

**Department of Information Technology**  
**Lesson Plan**  
**Basic of Communication (ES-IT-202A)**  
**Class : B.Tech. 4th Sem.**

<b>Lecture No.</b>	<b>Topics Name</b>
L1	UNIT-1: Introduction: What is communication,
L2	Elements of communication system
L3	Classification of signal
L4	Noise, Classification of noise, Types of Internal Noise
L5	Types of External Noise
L6	Classification of electronic communication system
L7	Types of communication channels
L8	Electromagnetic spectrum for communication
L9	Concept of bandwidth, sources of signal
L10	Gain attenuation and Decibels of a system, Limitations of communication system
L11	UNIT-2: Signal Modulation : What is modulation, Need for modulation
L12	Amplitude Modulation : Mathematical Expression
L13	Power and current relation in AM
L14	Concept of Modulation index
L15	Generation of AM using collector modulation method
L16	Frequency Modulation: Mathematical derivation
L17	Modulation index in FM
L18	Narrowband FM and wideband FM
L19	Generation of FM using Armstrong method
L20	Direct FM method, Comparison of AM and FM.
L21	UNIT-3: Radio receiver: AM demodulator using diode detector
L22	FM demodulation using slope detector method
L23	Tuned frequency receiver,
L24	Superheterodyne receiver
L25	RF amplifier; IF amplifier
L26	Concept of Image frequency;
L27	Double spotting, Superheterodyne tracking
L28	UNIT-4: Basic fiber optic system, Advantages and disadvantages of optical fibers
L29	Classification of optical fiber, construction of fiber cable
L30	Numerical aperture, losses in fiber optic system
L31	Major requirements for optical fiber emitter
L32	Advantages of LED as a source
L33	Performance Requirements of detectors
L34	Revision / Old University Papers Discussions
L35	Revision / Old University Papers Discussions

**Department of Information Technology**  
**Lesson Plan**  
**Data Base Management Systems (PC - IT-210A)**  
**Class : B.Tech. 4th Sem.**

Lecture No.	Topic
<b>Unit-I</b>	
1	Overview of database Management System; characteristics of database,
2	database users, Advantages of DBMS over file processing systems, Responsibility of Database Administrator
3	Components of DBMS
4	Introduction to Database Languages
5	Three schema architecture, Introduction to Client/Server architecture.
6	ER Modeling - Basic concepts, mapping Constraints, Keys,
7	Design of E-R Diagram
8	Practice on Design of E-R Diagram
9	Reduction of E-R diagram into tables, Advanced ER Diagrams
<b>UNIT-II</b>	
10	Introduction to Network data model, Hierarchical data model, Relational data model, Respective Advantages and Disadvantages.
11	Relational Model in detail
12	Relational constraints- Domain Constraint, Key Constraint, Integrity Constraints.
13	Join Operation
14	Division and Aggregate Operation
15	Practice on Relational Algebra
16	Practice on Relational Algebra
17	Structured query language
18	Practice on Structured query language
19	Practice on Structured query language
20	Introduction to views, creating, modifying and deleting views.
<b>UNIT-III</b>	
21	Introduction to functional dependency, Inference rules, minimal cover Closure
22	Types of keys, desirable properties of decompositions,
23	Normalization
24	Normalization
25	Normalization
26	Normalization - Examples
27	Denormalization
28	Denormalization
29	Revision on Normalization and Denormalization with examples
<b>UNIT-IV</b>	
30	Transactions, Concurrency Management and recovery
31	Practice on transactions
32	Transactions, desirable properties, Concurrent Transactions
33	Serializable and non-serializable Schedules
34	Conflict Serializability
35	Practice on Serializable Schedules
36	Locks, Two Phase Locking (2PL),
37	Timestamp based protocols
38	Deadlock and its Prevention
39	Recovery, Kinds of failures,
40	Failure controlling methods (Log base recovery, shadow copy scheme, checkpoints)

**Department of Information Technology**  
**Lesson Plan**  
**Discrete Structure (PC-IT-204 A)**  
**Class : B.Tech. 4th Sem.**

Lecture No.	Topics Name
1	<b>UNIT- I-</b> fundamentals of sets and subsets
2	Operation on sets, Venn diagrams
3	Laws of set theory
4	Principle of inclusion and exclusion
5	Logic, Propositions
6	Truth tables
7	Equivalence and implication laws
8	Normal form, predicates and quantifiers
9	Principle of mathematical induction
10	Product sets and partitions
11	<b>UNIT-II-</b> Relations and digraphs
12	Path in relations and digraphs
13	Properties of relations
14	Equivalence and partially ordered relations
15	Computer representation and manipulations of relation and digraphs.
16	Transitive closure and Warshell algorithm
17	Posets
18	Hase diagram
19	lattices
20	<b>UNIT-III</b> – Basics of function
21	Types of functions
22	Composition of functions, Identity and inverse
23	Pigeon hole principle and principle of inclusion excusion
24	Premutation functions
25	<a href="https://youtu.be/oaOm2pnKkyY">https://youtu.be/oaOm2pnKkyY</a>
26	Generationg functions
27	Recurrence relations
28	Recurrence relations
29	<b>UNIT-IV</b> – Algebraic structure with one binary operation
30	Groups, semi groups and monoids
31	Product and quotient of algebraic structures
32	Isomorphism, homomorphism, automorphism
33	Cyclic groups
34	Normal subgroups
35	Ring homomorphism and isomorphism
36	Codes and group codes

