



# ATMIYA UNIVERSITY

## FACULTY OF SCIENCE

### DEPARTMENT OF COMPUTER APPLICATIONS

#### MASTER OF COMPUTER APPLICATIONS

Course Code	Course Name	Credits
20MCACC102	Fundamental of Programming using C	03

#### ❖ Aim of the Course:

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| 1 | The aim of this course is to introduce to the students the rudiments of structured programming using C language. Students will become familiar with problem solving techniques and algorithm development. |
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#### ❖ Course Overview and Context:

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| 1 | The course is divided into five units. The first units deal with basic introduction of the programming and basics of C. Unit-2 designed to learn concepts of control statements and arrays. Unit-3 is designed to learn the concept of functions and pointers. Unit-4 is designed to learn the concept of file handling and User Defined Data Types. Unit-5 is an introductory unit for singly linked list, bitwise operators and C Pre-processor statements. |
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#### ❖ Course Outcomes:

Sr #	Course Outcome	Cognitive Level
1	To <b>illustrate</b> and <b>explain</b> basic concepts of programming	Understand
2	To <b>understand</b> the concept of control statements.	Understand
3	To <b>translate</b> the real-life situations in programming form and <b>solve</b> them using some fundamentals of Programming.	Understand, Apply
4	To <b>translate</b> the real-life situations in programming form and <b>solve</b> them by storing data into files and analysed user defined data types and test and detect that it is optimized applications.	Understand, Apply, Analyze, Evaluate
5	To <b>understand</b> the real-life situation in programming and <b>solve</b> it using concepts of linked list bitwise operators and c preprocessor statements.	Understand, Apply

#### ❖ Content of the Course:

##### Unit-1 Introduction to Programming & Basics of C

- Concepts of Algorithm & Flowcharts
- Process of Compilations
- Generic of Language, Basic features of C Language like indenter, keyword, variable, data types, operators and expression, Basic Screen and Keyboard I/O.

##### Unit-2 Control Statements, Arrays & String

- Test Condition
- Conditional execution and selection
- Iteration and Repetitive Executions
- Nested Loops
- Introduction to contiguous data types
- One dimensional arrays, multidimensional arrays
- Array as strings
- Multidimensional character arrays
- Operations on strings



### Unit-3 Function and Pointers

- Concept of modular programming
- Using functions
- Scope of data
- Recursive functions
- Command line arguments
- Need of pointer
- Types and uses of pointer
- Array and Pointers
- Pointers and strings
- Pointer to Pointer
- Pointers and functions
- other aspect of pointers.

### Unit-4 User Defined Data Types and File Handling

- Introduction to structures
- Usage of structure
- Nested structures
- Union and its usage
- Enumeration types
- Bit fields.
- Types of files
- Working with files
- Usage of file management functions.

### Unit-5 Introduction to Linked List and Other Features of C

- Introduction to dynamic memory allocation
- Singly link list
- Operations on singly link list
- Bitwise operators and its usage
- C Pre-processor statements

### ❖ Learning Resources:

Sr #	Textbook   References   Internet Links
1	Programming in C, by Pradip Dey & Manas Ghosh, Publisher – Oxford
2	C: The Complete Reference, by Herbert Schildt, Publisher – Tata McGraw Hill.
3	Let us C, by Yashwant Kanitkar, Publisher – BPB Publication
4	Schaum's Outline of Programming with C, By: Byron Gottfried, Publisher Shaum Series
5	Programming with ANSI and Turbo C, by Ashok N Kamthane, Publisher – Pearson Education

### ❖ Assignments (Optional):

Sr #	Description	Available From (Date)	Submission Date
1	Basics of C, Control Statements	After 3 Weeks	Within 10 Days
2	Functions, Pointers, User Defined Data Types	After 6 Weeks	Within 7 Days