



**Department of Information Technology**  
**Academic Year: 2023-24**

ACE/INFT/FR/21/23-24

<b>Title</b>	DLO-ILO Orientation TE & BE Information Technology
<b>Faculty</b>	Prof. Charmi Chaniyara, Prof. Pranoti Nage
<b>Date</b>	23/4/24
<b>Time</b>	11:00 AM
<b>Department</b>	Information Technology
<b>Venue</b>	ONLINE
<b>Target Audience</b>	TE, BE 2024-25 Students

The Department of Information Technology has conducted an orientation on DLO and ILO subjects for the upcoming TE and BE batch students.

1. In orientation, all the DLOs and ILOs were listed and explained about all of them.

TE DLO1

- Advanced Data Structure & Analysis
- Advanced Database Management Technology
- Computer Graphics & Multimedia Systems
- Microcontroller Embedded Programming

BE DLO3

- Storage Area Network
- High Performance computing]
- Infrastructure Security
- Software Testing and QA



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BE DLO4

- MANET
  - AR – VR
  - Quantum Computing
  - Information Retrieval System
2. Importance of DLOs and ILOs with their applications were discussed.
  3. Exam schemes of all subjects were discussed.

**Photographs of the DLO orientation session:**





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6.12.TE-Information\_Technology\_Sem.-V.W11-3-113.pdf

Sr. No.	Module	Detailed Content	Hours	CO Mapping
0	Prerequisite	Revision of microcomputer system terminologies, High level, difference between microprocessor and microcontroller, basics of operating Systems.	02	---
I	Introduction to Embedded systems	Overview of Embedded System Architecture, Application areas, Categories of embedded systems, specialties of embedded systems. Recent trends in embedded systems. Brief introduction to embedded microcontroller cores CISC, RISC, ARM, DSP and SoC. Introduction to Embedded System Integrated Development Environments (IDEs) with examples. <b>Self-learning Topics:</b> Comparison of CISC & RISC. Case studies of Real Time Embedded Systems.	04	CO1
II	The Microcontroller Architecture and Programming of 8051	Introduction to 8051 Microcontroller, Architecture, Pin configuration, Memory Organization, Input/Output Ports, Counter and Timers, Serial communication, Interrupts, Addressing modes, Instruction set. 8051 developing tools, Programming based on Arithmetic & Logical Operations, I/O parallel and serial ports, Timers & Counters, and I2C. <b>Self-learning Topics:</b> Writing 8051 programming in Embedded C. Interfacing 8051 with peripherals: ADC, DAC, stepper motor.	10	CO2
III	Interfacing with 8051 Microcontroller	Interfacing 8051 with LED, LCD, keyboard, Temp sensor, etc. using assembly language.	04	CO3

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PC mode

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6.12.TE-Information\_Technology\_Sem.-V.W11-3-113.pdf

Sr. No.	Module	Detailed Content	Hours	CO Mapping
0	Prerequisite	Reviewing basic concepts of a Relational database, SQL concepts. Overview: Introduction, Query processing in DBMS, Steps of Query Processing, Measures of Query Cost Selection Operation, Sorting, Join Operation, Evaluation of Expression. Query Optimization: Overview, Goals of Query Optimization, Approaches of Query Optimization, Transformations of Relational Expressions, Estimating Statistics of Expression Results Choice of Evaluation Plans. <b>Self-learning Topics:</b> Solve problems on query optimization.	02	---
I	Query Processing and Optimization	<b>Advanced Database Access protocols:</b> Discretionary Access Control Based on Granting and Revoking Privileges, Mandatory Access Control and Role-Based Access Control, Remote Database access protocol. Overview of Advanced Database Models like Mobile databases, Temporal databases, Spatial databases. <b>Self-learning Topics:</b> Learn Data Security concepts like Authentication, Authorization and encryption.	06	CO1
II	Advanced Data Management Techniques	Introduction: Distributed Data Processing, Distributed Database System: Architecture, Types, Design Issues, Data Fragmentation, Allocation in distributed databases. <b>Self-learning Topics:</b> Query Optimization in Distributed Database.	06	CO2
III	Distributed Databases	The Need for Data Warehousing: Data Warehouse Definition, In data warehouse still relevant in the age of Big data, Features of a Data Warehouse: Data Warehouse Architecture: Enterprise or centralized, federated and multi-tened architectures, Data Warehouse and Data Mart, Data Warehousing Design Strategies, Data modeling: Dimensional Model, The Star Schema, How Does a Query Execute? The Snowflake Schema, Fact Tables and Dimension Tables, Factless Fact Table, Updates To Dimension Tables, Primary Keys, Surrogate Keys & Foreign Keys.	04	CO3
IV	Data Warehousing Dimensional Modelling and OLAP		09	CO4

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PC mode

Management Information System

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**MANAGEMENT INFORMATION SYSTEM (ILO7013)**

By, Prof. Pranoti Nage, INFT Dept, Malad

*Management Information System*

Pranoti Nage



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6.12-TE-Information\_Technology\_Sem.-V-VIS-3-113.pdf

Sr. No.	Module	Detailed Content	Hours	CO Mapping
0	Prerequisite	Basic of Data structures and analysis and programming language.	02	-
I	Introduction	Fundamentals of the analysis of algorithms: Time and Space complexity, Asymptotic analysis and notation, average and worst-case analysis, Recurrences: The substitution method, Recursive tree method, Masters method. <b>Self-Learning Topics:</b> Analysis of Time and space complexity of iterative and recursive algorithms	04	CO1
II	Advanced Data Structures	B/B+ tree, Red-Black Trees, Heap operations, Implementation of priority queue using heap, Topological Sort. <b>Self-Learning Topics:</b> Implementation of Red-Black Tree and Heaps.	05	CO2
III	Divide and Conquer AND Greedy algorithms	Introduction to Divide and conquer, Analysis of Binary Search, Merge sort and Quick sort, Finding minimum and maximum algorithm. <b>Self-Learning Topics:</b> Implementation of minimum and maximum algorithm, Knapsack problem, Job sequencing using deadlines.	08	CO3
IV	Dynamic algorithms	Introduction to Dynamic Algorithms, all pair shortest path, 0/1 knapsack, travelling salesman problem, Matrix Chain Multiplication, Optimal binary search tree, Analysis of All algorithms and problem solving. <b>Self-Learning Topics:</b> Implementation of All algorithms	06	CO4

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Advances in Retinal L... Table 1 Summarizat...

Ulhaskumar Gokhale

11:05 AM | uos-whhf-bxh



Dr. Ulhaskumar Gokhale  
(H.O.D. IT)

Dr. Ramesh Kulkarni  
(Principal, ACE)