Lesson Plan

Name of the Faculty:	**Er. Rajiv Bansal/ Dr. Monika/ Er. Seema**
Discipline:	**B.Tech(CSE)**
Semester:	**4th**
Subject:	**Design and Analysis of Algorithms(PC-CS-208A)**
Work Load (Lecture/Practical) per week (In hours):	**Lecture-3**

S.No	**Lecture No.**	**Theory**	
		Topic(Including Assignment/Test/Quiz)	**Pedagogy (PPT/Chalk and Board/Video Recording /Activity/Case Study)**
1.	L1	Introduction to Elementary Data Structures:Stack,Queue, LinkedList,Tree ,Graph	Chalk and Board
2.	L2	Algorithms & its complexity(Time & Space), Analysing Algorithms	Chalk and Board
3.	L3	Asymptotic Notations	Chalk and Board
4.	L4	Priority Queue, Quick Sort	Chalk and Board
5.	L5	Merge sort.	Chalk and Board
6.	L6	Methods for solving recurrence(Substitution , Recursion tree)	Chalk and Board
7.	L7	Master theorem, Strassen's multiplication	Chalk and Board
8.		**Assignment**	
9.	L8	Dynamic programming: Elements, Matrix-chain multiplication	PPT/ Chalk and Board
10.	L9	Longest common subsequence	PPT/ Chalk and Board
11.		**Test**	
12.	L10	Greedy algorithms: Elements , Activity- Selection problem	PPT/ Chalk and Board
13.	L11	Binomial heaps, Fibonacci heaps,	PPT/ Chalk and Board
14.	L12	Splay Trees	Chalk and Board
15.	L13	Red-Black Trees	Chalk and Board
16.	L14	Review of graph algorithms	PPT/ Chalk and Board
17.	L15	Traversal Methods(Depth first & Breadth first search),	PPT/ Chalk and Board
18.	L16	Topological sort,	PPT/ Chalk and Board
19.	L17	Strongly connected components	PPT/ Chalk and Board
20.	L18	Kruskal's Algorithm	PPT/ Chalk and Board
21.	L19	Prim's Algorithm	PPT/ Chalk and Board
22.	L20	Single source shortest paths, Relaxation,	PPT/ Chalk and Board

23.		**Assignment**	
24.	L21	Dijkstra's Algorithm	PPT/ Chalk and Board
25.	L22	Bellman- Ford algorithm,	PPT/ Chalk and Board
26.	L23	Single source shortest paths for directed acyclic graphs	PPT/ Chalk and Board
27.	L24	Floyd-Warshall algorithm	PPT/ Chalk and Board
28.	L25	**Revision of important concept of Graph (unit-3)**	PPT/ Chalk and Board
29.	L26	Computational Complexity:Basic Concepts,	PPT/ Chalk and Board
30.	L27	Polynomial vs Non-Polynomial	PPT/ Chalk and Board
31.	L28	Complexity of Graph	PPT/ Chalk and Board
32.	L29	NP- hard	PPT/ Chalk and Board
33.	L30	NP-complete classes	PPT/ Chalk and Board
34.	L31	Flow and Sorting Networks,	PPT/ Chalk and Board
35.	L32	Flow networks	PPT/ Chalk and Board
36.	L33	Ford- Fulkerson method,	PPT/ Chalk and Board
37.	L34	Maximum bipartite matching,	PPT/ Chalk and Board
38.	L35	Sorting Networks, Comparison network	PPT/ Chalk and Board
39.	L36	Zero- one principle, Bitonic sorting network	PPT/ Chalk and Board
40.	L37	merging network	PPT/ Chalk and Board
41.	L38	**Revision of Unit 4 Concepts**	PPT/ Chalk and Board

LESSON PLAN

Name of the Faculty:	**Dr. Vandna Rani**
Discipline:	**B.Tech (IT/CSE)**
Semester:	**4th**
Subject:	**Universal Human Values II HSMC (HTM-901A)**
Work Load (Lecture/Practical) per week (In hours):	**Lecture-3**

