**B.B.A.(C.A) Semester II**

**Subject Code : - 207**

**Subject Name -: Advance C Programming**

 Total Contact Hours: -30 Total Credits: - 2

Pre requisite: Basics of C, Array, Structure, Pointer.

Objectives:

* + To study advanced concepts of programming using the ‘C’ language.
	+ To understand code organization with complex data types and structures.
	+ To work with files

Credit Distribution: - 1 credit for theory (15 Lectures) and 1credit for Practical’s.

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| **Unit No.** | **Contents** | **Lectures** |
| 1 | Union and Enumeration* 1. Union

1.1.2. Def, Syntax. 1.2 Working with union 1.3 Initializing union  1.4 Advantages of union 1.3 Structures versus union  1.5 Advantages of union  Enumeration 1.6 Enum keyword  1.7 typedef keyword 1.8 Working with Enum | 3 |
| 2 | File handling: 2.1 File  2.1.1 Def 2.1.2 File Opening Modes 2.1.3 Types of files - text and binary,   2.2 Functions: fopen(), fclose(), fgetc(), fputc(), fgets(), fputs(),  fscanf(), fprintf(), getw(), putw(), fread(), fwrite(),  fseek(),ftell() etc  2.3 File Management 2.3.1 Opening/Closing a File  2.3.2. Input/Output operations on Files 2.3.3. Error Handling During I/O Operations  2.3.4. Command Line Arguments 2.4. Random Access File | 4 |
| 3 | Graphics programming 3.1 Introduction of graphics  3.2 Graphical functions 3.3 Simple Programs | 2 |
| 4 | Hardware Interfacing with C4.1.Introduction 4.1.1 The C Standard(s)4.2. Embedded C Fundamentals4.2.1.Fixed-Width Integers4.2.2 Binary Data Manipulation4.2.3.Fixed and Floating Point Math4.2.4 Performance Improvement4.2.5 Data Storage and Lifetimes4.2.6 The World Before main()4.3. Peripheral Control4.3.1. Peripheral Registers4.3.2.Memory-Mapped I/O4.3.3.Struct Overlays4.3.4.Volatile Keyword4.3.5. Bitmasks vs. Bitfields4.3.6. Device Drivers4.4. Interrupt Handling4.4.1. Interrupt Service Routines4.4.2.Vector Tables4.4.3.Hardware Hurdles4.4.4. Disabling Interrupts4.4.5.Interrupt Latency | 6 |

References:

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| 1. C: the Complete Reference, Schildt Herbert, 4 th edition, McGraw Hill
2. A Structured Programming Approach Using C, Behrouz A. Forouzan, Richard F. Gilberg, Cengage Learning India
3. The ‘C’ programming language, Brian Kernighan, Dennis Ritchie, PHI
4. Programming in C ,A Practical Approach, Ajay Mittal , Pearson
5. Programming with C, B. Gottfried, 3rd edition, Schaum’s outline Series, Tata McGraw Hill.
6. Programming in ANSI C, E. Balagurusamy, 7th Edition, McGraw Hill
7. Let Us C by Yashwant Kanetkar
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