SYLLABUS

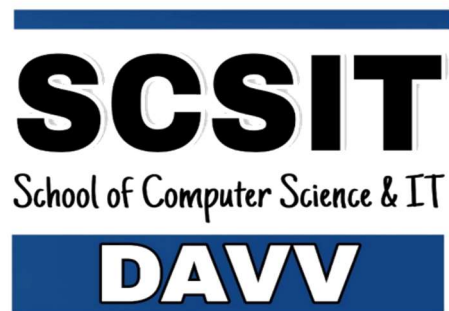## MBA (CM)

1st SEMESTER

To produce world-class professionals who have excellent analytical skills, communication skills, team building spirit and ability to work in cross cultural environment.

To produce international quality IT professionals, who can independently design, develop and implement computer applications.

Professionals who dedicate themselves to mankind, who are environment conscious, follow social norms and ethics.

School of Computer Science & IT, Devi Ahilya Vishwa Vidyalaya, Indore
www.scs.dauniv.ac.in

Course Name: **MBA (CM) 1st Semester**

Subject Code: **CS-4022**

Subject Name: **Computer Organization & Assembly Language Programming**

Aim of the Subject

This course covers the basics of computer organisation with emphasis on the lower level abstraction of a computer system including digital logic, instruction set and assembly language programming. Topics includes data representation, logic gates, simplification of logical expressions, design and analysis of simple combinational circuit such as decoders and multiplexers, flip-flops and registers, design and analysis of simple synchronous sequential circuit, random-access and read-only memories, instruction set architecture and programming in assembly language.

Learning Outcomes

The students are expected to learn following after completion of the course:

- Demonstrate computer architecture concepts related to design of modern processors,
- memories and I/Os.
- Analyze the performance of commercially available computers.
- To develop logic for assembly language programming

Unit 1

Computer Organization: Digital and Analog computers, Major components of a digital computer, Memory addressing capability of a CPU, Word length of a computer, Processing speed of a CPU, Definitions of Hardware, Software and Firmware. Definitions of Dumb, Smart and Intelligent terminals.

Binary Systems: Digital Systems, Binary Numbers, Number Base Conversions, Octal and Hexadecimal Numbers, Complements, Signed Binary Numbers, Binary Codes: BCD code, Gray Code, ASCII code, Excess 3 Code, Error detecting Code.

Unit 2

Computer Arithmetic: Binary representation of Negative Integers using 2's complement and Signed magnitude representation, Fixed point Arithmetic operations on Positive and Signed (Negative) Integers like addition, subtraction, multiplication, Booth algorithm for multiplication,. Division of positive and negative binary numbers.

Unit 3

Introduction of 8085 Microprocessor: Architecture of 8085 processor. Register Architecture: Accumulator, Temporally Register and Flag Register. Program Counter, Stack pointer and Instruction register. Addressing Modes: Direct addressing mode and Register direct Addressing Mode. Register Indirect Addressing Mode, Immediate Addressing Mode and Implicit or Implied Addressing Mode.

Unit 4

Introduction to Assembly Language Programming: Various Instructions Classifications: Instruction Format, Opcode, Operand and Hex code. Instruction Operation Status, Various Instruction Sets: Data Transfer Group Instructions, Arithmetic Group Instructions, Logical Group Instruction, Branch Group Instructions: Conditional and Unconditional and Machine control Instructions.

Unit 5

Assembly language programming: Practice on assembly language programming, pinout diagram of 8085 microprocessor, interfacing of 8085, interrupts, Direct memory access, introduction to 8086 microprocessor.

Text Book(s)

1. Ramesh S. Gaonkar, Microprocessor Architecture, Programming and Applications with 8085/8080. Wiley Eastern Ltd. publication

2. B Ram, Computer Fundamentals: Architecture and Organization, New Age International, 2000

3. V. Rajaraman V and N. Adabala, Fundamentals of Computers, Prentice Hall India Learning Private Limited; 6th Revised edition edition

Reference Material(s)

1. R Theagarajan S Dhanasekaran and S Dhanapal, Microprocessor and Its applications, New Age International (P) Ltd.

2. Nicholas Carter and Raj Kamal, Computer Architecture and Organization, Schaum's Outlines Series

3. Dr. Raj kamal, Digital Systems: Princ

Course Name: **MBA (CM) 1st Semester**

Subject Code: **CS-4223**

Subject Name: **Programming and Problem-Solving Using Java**

Aim of the Subject

To give students a good understanding of basic concepts of object-oriented program design using JAVA. To teach and enable students to develop object-oriented programming skills within the Java language; to enable students to develop object- oriented programs through real life examples.

Learning Outcomes

The students are expected to learn following after completion of the course:

- Understand basic principles of object-oriented program design using
- Java.
- Understand the basic and some advanced issues related to writing
- classes and methods such as data, visibility, scope, method parameters, object references, and nested classes.
- Understand the basic ideas behind class hierarchies, polymorphism,
- and programming to interfaces.
- Get exposure to exceptions and basic I/O streams.
- Develop solid Java programming skills and the ability to put in practice the acquired knowledge and understanding of the Java language and objectoriented
- design.

Unit 1

Introduction to Java: Features of Java, Object-oriented programming overview, Introduction of Java

Technologies, How to write simple Java programs, Data Types, Variables, Memory concepts, decision

making operators, Naming Conventions, Introduction to Class, Objects, Methods and Instance Variables,

Primitive type Vs Reference Type, Initializing Objects with Constructors. Type conversion & casting,

Operators, Control Statements, break and continue Statements. Static Method, static field and Method

Overloading.