Sr. No.	Lecture No.	Topic (Including Assignment/Test/Quiz/Activity)	Pedagogy(PPT/Video Lecture/Activity/Marker & Board/Case-Study)
1	L1	**Module-1: Course Introduction: Need,**	Lecture
2	L2	**Basic Guidelines, Content and Process forValue Education**	PPT & Self Reflection
3	L3	Purpose and motivation for the course, recapitulation from Universal Human Values-I	PPT & Self Reflection
4	L4	Self-Exploration: Meaning, content and process. Natural Acceptance	PPT& Self Reflection
5	L5	Experiential Validation as the process for self-exploration	PPT & Self Reflection
6	L6	Experiential Validation as the process for self-exploration	PPT& Self Reflection
7	L7	Continuous Happiness and Prosperity- A look at basic Human Aspirations	PPT& Self Reflection
8	L8	Right understanding, Relationship and Physical Facility: the basic requirements for fulfillment of aspirations of every human being with their correct priority	PPT & Self Reflection
9	L9	Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario	PPT & Self Reflection
10	L10	Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario	PPT & Self Reflection
11	L11	Method to fulfill the above human aspirations: understanding and living in harmony at various levels.	PPT & Self Reflection
12	L12	Method to fulfil the above human aspirations: understanding and living in harmony at various levels.	PPT & Self Reflection
13	L13	Practice sessions to discuss natural acceptance in human being	Lecture
14		ASSIGNMENT-1	In Hard Copy
15	L14	**Module 2: Understanding Harmony inthe Human Being - Harmony in Myself! Understanding human being as a co-existence of the sentient 'I' and the material Body**	Lecture
16	L15	Understanding the needs of Self ('I') and 'Body' - happiness and physical facility	PPT & Self Reflection
17	L16	Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer)	PPT & Self Reflection

18	L17	Understanding the characteristics and activities of 'I' and harmony in 'I'	PPT & Self Reflection
19	L18	Understanding the harmony of I with the Body: Sanyam and Health; correct appraisal of Physical needs, meaning of Prosperity in detail	PPT & Self Reflection
20	L19	Programs to ensure Sanyam and Health.	PPT & Self Reflection
21	L20	Practice sessions to discuss the role others have played in making material goods available to me	Lecture
22		TEST-1	
23	L21	Differentiate between prosperity and accumulation. Discuss program for ensuring health vs dealing with disease	PPT & Self Reflection
24	L22	**Module 3: Understanding Harmony inthe Family and Society-Harmony inHuman-Human Relationship** **Understanding values in human-human relationship; meaning of Justice (nine universal values in relationships) and program for its fulfilment to ensure mutual happiness; Trust and Respect as the foundational values of relationship**	Lecture & Video
25	L22	Understanding the meaning of Trust; Difference between intention and competence	PPT & Self Reflection
26	L23	Understanding the meaning of Respect, Difference between respect and differentiation; the other salient values in relationship	PPT & Self Reflection
27	L24	Understanding the harmony in the society (society being an extension of family): Resolution, Prosperity, fearlessness (trust) and co-existence as comprehensive Human Goals	PPT & Self Reflection
28	L25	Visualizing a universal harmonious order in society- Undivided Society. Universal Order - from family to world family.	Lecture
29	L27	Gratitude as a universal value in relationships. Discuss scenarios Elicit examples from students' lives	PPT & Self Reflection
30		QUIZ	
31	L28	**Module4: Understanding Harmony in theNature and Existence - Whole existence asCoexistence** **Understanding the harmony in the Nature**	Lecture
32	L29	Interconnectedness and mutual fulfillment among the four orders of nature -recyclability and self - regulation in nature.	PPT & Self Reflection
33	L30	Understanding Existence as Co-existence of mutually interacting units in all-pervasive space	PPT & Self Reflection
34	L31	Holistic perception of harmony at all levels of existence	PPT & Chalk
35		TEST-2	
36	L32	**Module 5: Implications of the above HolisticUnderstanding of Harmony on ProfessionalEthics - Natural acceptance of human values**	Lecture
37	L33	Definitiveness of Ethical Human Conduct	Lecture

