

**Dr. Babasaheb Ambedkar Marathwada University, Aurangabad MS**  
(Faculty of Commerce & Management)  
**Master of Computer Applications**

**Bridge Course**

**Applicable from Academic Year 2020-21**

A bridge course for newly admitted students is going to conduct every year before the commencement of the first semester classes from the academic year 2020-21 onwards.

**The bridge course has designed only for those students who are having their graduations other than Computer Science and Information Technology and will admit to MCA (2 Year's) Course.**

The main objective of the course is to bridge the gap between subjects studied at Pre-university level and subjects they would be studying in **MCA**. The syllabus for the course is framed in such a way that the basic knowledge of Computer and Information Technology will support the student to learn advance subjects in this field easily.

These bridge courses for the above students so that they will get well prepared and have adequate knowledge to handle the “real” and more difficult post graduate level courses. This is what the bridge courses exactly focused on: Foundations of Computer Theory, Basics of Software Engineering and Object Oriented Programming.

**Rules and Regulations**

1. This bridge course shall be completed by the student as prescribed by university authorities.  
MCA degree shall not be awarded unless the students successfully completes the Bridge Course.
2. The bridge course will run in the beginning of commencement of MCA Classes.
3. The said bridge course is **mandatory** to the students those are having gradation other than Computer Science and IT (i.e. BA, B.Com and Equivalent prescribed as per **AICTE APH 2020-21**)
4. However, the students those are having graduation in Computer Science and IT (i.e. BCA, BSc. in Computer Science, BSc in IT or Equivalent) can attend the bridge course for betterment of MCA Course.
5. The student's performance of said bridge course will get evaluate at Institute Level after successful and mandatory attendance.
6. The successful student will get certificate based on his performance from the Institute.

## Master of Computer Applications (2 Year's)

**Subject Title** Bridge Course Paper – I

**Subject Ref. No. :** BRICO-1

**Course Objective :**

1. To acquire basic knowledge of Computer Technology to bridge the gap.
2. To learn the basic concepts of programming, software engg, networking, web technology, dbms, and algorithms.

<b>Unit – I</b>	<b>:</b>	<b>Introduction to Computer:</b> What is Computer? Basics of Computers, input and output devices (Monitor, Keyboard, Mouse, CPU, Printers etc), How to start and shutdown the computer system, Memory; Primary, Secondary, RAM, ROM, Compact Disc, Pen Drive, Hard Disk, OS Windows 10 for Beginners, Windows, OS components and the controls,	<b>05 Hrs</b>
<b>Unit – II</b>	<b>:</b>	<b>C Programming:</b> <b>Types of operators:</b> Arithmetic, Relational, Logical, Compound Assignment, Increment and decrement, Conditional or ternary, Bitwise and Comma operators. Precedence and order of evaluation. Statements and Expressions. <b>Data Concepts:</b> Variables, Constants, data types like: int, float char, double and void. Qualifiers: short and long size qualifiers, signed and unsigned qualifiers. Declaring variables, Scope of the variables according to block, Hierarchy of data types. <b>Data Input and Output functions:</b> Formatted I/O: printf(), scanf(). Character I/O format: getchar(), putchar(). <b>Iterations:</b> Control statements for decision making: (i) Branching: if statement, else... if statement, switch statement. (ii) Looping: while loop, do.. while, for loop. (iii) Jump statements: break, continue and goto. <b>Arrays:</b> (One and multidimensional), declaring array variables, initialization of arrays, accessing array elements.	<b>05 Hrs</b>
<b>Unit – III</b>	<b>:</b>	<b>Software Engineering:</b> Types of systems: Information System, System Development Life cycle, Role & Skills of system Analyst, Models: 1) Waterfall, 2) Prototyping, 3) Spiral ( including WIN-WIN Spiral) 4) RAD 5) Group Based Approach: JAD 6) Object Oriented methodology <b>HTML:</b> Introduction To HTML, WWW, W3C, web publishing, Common HTML, Tags Physical & Logical, Some basic tags like <body> , changing background color of page, text color etc., Text formatting tags, <p> , <hr> tags, Ordered & Unordered Lists Tags, Inserting image, Links: text, image links, image mapping , Tables , Frames, Form Introduction with text box, text area, buttons, List box, radio, checkbox etc. <b>CSS:</b> Introduction To Style sheet, types of style sheets- Inline, External, Embedded CSS, text formatting properties, CSS Border, margin properties, Positioning Use of classes in CSS, color properties, use of <div>&<span>	<b>05 Hrs</b>
<b>Unit – IV</b>	<b>:</b>	<b>Fundamentals of Algorithms:</b> Notion of an algorithm. Pseudo-code conventions like assignment statements and basic control structures <b>Fundamentals of Flowchart:</b> Symbols, Structure	<b>05 Hrs</b>
<b>Unit – V</b>	<b>:</b>	<b>Concept of OOP using C++/Java:</b> Procedure Oriented Programming, Object Oriented Programming (OOP), Basic Concept of OOP, Benefits of OOP.	<b>05 Hrs</b>
<b>Unit – VI</b>	<b>:</b>	<b>Introduction of Networking:</b> Data Communication, Networks, Internet, Intranet, Protocols, OSI & TCP/IP Models, Addressing. Wired LAN – LLC, MAC, Ethernet, Connecting Devices – Repeaters, Hubs, Bridges, Two & Three layer Switches, Routers, Gateways, Backbone networks. <b>Introduction of DBMS:</b> Overview of database management system, limitations of data processing environment, database approach, data independence, three level of abstraction, DBMS structure. Entity Relation Model, Relational Structure, Concurrency Control: Concept of a transaction, ACID properties,	<b>05 Hrs</b>
<b>Text Books</b>	<b>:</b>	Fundamental of Computer – P.K.Sinha Let us C by Yashwant Kanetkar, BPB. Programming in ANSI C (Third Edition) : E Balagurusamy, TMH. Software Engineering , R. Pressman, Pearson Edition Beginning HTML and CSS (English) (Paperback) by Rob Larsen Algorithms in C (Third Edition): Robert Sedgewick , Pearson Education Asia. Networking Complete by Sybex Inc. and Sybex Inc. Introduction to database Systems, C.J.Date, Longman, <i>Pearson Education</i> .	