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DR. D. Y. PATIL BIOTECHNOLOGY & BIOINFORMATICS INSTITUTE

TATHAWADE, PUNE

SYLLABUS FOR

SEMESTER I

B. TECH BIOTECHNOLOGY, B. TECH MEDICAL BIOTECHNOLOGY, M. TECH (INT.) BIOTECHNOLOGY

(BATCH 2018-19)

DR. D.Y. PATIL VIDYAPEETH, PUNE
DR. D. Y. PATIL BIOTECHNOLOGY & BIOINFORMATICS INSTITUTE, TATHAWADE, PUNE

B. TECH BIOTECHNOLOGY, B. TECH MEDICAL BIOTECHNOLOGY, M. TECH (INT.) BIOTECHNOLOGY

Academic year 2018-2019

SEMESTER I						
Course Code	**Course Name**	**L**	**T**	**P**	**Hr**	**Cr**
BS 101	Physics	3	0	2	5	4
BS 102	Chemistry	3	0	4	7	5
BT 101	Electronics & Instrumentation Engineering	3	0	2	5	4
BI 101	Computers & C Programming	3	0	4	7	5
HU 101	Communication Skills	1	2	0	3	3
BS 103	Maths I – Mathematics	3	1	0	4	4
BT 102	Engineering Graphics	2	0	2	4	3
HU 102	Disaster Management*	0	1	0	1	-
Total		**18**	**4**	**14**	**36**	**28**
Audit course, attendance is must						

TITLE OF THE COURSE: COMPUTERS AND C PROGRAMMING

COURSE CODE: BI 101   **L T P Hr C**

MARKS: 200   **3 0 4 7 5**

OBJECTIVE:

The objective of the course is

- To familiarize the students with computers and programming concepts.
- Programming module is intended to familiarize them with computer logic and solution of real world problems.

LEARNING OUTCOME

At the end of this course student would be able to understand basic principles of Computing and how the programming is done in C language.

PREREQUISITES

The course requires the basic knowledge about the Computer system.

COURSE DESCRIPTION

Sr No	Topic	Description	Hrs
1	Organization of Computer	History of computer and various parts and functions performed by them	1
2	Hardware & Software	Various hardware of computer, Application software and system software	1
3	Operating System	Various functions of operating system, MS-DOS, LINUX commands	3
4	Basics of programming	Machine language, High level language, Compilation process	1
5	Introduction to C	An overview of C, C expressions, Operators, Data types	1
6	The Decision controls in C	The 'if' statements within *if,* Multiple statements within *if ,* The '*if-else'* statement, The ! operator Hierarchy of Logical Operators, The Conditional Operators	4
7	Loop control structures	Loops, The '*While'* Loop, The '*for'* loop , Nesting of Loops , Multiple Initializations in the for loop	6

		The '*Odd*' Loop, The '*break*' statement, The '*continue*' statement, The '*do-while*' statement	
8	Case control structures	Decisions using switch The *goto* statement	1
9	Functions	What is a function? Why Use Functions Passing values between functions, Scope of functions	3
10	Array & strings	Single-dimension Arrays, Generating a Pointer to an array, Passing single dimension arrays to functions, Strings, Two-dimensional Arrays, Arrays of Strings, Multidimensional Arrays, Array Initialization, Variable-Length arrays	7
11	Puppeting on strings	What are Strings? ,More about Strings Pointers and Strings ,Standard Library String functions ,Two-Dimensional Array of Characters, Array of pointers to Strings,	6
12	Pointers	Pointer variables ,The pointer Operators ,Pointer Expressions ,Pointers and Arrays ,Initializing Pointers ,Pointers to Functions, C's Dynamic Allocation Arrays	4
13	Structures, Union, Enumeration & type definition	Structures, Arrays of structures, Passing structures to functions, Structure Pointers,Unions, Bit-Fields Enumerations ,Typedef	4
14	File Handling in C	Opening and closing a stream, open modes, Reading and writing to/from a stream, Predefined streams: stdin, stdout and stderr, Stream manipulation: fgetc(), fputc(), fgets() and fputs() functions	3
Total Number of Lectures			**45**

METHODOLOGY:
The course will be covered through lectures, demonstration and practicals**.**

EVALUATION SCHEME (THEORY)

Examination	**Duration**	**Marks**

I Internal	60 minutes	20
II Internal	45 minutes	15
Attendance		5
End Semester Exam	2 hours 30 minutes	60
Total		100

RECOMMENDED BOOKS:
1. The complete reference of C by H. Schildt, 4th edition, Mc Graw Hill, 2003.
2. Let us C By Y. Kanitkar, 15th edition, BPB Publication, 2017.
3. Data Structure Through C by Y. Kanitakar, 2nd edition, BPB Publication, 2003.
4. Understanding Pointers in C by Y. Kanitakar, 4th edition, BPB Publication, 2007.
5. Data Structure using C and C++ by A. M. Taneumbam, 2nd edition, PHI, 2017.
6. Computers Fundamentals by P K Sinha and P. Sinha, 6th edition, BPB publications, 2004.

PRACTICAL IN COMPUTERS & C PROGRAMMING
(4 Hrs. PER WEEK)   **MARKS: 100**

Sr. No.	Practical Name
1	Programs on basic programming in C
2	Programs using Decision Controls in C
3	Programs using while, do-while and for Loop
4	Programs using Case Control Structure, odd loop
5	Programs illustrating use of function
6	Programs illustrating use of arrays
7	Programs using Pointers and Structure
8	Programs illustrating use of String
9	Programs for file handling in C
10	Programs for Biological application • Finding complement of DNA • ORF finding • Inverted Repeats • Motif finding • Translation • Transcription

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PRACTICAL EVALUATION SCHEME

Examination

Practical   : 10 marks
Attendance   : 5 marks
Journal writing   : 5 marks
End semester examination : 30
Total   :50