

# Shivaji University

(Faculty of Commerce)

Implemented from Academic year 2013- 14

Bridge Course: - The bridge course for the direct MCA II year  
admitted Candidates

| Sr. No. | Subject  | Marks  |           |
|---------|--|--------|-----------|
|         |  | Theory | Practical |
| 1       | Paper I- Theory Computer Component<br>Unit-I- Computer Organization & Architecture<br>Unit-II- Software Engg<br>Unit-III-O.S.  | 100    |           |
| 2       | Paper- II- Theory Management Component<br>Unit-I- Introduction to Management Function<br>Unit-II- A/C & Financial Management<br>Unit-III-Statistical & Numerical Methods | 100    |           |
| 3       | Paper III Theory Programming Component<br>Unit-I Procedure oriented Programming<br>Unit-II- OOP with C++<br>Unit-III- VB<br>Unit-IV DFS                                  | 100    |           |
| 4       | Paper IV -Laboratory Component<br>Practical based on Paper III   |        | 100       |
|         | Total  | 300    | 100       |

Notes-

- 1) Syllabus for bridge course will be separate and it is based on Present MCA part I syllabus.
- 2) The Examination for bridge course will be conducted by University along with regular sem. examination
- 3) Practical Examination shall be conducted by University appointed examiners.
- 4) Bridge Course should be completed before award of MCA degree.
- 5) Nature of Theory question paper for bridge course as follows.

\* There shall be seven questions of 20 Marks each.

Student should attempt any five question. ( question may contain sub questions )

For practical examination 20 Marks are reserved for journal and there will be four questions which carries 20 marks each

- 6) Text books and reference books will be same as prescribed in present MCA syllabus.
- 7) The respective Institution/College shall arrange for the contact sessions (10 contact sessions per paper ) for completing the Bridge Course.

However no fees shall be charged from students for these contact sessions.

## Paper -I

### Theory Computer Component

Unit-I- Logic gate, Boolean Algebra, Map Simplification, Combination Circuits, Fli-flops, sequential Circuits, Decoders, Multiplexers, registers, Counters and Memory Unit, Control Memory, Address sequencing, CPU general register organization, Instruction formats, Addressing mode, Data transfer and manipulation & Program control.

Unit-II- SDLC, Models- Waterfall, Spiral, Prototyping, 4<sup>th</sup> Generation technique.

Software Analysis Tools & Techniques,- DFD,ERD Data Dictionary, Software design Tools & Technique, Input Design, File, Design, Output Design ,Software Configuration Management.

Unit-III - Introduction to O.S., process management, Scheduling Algorithms, Memory Management Algorithms, File system, Disk Scheduling Algorithm.

Paper – II  
Theory Management Component  
(Introduction to Management function, Accounting and financial  
Management & Statistics and numerical methods)

Unit-I- Introduction to management function: Human Resource Development – selection & training, Marketing Management- Concept, Scope and four components i.e. product, Price, Place and Promotion, Manufacturing Management :- Production System, Production Planning and Control, Strategic Planning.

Unit-II- Accounting and financial Management- Basic Accounting –Concept and conventions Format and theoretical Concepts of Trial Balance, Trading A/C & Profit and Loss A/C and Balance Sheet & Funds flow Statement.(Theory Only)

Unit-III- Statistics methods- Sampling, Population, Sample and Sample size, Methods of Sampling, Time series analysis, Hypotheses, Procedure of testing of hypothesis, Test of Significance, Chi-Square test 'Z' test and T-Test.

Paper – III  
Theory Programming

Unit-I:- POP with C++

Expressions, operator & Assignment Statement, Control Structure-Selection and iteration, Arrays and Pointers, Functions, Structures, unions & File Handling.

Unit-II:- OOP With C++

Object oriented Concepts, Classes, Objects and encapsulation, inheritance, polymorphism, Message Passing & Dynamic binding Operator overloading, pointers

Unit-III:- VB

Control-label, textbox, Command button, Frame, Drive List box, Combo box, option button, Database Controls-ADO, RDO, Functions-String, Methods –Matical, date, Data type Conversion functions.

Unit-IV:- DFS

Stack & queues, Linked Kist and tree, File Structures.

Paper IV  
Laboratory Component

- 1) Lab course is based on paper III and there should be one question on each Unit
- 2) There shall be four question based on four units The weightege for each question should be same
- 3) For lab course 80 marks will be reserved for actual practical work and 20 marks for journal
- 4) Candidate should complete five practical assignments on each unit for journal