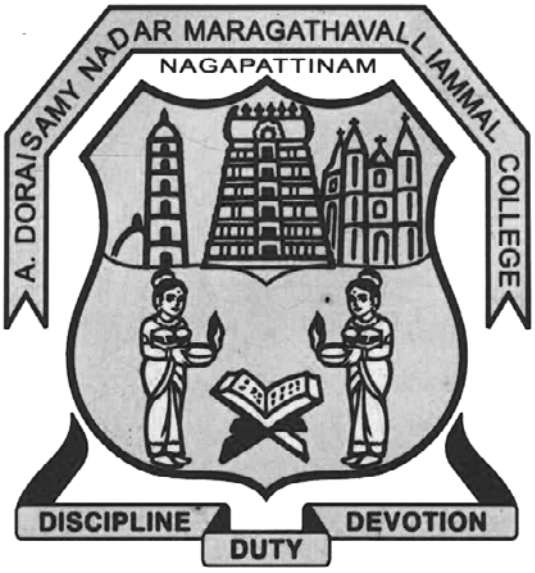
DEPARTMENT OF INFORMATION TECHNOLOGY U.G. PROGRAMME

SYLLABUS

2016 – 2019 BATCH

V SEMESTER



A. D. M. COLLEGE FOR WOMEN

NAGAPATTINAM

SEMESTER V

CORE COURSE X

COMPUTER NETWORKS

Internal Marks : 25	**Instruction Hrs : 6**
External Marks : 75	**Credit : 6**
Total Marks : 100	**Exam Hrs : 3**

Objectives:

To learn the concepts of data communication technologies and computer networks. To understand the security aspects in computer networks.

UNIT I

Introduction: Data Communications – Components-Networks - Protocol and Standards – **Basic Concept:** Line Configuration – Topology – Transmission mode – Categories of Networks – The OSI model: The model – Function of the Layers.

UNIT II

Signals: Analog and Digital – Periodic and Non Periodic signals – Composite Signals - Digital Signals – Transmission of Digital Data: Digital Data Transmission – DTE – DCE Interface – MODEMS – **Transmission Media:** Guided Media – Multiplexing: FDM, WDM, TDM – Multiplexing Applications.

UNIT III

Error Detection and Correction: Types of Errors – Types of Redundancy Check – Error Correction – Data Link Control: Line Discipline – Flow control – Error control – **Data link protocols:** Asynchronous protocols – Synchronous protocols – Character Oriented Protocol – Bit Oriented Protocol.

UNIT IV

Switching: Circuit switching – Packet switching – Message switching – **Network and Interface Devices:** Repeaters – Bridges – Routers – Gateway – other devices – Routing Algorithms – Distance Vector Algorithm – Link state Algorithms. **Transport layer:** Duties of the transport layer – Connection – OSI transport Protocol.

UNIT V

LAN: Ethernet Technologies - Wireless LAN – Applications - Requirements – Planning –Arcchitecture-IEEE802.11 – WAP Services – Network Management – Goal of Network Management-Standards-Network Management Model - Simple Network Management Protocol.

Text Book

Behrouz A.Forouzan, Data Communications and Networking, Tata McGraw Hill, Second Edition.

SEMESTER V

CORE COURSE XI

OPERATING SYSTEMS

Internal Marks : 25 **Instruction Hrs : 6**

External Marks : 75 **Credit : 6**

Total Marks : 100 **Exam Hrs : 3**

Objectives

To provide fundamental concepts of all managements in an operating system.

UNIT I

Operating System Introduction Basic Concepts and Terminology An OS Resource Manager OS process view point OS hierarchical and extended machine view Memory Management: Single Contiguous Allocation Introduction to Multiprogramming.

UNIT II

Memory Management: Relocatable Partitioned Memory Management Paged Memory Management Demand Memory Management Segmented Memory Management Segmented and Demand-Paged Memory Management Swapping and Overlays.

UNIT III

Job and Processor scheduling: Process Control Block Scheduling Policies Scheduling Algorithms : In non multiprogramming environment In multiprogramming environment.

UNIT IV

Process Synchronization: Race Conditions Hardware solution to mutual exclusion problem, Test and set instruction Wait and signal mechanism semaphores, Dead Lock conditions Prevention Banker' s Algorithm Detection and Recovery.

UNIT V

Device Management: I/O Devices Device Management Functions Serial and direct access storage devices Disk Scheduling File Management: Functions file organization allocation methods.

TEXT BOOKS

1. Operating System by Stuart E Madnick and John Donovan, Tata McGraw Hill.
2. Fundamentals of Operating System by Prof. R Sridhar, Dynaram Pub. Bangalore.

REFERENCE BOOK

1. **Operating System (Concepts and Design)** Milan Milenkovic McGraw Hill International Edition

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SEMESTER V

CORE COURSE XII

RDBMS LAB

Internal Marks : 40 **Instruction Hrs : 6**

External Marks : 60 **Credit : 6**

Total Marks : 100 **Exam Hrs : 3**

1. SQL - Data Definition Language
   - Table creation
   - Table altering
   - Drop table
2. SQL - Data Manipulation Language
   - Data insertion
   - Built-in functions
   - Set operations
   - Join operation
   - Nested Sub queries
   - Views
3. PL/SQL Procedure
   - Cursor
   - Procedure
   - Functions
   - Triggers

SEMESTER V

MAJOR BASED ELECTIVE COURSE (MBE) – I

DATABASE SYSTEMS

Internal Marks : 25 **Instruction Hrs : 6**

External Marks : 75 **Credit : 4**

Total Marks : 100 **Exam Hrs : 3**

Objective

To provide the basic concepts of the Database Systems including Data Models, Storage Structure, Normalization and SQL .

