB3.** 3. Asbok N. Kamthane, "Programming in C", Pearson Education, 3rd Edition, 2015

**REFERENCE BOOKS:**

- RB1.** 1. K. R. Venugopal, Sudeep R Prasad, "Mastering C", McGraw Hill Education; 2nd edition, 2017  
**RB2.** 2. V. Rajaraman, "Computer Programming in C", 2nd Edition, 2019  
**RB3.** 3. Kerighan and d. Ritchie, "The ANSI C Programming Language", 2015  
**RB4.** 4. Stephen Prata, "C Primer Plus" 6th Edition, 2014  
**RB5.** 5. Schaum's Online Series, "Programming with C", 4th Edition, 2018  
**RB6.** 6. Rerna Thurga, "Programming In C", Oxford University Press, September 2018

**JOURNALS**

1. Journal of Computer Science and Technology
2. International Journal of Computer Applications
3. Journal of Educational Computing Research
4. ACM Transactions on Programming Languages and Systems (TOPLAS)
5. International Journal of Programming Languages and Compilers
6. Computer Applications in Engineering Education
7. Journal of Computer Science Education
8. The Computer Journal
9. Software: Practice and Experience
10. Journal of Software Engineering and Applications

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