Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed-to-be University under section 3 of UGC Act 1956)

CIRCULAR

28.10.2017

The School of computing, Bharath Institute of Higher Education and Research is planned to conduct a certification value added course on **'C' Programming Concepts** for the benefit of II, III and IV year students. This course is scheduled from 03.11.2017 for 30hours which includes theory and practical. The timings are 1:30 PM to 4:30 PM from Friday (AN) and Saturday (FN&AN).

All Registered Students must attend all the classes without fail. The following faculty members are assigned to handle the course

S.No	Name of the Faculty	Designation
1	Mr.K.Sivaraman	Assistant Professor
2	Mr,B.Sundarrajan	Assistant Professor

Head of Department

HEAD OF DEPARTMENT
Department of Computer Scie & Engg.,
Bharath Institute of Higher Education & Research
(Deemed-to-be University U/S 3 of UGC Act, 1956)
Chennai-600 073. INDIA

To

Copy to CSE

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CERTIFICATE COURSE ON 'C' PROGRAMMING CONCEPTS

Date of Introduction of the Course: 28.10.2017

COURSE SYLLABUS

1. Introduction to C Programming

Fundamentals in C- A Simple C Program-Program execution phases-Character set-Constants-Number systems-Format specifiers-Identifiers -Variables-Data types-Keywords-Comments.

2. Operators and Expression

Arithmetic operators- Increment and decrement operators- Relational operators-Logical operators- Bitwise operators- Conditional operator- Size of operator- Type casting operator-Precedence and order of evaluation- Programming Examples-Operands-Expressions.

3. Input-Output Library Functions

Unformatted I-O Functions- Single Character Input-Output- String Input-Output- Formatted I-O Functions- printf() Width Specifier- scanf() Width Specifier- Programming Examples.

4. Conditional Statements

if- if-else- nested if-else- else-if ladder –Multiple Branching Control Statement- switch-case-Programming Examples.

5. Looping Statements

Loop Control Statements- while –do-while –for –Nested Loops –Jump Control statements – break –continue –goto –exit –return- Programming Examples.

6. Function

What is function? –Why function? –Advantages of using functions –Function Prototype – Defining a function –Calling a function –Return statement –Types of functions –Recursion – Nested functions –main() function –Library Function –Local and global variables – Programming Examples.

7. Storage class

Types of storage class –Scoping rules –Dealing with all storage classes –Programming Examples.

8. Arrays

One dimensional arrays –Declaration of 1D arrays –Initialization of 1D arrays –Accessing element of 1D arrays –Reading and displaying elements –Two dimensional arrays – Declaration of 2D arrays –Initialization of 2D arrays –Accessing element of 2D arrays – Reading and displaying elements –Programming Examples.

9.Pointers

Def of Pointer –Declaration of Pointer Variables –Assigning Address to Pointer Variables – De-referencing Pointer Variables –Pointer to Pointer –Pointer Arithmetic –Pointer comparisons –De-reference and increment pointer –pointer to const data –const pointer – const pointer to const data –Void pointer or Generic Pointer –Null pointer –wild pointer – Programming Examples.

10. Dynamic memory allocation

malloc() –calloc() –realloc()–free() –Core dump –Memory leak –Dynamic 1D and 2D Arrays -What is pre-processing? –Macro expansions –File inclusions –Conditional compilation –The stringification(#)and token passing operator –(##) operators –Programming Examples.

11. Strings

Strings versus character arrays –Initializing strings –Reading string –Displaying string –The %s format specifier –The gets() and puts() functions –string handling functions –string pointers –Two-dimensional character arrays or array of string –array of pointers to strings – Programming Examples.

12. Structure

What is structure? –Advantages of structures –Defining a Structure –Declaration of Structure Variables –Initialization of Structure Variables –Accessing Structure Members –Storage of Structures in Memory –Size of Structures –Reading and Displaying Structure Variables – Assignment of Structure Variables –Pointers to structures –Array of structures –Arrays within structures –Nested structures- Programming Examples.

13. Union and Enumeration

What are unions? –Structures versus unions –Working with unions –Initializing unions – Advantages of unions –enum keyword –typedef keyword –Programming Examples.

14. File Handling

Using files in C –Buffer and streams –Working with text files and Binary Files –File operations using std. library and system calls –File management I/O functions –Random Access Files –Programming Examples.

15. Process ,Threads and Graphics

What is process & Threads –Use of fork, vfork –Daemon process –Programming Example-Graphics using Glade interface with GTK+ –Working with GTK Widgets, Event handling – Developing Application Interfaces.