UNIT I

Introduction: Database-System Applications- Purpose of Database Systems - View of Data --Database Languages - Relational Databases - Database Design -Object-Based and Semi structured Databases - Data Storage and Querying Transaction Management -Data Mining and Analysis - Database Architecture - Database Users and Administrators - History of Database Systems.

UNIT II

Relational Model: Structure of Relational Databases - Fundamental Relational-Algebra Operations Additional Relational-Algebra Operations- Extended Relational-Algebra Operations - Null Values - Modification of the Database.

UNIT III

SQL: Data Definition - Basic Structure of SQL Queries - Set Operations- Aggregate Functions - Null Values- Nested Subqueries - Complex Queries - Views - Modification of the Database - Joined Relations - SQL Data Types and Schemas - Integrity Constraints -Authorization - Embedded SQL

UNIT IV

Relational Languages: The Tuple Relational Calculus - The Domain Relational Calculus - Query-by- Example. Database Design and the E-R Model: Overview of the Design Process - The Entity-Relationship Model - 3 Constraints - Entity-Relationship Diagrams - Entity-Relationship Design Issues - Weak Entity Sets - Database Design for Banking Enterprise.

UNIT V

Relational Database Design: Features of Good Relational Designs - Atomic Domains and First Normal Form - Decomposition Using Functional Dependencies - Functional-Dependency Theory - Decomposition Using Functional Dependencies - Decomposition Using Multivalued Dependencies-More Normal Forms - Database-Design Process.

Text Book

Database System Concepts, Sixth edition, Abraham Silberschatz , Henry F. Korth, S. Sudarshan, McGraw-Hill-2010.

Reference Book

Database Systems: Models, Languages, Design and Application, Ramez Elmasri, Pearson Education 2014 .

SEMESTER V

SKILL BASED ELECTIVE II

MOBILE COMPUTING

Internal Marks : 25 **Instruction Hrs : 2**

External Marks : 75 **Credit : 2**

Total Marks : 100 **Exam Hrs : 3**

Objective

To understand the Architectures, Sychronization Process and Operating Systems in Mobile Computing.

UNIT I

Mobile Communications - An Overview : Mobile Computing - Mobile Computing Architecture - Mobile Devices - Mobile System Networks - Data Dissemination - Mobility Management – Security.

UNIT II

Mobile Devices and Systems : Mobile Phones - Digital Music Players - Handheld Pocket Computers - Handheld Devices with Operating Systems - Smart Systems - Limitations of Mobile Devices - Automotive Systems.

UNIT III

GSM and Similar Architectures : GSM Services and System Architecture - Radio Interfaces - Protocols - Localization - Calling - Handover - Security - New Data Devices - General Packet Radio Service - High Speed Circuit Switched Data.

UNIT IV

Data Synchronization in Mobile Computing Systems : Synchronization - Synchronization Software for Mobile Devices - Synchronization Protocols - Mobile Devices Server and Management : Mobile Agent - Application Server - Gateways - Portals - Service Discovery - Device Management - Mobile File Systems – Security.

UNIT V

Mobile Operating Systems :Operating System-Palm OS-Windows CE-Symbian OS-Linux for Mobile Devices

Text Book

Mobile Computing, Rajkamal, Oxford University Press, 2011.

Reference Book

Mobile Computing, KumkumGarg, Pearson Education, 2010.

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SEMESTER V

SKILL BASED ELECTIVE III

ANDROID PROGRAMMING LAB

Internal Marks : 40	**Instruction Hrs : 2**
External Marks : 60	**Credit : 2**
Total Marks : 100	**Exam Hrs : 3**

1. Different Layout design including nested layout for a single biodata.
2. Arithmetic Operation for two numbers
3. Business Calculator
4. Animation: Bouncing of a ball
5. Intent
6. Database SQLite: Student Biodata
7. Fragments - Tablet Programming
8. Media Player
9. Repeated Alarm
10. Google Maps

SSD

V Semester
PART – IV
SOFT SKILL DEVELOPMENT

Internal Marks : 25 | Instruction Hrs : 2
External Marks : 75 | Credit : 2
Total Marks : 100 | Exam Hrs : 3

Objective : To impart knowledge Self development through inter personal relation, Communication and self presentation.

UNIT I : Know Thyself / Understanding Self

Introduction to Self Skills – Self discovery – Developing positive attitude - Improving perception – Forming values. **6 Hrs.**

UNIT II : Interpersonal Skills \ Working with Others

Developing interpersonal relationship – Team building – group dynamics - Net working – improving work relationship. **6 Hrs.**

UNIT III : Communication Skills \ Working with Others

Art of listening – Art of reading – Art of Speaking – Art of Writing – Art of Writing E – mails –E mail etiquette. **6 Hrs.**

UNIT IV : Corporate Skills \ Working with Others

Developing body language – Practising etiquette and mannerism – Time Management – Stress Management. **6 Hrs.**

UNIT V : Selling Self\ Job Hunting

Writing resume\cv – interview skills – discussed – Mock interview – Mock GD – Goal setting – Career planning. **6 Hrs.**

(Theory only)

Text Book

Dr.K.Meena & Dr.V.Ayothi - A book on development of Soft Skills.

Dr.K.Alex - Soft Skills. S.Chand & Company Ltd. Ram Nagar, New Delhi -110055

Books for Reference

1. Developing the leader within you John C Maxwell
2. Good to Grent by jim Collins
3. The seven habit of highly effective people Stephen Covey
4. Emotional Intelligence Daniel Goleman
5. You can win shive Khera
6. Principal centred leadership Stephen