Introduction to Programming using C

DCA-101

BLOCK I

Unit 1: Programming Building Blocks: Specification, Implementation , Hello, World! Example.

Unit 2: Variables, Expressions, and Statements: Variables, Operators, Expressions, Statements.

Unit 3: Functions: Passing by Value, Function Prototypes.

Unit 4: Variables: Up Scope, Storage Classes

BLOCK II

Unit 5: Pointers: Memory and Variables, Pointer Types, Dereferencing, Passing Pointers as Parameters.

Unit 6: Structures: Pointers to structs, Passing struct pointers to functions.

Unit 7: Arrays: Passing arrays to functions.

Unit 8: Strings

Unit 9: Dynamic Memory: malloc(), free(), realloc(), calloc().

BLOCK III

Unit 10: Advance Topics: Pointer Arithmetic, typedef, enum, More struct declarations, Command Line Arguments, Multidimensional Arrays, Casting and promotion, Incomplete types, void pointers, NULL pointers, More Static, Typical Multifile Projects, The Almighty C Preprocessor, Pointers to pointers, Pointers to Functions, Variable Argument Lists.

Unit 11:. Standard I/O Library: fopen(), freopen(), fclose(), printf(), fprintf(), scanf(), fscanf(), gets(), fgets(), getc(), fgetc(), getchar(), puts(), fputs(), putc(), fputc(), putchar(), fseek(), rewind(), ftell(), fgetpos(), fsetpos(), ungetc(), fread(), fwrite(),

feof(), ferror(), clearerr(), perror(), remove(), rename(), tmpfile(), tmpnam(), setbuf(), setvbuf(), fflush().

Unit 12: String Manipulation: strlen(), strcmp(), strncmp(), strcat(), strncat(), strchr(), strrchr(), strcpy(), strncpy(), strspn(), strcspn(), strstr(), strtok().

Unit 13: Mathematical Functions: sin(), sinf(), sinl(), cos(), cosf(), cosl(), tan(), tanf(), tanl(), asin(), asinf(), asinl(), acos(), acosf(), acosl(), atan(), atanf(), atanl(), atan2(), atan2f(), atan2l(), sqrt().

Suggested Readings:

1. Let us C-Yashwant Kanetkar.

2. Programming in C- Balguruswamy

3. The C programming Lang., Pearson Ecl – Dennis Ritchie

4. Structured programming approach using C-Forouzah & Ceilberg Thomson learning publication.

5. Pointers in C – Yashwant Kanetkar