COURSE OBJECTIVES

In this course we plan to give students an overview of the C Programming, and an in-depth study into Facility in using common programming constructs, including loops and conditionals, Facility in performing stream input/output, Pointer, Structures ,Unions ,Pre-processor ,Arrays, Memory allocation , File handling and Graphics.

Specifically, the course has the following objectives:

Students will learn

1) Read, understand and trace the execution of programs written in C language.

2) Able to Write programs that perform operations using data types ,operators and Variables.

3) Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.

4) Understanding the concept of functions, Pointers ,Structures and Unions.

5) Ability to work with Graphics Packages ,File handling and Strings operations.

COURSE COORDINATOR

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Date of Introduction of the Course: 28.10.2017

The timings are 1:30 PM to 4:30 PM from Friday (AN) and Saturday (FN&AN).

Time Table& Lesson plan

CLASS	DATE	TOPIC
1,2	03-11-2017(AN)	**1. Introduction to C Programming** Fundamentals in C- A Simple C Program-Program execution phases-Character set-Constants-Number systems-Format specifiers-Identifiers -Variables-Data types-Keywords-Comments
3,4	04-11-2017(FN)	**2. Operators and Expression** Arithmetic operators- Increment and decrement operators- Relational operators-Logical operators-Bitwise operators- Conditional operator- Size of operator- Type casting operator- Precedence and order of evaluation- Programming Examples-Operands-Expressions.
5,6	04-11-2017(AN)	**3. Input-Output Library Functions** Unformatted I-O Functions- Single Character Input-Output- String Input-Output- Formatted I-O Functions- printf() Width Specifier- scanf() Width Specifier- Programming Examples.
7,8	04-11-2017(AN)	**4. Conditional Statements** if- if-else- nested if-else- else-if ladder –Multiple Branching Control Statement- switch-case-Programming Examples.
9,10	04-11-2017(AN)	**5. Looping Statements** Loop Control Statements- while –do-while –for –Nested Loops –Jump Control statements –break –continue –goto –exit –return- Programming Examples.
11,12	11-11-2017(FN)	**6. Function** What is function? –Why function? –Advantages of using functions –Function Prototype –Defining a function –Calling a function –Return statement –Types of functions –Recursion –Nested functions –main() function –Library Function –Local and global variables –Programming Examples.

13,14	**11-11-2017(AN)**	**7. Storage class** Types of storage class –Scoping rules –Dealing with all storage classes –Programming Examples.
15,16	**11-11-2017(AN)**	**8. Arrays** One dimensional arrays –Declaration of 1D arrays – Initialization of 1D arrays –Accessing element of 1D arrays –Reading and displaying elements –Two dimensional arrays –Declaration of 2D arrays – Initialization of 2D arrays –Accessing element of 2D arrays –Reading and displaying elements – Programming Examples.
17,18	**17-11-2017(AN)**	**9.Pointers** Def of Pointer –Declaration of Pointer Variables – Assigning Address to Pointer Variables –De-referencing Pointer Variables –Pointer to Pointer – Pointer Arithmetic –Pointer comparisons –De-reference and increment pointer –pointer to const data –const pointer –const pointer to const data – Void pointer or Generic Pointer –Null pointer –wild pointer –Programming Examples.
19,20	**18-11-2017(FN)**	**10. Dynamic memory allocation** malloc() –calloc() –realloc()–free() –Core dump – Memory leak –Dynamic 1D and 2D Arrays -What is pre-processing? –Macro expansions –File inclusions –Conditional compilation –The stringification(#)and token passing operator –(##) operators – Programming Examples.
21,22	**18-11-2017(AN)**	**11. Strings** Strings versus character arrays –Initializing strings – Reading string –Displaying string –The %s format specifier –The gets() and puts() functions –string handling functions –string pointers –Two-dimensional character arrays or array of string –array of pointers to strings –Programming Examples.
23,24	**18-11-2017(AN)**	**12. Structure** What is structure? –Advantages of structures – Defining a Structure –Declaration of Structure Variables –Initialization of Structure Variables – Accessing Structure Members –Storage of Structures in Memory –Size of Structures –Reading and Displaying Structure Variables –Assignment of Structure Variables –Pointers to structures –Array of structures –Arrays within structures –Nested structures- Programming Examples.
25,26	**24-11-2017(AN)**	**13. Union and Enumeration** What are unions? –Structures versus unions –

		Working with unions –Initializing unions – Advantages of unions –enum keyword –typedef keyword –Programming Examples
27,28	**25-11-2017(FN)**	**14. File Handling** Using files in C –Buffer and streams –Working with text files and Binary Files –File operations using std. library and system calls –File management I/O functions –Random Access Files –Programming Examples.
29,30	**25-11-2017(AN)**	**15. Process ,Threads and Graphics** What is process & Threads –Use of fork, vfork – Daemon process –Programming Example- Graphics using Glade interface with GTK+ –Working with GTK Widgets, Event handling –Developing Application Interfaces.