Unit 2

String Handling: The String constructors, String operators, Character Exaction, String comparison, String

Buffer. Arrays: Enhanced for Statement, Passing Arrays to Method, Multidimensional Arrays, Variable

Length Argument lists, Using Command-line Arguments. Final Instance Variables, this reference, static

import, overloaded Constructors, Garbage collection and method finalize, Overloading methods,

Parameter passing.

Unit 3

Inheritance: Relationship between Super classes and Subclasses, Using super, Constructor in Subclasses,

The Object Class, Object Copying in Java. Polymorphism: Method overriding, upcasting, Dynamic

Method Dispatch, final Method and classes, Abstract classes and Methods, instanceof operator,

Downcasting, Class class, Runtime type Identification

Unit 4

Packages and Interfaces: Defining a Package, Understanding CLASSPATH, Access Protection, Importing

packages, creating own packages. Defining an Interface, Properties of interface, advantages of interface

Unit 5

Exception Handling: Introduction, overview of doing it and keywords used, when to use it, Java

Exception Hierarchy, finally block.

Text Book(s)

1. Java 2: The Complete Reference by Herbert Schildt, Tata McGraw- Hill, 8th Edition, 2011.

Reference Material(s)

1. The Java Programming Language, Ken Arnold , James Gosling , David Holmes, 3rd Edition, Person

Education, 2000.

2. Head First Java, Kathy Sierra, Bert Bates, O'Reilly Publication, 2nd Edition,2005

Course Name: **MBA (CM) 1st Semester**

Subject Code: **CS-5511**

Subject Name: **Operating Systems**

Aim of the Subject

General understanding of structure of modern computers purpose, structure and functions of operating systems, illustration of key OS aspects by example

Learning Outcomes

The students are expected to learn following after completion of the course:

- By the end of the course student should be able to describe the general
- architecture of computers describe, contrast and compare differing
- structures for operating systems understand and analyze theory and
- implementation of:

Unit 1

Introduction: Evolution of operating systems, operating system concepts; activities, functions and services of operating system; Computer Systems: Mainframe, Desktop, Multiprocessors, Distributed, Clustered, Real time and Hand held systems. Compu ter Sys tem Opera tions, Storage hierarchy, Hardware pro tec tion, System calls, System structures. Process Management: Process concepts, Process scheduling, Operation on processes.

Unit 2

Cooperating processes, Inter-process communication. Threads: multithreading models, threading issues, thread examples. CPU Scheduling: concepts, scheduling criteria, scheduling algorithms, algorithm evaluation. Process synchronization: Critical section problem, Mutual exclusion and synchronization Techniques of inter process: Synchronization hardware, semaphore, classical problems of synchroniza tion, cri tical regions and moni tors. Deadlock: deadlock characterization, deadlock handling methods.

Unit 3

Memory Management: Concepts, single user memory management. Partition memory allocation: paging, segmentation and segmentation with paging, Virtual memory management: concept, demand paging, process creation, page replacement, allocation of frames and thrashing.

Unit 4

File Management: File concepts, access methods, directory structure, file system mounting, sharing and protection of files. File system structure and implementation, allocation methods, free space management, reliability of file system. Unix file system.

Unit 5

Device Management: Goals of input/output software design, Structure of device hardware and software. Layers of I/O software, structure of device drivers, Disk driver, disk arm scheduling algorithms, terminal driver, clock driver etc.

Text Book(s)

1. A. Silberschatz, P. Galvin and Gagne, Operating System Concepts, Addison Wesley, 6th Edition, 1994.

Reference Material(s)

1. Operating systems, 4rth Edition, William Stallings, Pearson Education, 2003.

Course Name: **MBA (CM) 1st Semester**

Subject Code: **CS-4601**

Subject Name: **Web Designing**

Aim of the Subject

Learning Outcomes

The students are expected to learn following after completion of the course:
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Unit 1

Unit 2

Unit 3

Unit 4

Unit 5

Text Book(s)

Reference Material(s)

Course Name: **MBA (CM) 1st Semester**

Subject Code: **IC-4916**

Subject Name: **Communication Skills and Report Writing**

Aim of the Subject

To improve the confidence, communication skills and presentation capabilities of students that will help them in placements and corporate life.

Learning Outcomes

The students are expected to learn following after completion of the course:

- Improved skills in personal interviews and group discussions
- Development of power of expression
- Improved Writing Skills
- Improved Presentation Skills

Unit 1

Fundamentals of Communication :

Definitions, Importance, Forms of communication, Process of communication, Channels, Barriers and Strategies to overcome barriers of communication

Unit 2

Listening:

Definitions, Importance, Benefits, Barriers, Approaches, Exercise and cases.

Group Discussions :

Definitions, Importance, Process, Points to be borne in mind while participating, Do's and Don'ts.

Unit 3

Presentation Skills :

Do's and Don'ts.

Interviews:

Types of Interviews, Points to be borne in mind as an Interviewer or an

Interviewee. Commonly asked questions. Do's and Don'ts.

Unit 4

Transactional Analysis, Johari Window.

Written Communication:

Report Writing, Business Correspondence, Preparation of Manuals and Project Report, Minutes of meeting, Notes and Circulars.

Unit 5

Intense practice of Presentations, Group Discussions and Interviews.

Text Book(s)

1. Communication – K. K. Sinha

2. Organizational Behavior - Fred Luthans

3. Organizational Behavior - Stephen Robbins

Reference Material(s)

1. Communications Skills – M.V. Rodrigues

2. Business Communication - Lesikar and Flately