ADD On (Advance C Programming)
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[SKILL ENHANCEMENT COURSE]

Semester: II	Credits: 2	Subject Code: ADBC22001	Lectures: 30

Course Outcomes:

At the end of this course the learner will be able to,

- Study advanced concepts of programming using the 'C' language.
- Relate code organization with complex data types and structures.
- Develop programs using files
- Gain knowledge and understand the basics of graphics programming.

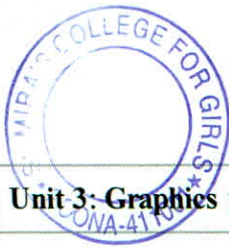| Unit 1: Union and Enumeration	08

- **Union**
    - Definition, Syntax.
    - Working with union
    - Initializing union
    - Advantages of union
    - Structures versus union
    - Advantages of union
- **Enumeration**
    - Enum keyword
    - typedef keyword
    - Working with Enum

Unit 2: File handling:	08

- **File**
- Def
- File Opening Modes
- Types of files - text and binary,
- **Functions**: fopen(), fclose(), fgetc(), fputc(), fgets(), fputs(), fscanf(), fprintf(), getw(), putw(), fread(), fwrite(), fseek(),ftell() etc
- **File Management**
- Opening/Closing a File
- Input/Output operations on Files
- Error Handling During I/O Operations
- Command Line Arguments

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Unit 3: Graphics programming	12
Introduction of graphics ○ Graphical functions ○ Simple Programs	

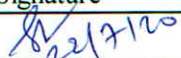| Unit 4: Hardware Interfacing with C	10
Introduction ○ The C Standard(s) **Embedded C Fundamentals** ○ Fixed-Width Integers ○ Binary Data Manipulation ○ Fixed and Floating Point Math ○ Performance Improvement ○ Data Storage and Lifetimes ○ The World Before main() **Interrupt Handling** ○ Interrupt Service Routines ○ Vector Tables ○ Hardware Hurdles ○ Disabling Interrupts ○ Interrupt Latency	

#12 hours for Library work, assignments, practical or field work

Reference Books:
- Abrams, M.H. *A Glossary of Literary Terms.* Prism: Bangalore; 2004. Yashwant Kanetkar, *Let us C*, BPB publication;   - Balagurusamy, *Ansi C,*MC Graw Hill Eductaion,2017   - Yashwant Kanetkar, *Understanding Pointers in C -*, BPB publication 2002.   - Herbert Schildt, *The Complete Reference C,* Tata McGraw-Hill publication 3 rd edition 2008.

Recommended website:-
- https://www.sanfoundry.com/advanced-c-programming-training/   - https://www.tutorialspoint.com/cprogramming/index.htm

Board Of Studies	Name	Signature
Head of the Department	Ms Smita Borkar	

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Head of the Department	Ms Smita Borkar		
Faculty*	Asst Prof. Monika Rajguru		
Faculty*	Asst Prof Divya Chitre		
Subject Expert (Outside SPPU)	Dr.Shankar Mali		
Subject Expert (Outside SPPU)	Dr. Sagar Jambhorkar		
VC Nominee	Prof Anjum Patel		
Industry Expert	Mr Sumit Palsingh:		
One Alumni***	Ms. Vidhi Thakkar		

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