COURSE COORDINATOR

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Date of Introduction of the Course: 28.10.2017

School of Computing

Registered Students Name List

S.NO	REG.NO	NAME OF THE STUDENT
1	U14CS001	AADHITYA MALLIKA ARJUN
2	U14CS002	AAVULA DIXITH REDDY
3	U14CS003	ABDUL RAHIM.M
4	U14CS004	ABDUL RAZVI .M.K
5	U14CS005	ABDUR RASEED
6	U14CS006	ABHIKAMALI .A
7	U14CS007	ABHISHEK MANDURI
8	U14CS008	AJAY.D
9	U14CS009	AKASH CHANDRA AMBASTHA
10	U14CS010	AKHIL REDDY.G
11	U14CS011	AKSHAY.R
12	U14CS012	AMAR BASUMATARY
13	U14CS013	ANDREW JOSEPH.V
14	U14CS015	ANKITA
15	U14CS016	ANNILKRISHNAN .K
16	U14CS017	ASHUTOSH SRIVASTAVA
17	U14CS019	ARAMBAKAM,YASWANTH
18	U14CS021	AREEF SYED
19	U14CS022	ARUN KUMAR SINGH
20	U14CS023	ASIF NAZIR WANI
21	U14CS024	ATUL ANAND
22	U14CS025	BACHU HARISH
23	U14CS027	BALAJI SINGH. T
24	U14CS029	BALAKRISHNAN.T
25	U14CS031	BISHAL BANIK

26	U14CS033	BOORAGADDA VAMSI KRISHNA
27	U14CS034	BOYAPATI VINAY
28	U14CS035	BYSANI VENKAT SANDEEP
29	U14CS038	CHIDIRALA.SAI SHANKAR
30	U14CS040	CHINTAPANTI SRIKANTH
31	U14CS041	CHINTLA VENKATESH
32	U14CS042	CHUDAAMANI.V
33	U14CS045	DEEPAKSANKAR REDDY.M
34	U14CS046	DEVARAPALLI HIMAKAR
35	U14CS047	DEVULAPALLY NAGARAJU
36	U14CS048	DIVYA RUPINI.B

COURSE COORDINATOR **HEAD OF THE DEPARTMENT**

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CERTIFICATE OF PARTICIPATION

This certificate is presented to

DIVYA RUPINI.B

For actively participating in the value added course on " 'C' Programming Concepts "
Conducted by School of Computing, BIHER from 03.11.2017 to 25.11.2017.

COURSE COORDINATORS

HEAD OF THE DEPARTMENT

DIRECTOR

COURSE FEEDBACK FORM

Academic Year	2017 - 2018
Term	
Course Number	
Course Title	'c' Programming concepts
Number of Credits	

Type of Course	Regular		Elective		Add-on	✓

I. Information on the Respondent: (Tick (√) Appropriately)

1. **Percentage of classes attended**

0-20		20-40		40-60		60-80		80-100	✓

2. **Number of hours per week spent on the course (Other than lecture hours)**

0-2		2-4		4-6		6-8	✓	8-10	

3. **Preparation for the course by the student:**

(i)	Have done part of this course earlier	NO
(ii)	Has adequate prior exposure to the prerequisites	NO
(iii)	Had to pickup relevant additional topics through concurrent study	NO
(iv)	Have no exposure to the background material	Yes

4. **The expectations for taking the course by the student are:**

(a)	Enhance by skill base in the area of specializations	yes
(b)	Get exposed to a relevant subject	yes
(c)	Curiosity	yes
(d)	Better Employment Opportunity	yes
(e)	Complete Course requirements	yes
(f)	To Improve CGPA	

About the Instructor: Information on the Respondent: (Tick (√) Appropriately)

		A	B	C	D	E
1.	Pace of the Teaching/lecture	✓				
2.	Comment of the Subject	✓				
3.	Clarity of expression	✓				
4.	Level of preparation	✓				
5.	Level of interaction		✓			
6.	Accessibility outside the class	✓				
7.	Others (please specify)	—	—			

A: Excellent	✓	B: Very Good		C: Good		D: Satisfactory		E: Poor	

HEAD OF THE DEPARTMENT