38	L34	Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order	PPT & Self Reflection
39	L35	Competence in professional ethics: a. Ability to utilize the professional competence for augmenting universal human order b. Ability to identify the scope and characteristics of people- friendly and eco-friendly production systems, c. Ability to identify and develop appropriate technologies and management patterns for above production systems.	PPT & Self Reflection
40	L36	Case studies of typical holistic technologies, management models and production systems	PPT & Self Reflection
41	L37	Strategy for transition from the present state to Universal Human Order: a. At the level of individual: as socially and ecologically responsible engineers, technologists and managers b. At the level of society: as mutually enriching institutions and organizations	Lecture & Chalk
42	L38	Sum up of program	Lecture
43		Assignment-2	In Hard Copy
44	L39	Revision Module1 & 2	Lecture
45	L40	Revision Module 3&4	Lecture
46	L41	Revision Module5	Lecture

Lesson Plan

Name of the Faculty:	**Dr. L.S.Reen/ Ms. Khushbu**
Discipline:	**B.Tech CSE**
Semester:	**4th Sem**
Subject:	**Discrete Mathematics(PC-CS-202A)**
Work Load (Lecture/Practical) Per week (in hours):	**Lecture – 3**

Sr No.	**Lecture No.**	**Theory** **Topic (Including Assignment/Test/Quiz)**	**Pedagogy (PPT& Chalk-Board and Board/Video Recording /Activity/Case Study)**
1.	L1.	**Unit-1** Sets Introduction, Subsets	Marker and Board
2.	L2.	Veinn Diagram, operations on sets	Marker and Board
3.	L3.	Laws of set theory	Marker and Board
4.	L4.	Power, product &partition of sets	Marker and Board
5.	L5.	Principle of Exclusion &inclusion	Marker and Board
6.	L6	Proposition, Logical operations	Marker and Board
7.	L7	Truth Tables, Equivalence, Implications	Marker and Board
8.	L8	Laws of logic, Normal form	**Assignment from 1st Unit**
9.	L9	Predicates&Quantifier, Mathematical Induction	**Test from 1st unit**
10.	L10	**Unit-2** Product, Partition, Relation	Marker and Board
11.	L11	Path in relation, Diagraphs, Properties of relation	Marker and Board
12.	L12	Equivalence, partially ordered relation	Marker and Board
13.	L13	Computer Representation. Of relation & diagraphs	Marker and Board
14.	L14	Manipulation of relation	Marker and Board
15.	L15	Transitive Closure	Marker and Board
16.	L16	Warshall's Algorithm	**Assignment from 2nd unit**
17.	L17	Posets, Hasse diag., Lattice	Marker and Board
18.	L18	Lattice Continue	**Test from 2ND unit**
19.	L19	**Unit-3** Definitions and types of functions	

20.	L20	Injective,Subjective and bijective	Marker and Board
21.	L21	Composition, Identity and inverse	Marker and Board
22.	L22	Review of Permutation and combination	Marker and Board
23.	L23	Pigeon hole principle	**Assignment form 3rd Unit**
24.	L24	Principle of inclusion and exclusion	Marker and Board
25.	L25	Recurrence relations	Marker and Board
26.	L26	Generating function	**Test from 3rd unit**
27.	L27	**Unit-4** Algebraic structures with one binary operation-semigroups	Marker and Board
28.	L28	Monoids and groups	Marker and Board
29.	L29	Product of algebraic structures	Marker and Board
30.	L30	Quotient of algebraic structures	Marker and Board
31.	L31	Isomorphism, homomorphism, automorphism	Marker and Board
32.	L32	Isomorphism, homomorphism, automorphism continue	**Assignment from 4th unit**
33.	L33	Cyclic groups	Marker and Board
34.	L34	Normal sub groups	Marker and Board
35.	L35	Codes and group codes	Marker and Board
36.	L36	Ring	Marker and Board
37.	L37	Ring homomorphism and isomorphism	**Test from 4th unit**
38.	L38	Revision	**Assignment for important questions**
39.	L39	Doubt session	Marker and Board