## Department of Information Technology

### Lesson Plan

### Environmental studies (MC-901A)

### Class : B.Tech. 4th Sem.

Lecture No.	Topics Name
L1	Multidisciplinary nature of environmental studies
L2	Definition, scope and importance
L3	Need for public awareness
L4	Renewable and Non renewable resources
L5	forest resources
L6	Dams and their effects
L7	Water resources, Effects of Ground Water
L8	Mineral resources, uses and Exploitation of Minerals
L9	Effects of mining
L10	Food resources, world food Problems
L11	Effects of modern agriculture
L12	Case studies
L13	land resources-Land degradation, Land Slides
L14	Soil Erosion, desertification
L15	Energy resources- Solar Energy
L16	Wind Energy, Hydropower, Tidal Energy, Geothermal Energy
L17	Biomass Energy, Fossil Fuels-Coal
L18	Petroleum, Natural Gas
L19	Role of individual in conservation of natural resources
L20	<b>Unit-2</b>
L21	Ecosystem
L22	Structure of an ecosystem
L23	Function of an ecosystem
L24	Energy flow in an ecosystem
L25	Ecological succession
L26	Ecological pyramids
L27	Forest ecosystem, grassland ecosystem
L28	Desert ecosystem, aquatic ecosystem
L29	<b>Unit -3</b>
L30	Biodiversity and its conservation
L31	Genetic , species and ecosystem diversity
L32	Biogeographical classification of india
L33	Value of biodiversity
L34	Biodiversity at different levels
L35	Hotspots of biodiversity
L36	Threats to biodiversity
L37	Conservation of biodiversity
L38	Air Pollution

L39	Water Pollution
L40	Soil Pollution
L41	Marine Pollution
L42	Solid Waste Management
L43	Disaster Management
L44	<b>Unit-4</b>
L45	Social issues and environment
L46	Depletion)
L47	wasteland reclamation
L48	consumerism
L49	Environmental ethics- issues and possible solutions
L50	Environmental laws
L51	environment

**Department of Information Technology**  
**Lesson Plan**  
**Microprocessor Interfacing & Application (PC-IT-208A)**  
**Class : B.Tech. 4th Sem.**

<b>Lecture No.</b>	<b>Topics Name</b>
L1	Introduction to subject, Introduction to Microprocessors, Evolution of Microprocessor
L2	UNIT 1: 8085 CPU Architecture: Introduction to 8085 – 8085 Architecture.
L3	8085 Architecture
L4	Pin Details
L5	Register organization, Memory organization
L6	Flags, stack
L7	Timing and control unit
L8	Instruction cycle, machine cycle
L9	Timing diagram for Fetch and Memory read / write
L10	Timing diagram for Fetch and I/O read / write
L11	Revision
L12	UNIT-2: Instruction and data formats
L13	Instruction Set of 8085
L14	Instruction Set of 8085
L15	Addressing modes of 8085
L16	introduction to Assembly Language Programming
L17	Programs
L18	Stacks and Subroutines; counter and time delay
L19	Revision
L20	UNIT-3: Basic interfacing concept
L21	Interfacing output displays
L22	Interfacing input devices
L23	Memory Mapped I/O
L24	Interrupt structure of 8085
L25	Revision
L26	UNIT-4: Programmable Peripheral Interface (8255) Pin discription
L27	PPI block diagram
L28	DMA controller (8237)
L29	DMA controller (8237)
L30	Programmable keyboard / Display interface (8279)
L31	Programmable keyboard / Display interface (8279)
L32	Interfacing of LCD
L33	matrix keyboard
L34	Introduction to Microprocessor Controlled Temperature System (MCTS)
L35	Revision
L36	Revision

**Department of Information Technology**  
**Lesson Plan**  
**Operating Systems (PC-IT-206A)**  
**Class : B.Tech. 4th Sem.**

Lecture No.	Topics Name
L1	UNIT-1: Introductory Concepts: Operating System functions and characteristics
L2	historical evolution of operating systems
L3	Real time systems, Distributed systems
L4	Methodologies for implementation of O/S service , system calls
L5	system programs , interrupt mechanisms
L6	Processes: Processes model, process states
L7	process hierarchies, implementation of processes
L8	data structures used such as process table, PCB creation of processes
L9	context switching, exit of processes
L10	Process scheduling: objective, preemptive Vs non- preemptive scheduling
L11	comparative assessment of different algorithms such as round robin, priority bases scheduling, FCFS, SJF, multiple queues with feedback.
L12	UNIT-2: Interprocess communication: Race conditions, critical sections
L13	problems of mutual exclusion, Peterson's solution
L14	producer-consumer problem
L15	semaphores, counters, monitors
L16	message passing; Deadlocks:conditions
L17	modeling, detection, recovery
L18	avoidance, deadlock prevention
L19	UNIT-3: Memory Management: Multiprogramming with fixed partition
L20	variable partitions, virtual partitions
L21	virtual memory, paging, demand paging design and implementation issues in paging such as page tables
L22	page replacement algorithms, page fault handling
L23	page replacement algorithms (Contd..), working set model, local vs global allocation, page size
L24	inverted page tables, segmentation and paging.
L25	UNIT-4: File Systems: File type, attributes, access and security
L26	file operations, directory structures, path names, directory operations
L27	implementation of file systems, implementation of file and file operations calls, implementation of directories, sharing of files
L28	disk space management, block allocation, free space management, logical file system, physical file system
L29	Distributed Systems: Introduction to II/W and S/W concepts in distributed systems
L30	Network operating systems and NFS
L31	NFS architecture and protocol, client- server model
L32	distributed file systems, RPC- Basic operations
L33	parameter passing, RPC semantics
L34	Revision / Old University Papers Discussions
L35	Revision / Old University Papers Discussions