Lesson Plan

Name of the Faculty:	**Dr.Gaurav Sharma/ Er. Sonia/ Er. Meenakshi**
Discipline:	**B.Tech CSE**
Semester:	**4th**
Subject:	**Operating Systems (PC-CS-206A)**
Work Load (Lecture/Practical)Per week (in hours):	**Lecture-3**

Sr No.	Lecture No.	Theory Topic(Including Assignment/Test/Quiz)	Pedagogy (PPT& Chalk-Board and Board/Video Recording /Activity/Case Study)
1	L1	**Unit 1** -Introduction to OS. Operating system functions	PPT
2	L2	Different types of O.S.: batch process, multi-programmed, time-sharing, real-time, distributed	PPT
3	L3	Parallel O.S.	PPT
4	L4	System Structure: Computer system operation, I/O structure	PPT
5	L5	Storage structure, storage hierarchy	PPT
6	L6	Different types of protections	PPT
7	L7	Operating system structure (simple, layered, virtual machine)	PPT
8	L8	O/S services, system calls.	PPT
9		**Class test**	Offline
10	L9	**Unit 2** -CPU scheduling: scheduling criteria	Chalk-Board
11	L10	Preemptive & non-preemptive scheduling	Chalk-Board
12	L11	Scheduling algorithms,	Chalk-Board
13	L12	Algorithm evaluation, multi-processor scheduling.	Chalk-Board
14	L13	Threads: overview, benefits of threads	PPT
15	L14	User and kernel threads	PPT
16	L15	Process Management: Concept of processes	PPT
17	L16	Process states, process control	PPT
18	L17	Co-operating processes, inter-process communication.	PPT

19	L18	Process Synchronization: background, critical section problem	PPT
20	L19	Critical region, synchronization hardware, Classical problems of synchronization, semaphores	PPT
21		**Assignment based on scheduling**	Offline
22	L20	**Unit 3** -Deadlocks: Concept of deadlock, deadlock characterization	PPT & Chalk-Board
23	L21	Deadlock prevention, deadlock avoidance	PPT & Chalk-Board
24	L22	Deadlock detection, recovery from deadlock	PPT & Chalk-Board
25	L23	Memory Management: background, logical vs. physical address space	PPT & Chalk-Board
26	L24	Contiguous memory allocation	PPT & Chalk-Board
27	L25	Paging, segmentation	PPT & Chalk-Board
28	L26	Segmentation with paging. Concept of fragmentation	PPT & Chalk-Board
29	L27	Virtual Memory: background	PPT & Chalk-Board
30	L28	Demand paging, concept of page replacement	PPT & Chalk-Board
31	L29	Page replacement algorithms	PPT & Chalk-Board
32	L30	Allocation of frames, thrashing.	PPT & Chalk-Board
33	L31	**Unit 4** -File Systems: file concept, file organization and access methods	PPT & Chalk-Board
34	L32	Allocation methods, directory structure, Free-space management	PPT & Chalk-Board
35	L33	I/O Management: I/O hardware, polling, interrupts, DMA, kernel I/O subsystem (scheduling, buffering, caching, spooling and device reservation)	PPT & Chalk-Board
36	L34	Disk Management**:** disk structure , Disk scheduling (FCFS, SSTF, SCAN,C-SCAN)	PPT & Chalk-Board
37	L35	Disk reliability, disk Performance parameters, Protection & Security: Goals of protection and security	PPT & Chalk-Board
38	L36	Security attacks, authentication, Program threats, system threats, threat monitoring.Case studies: UNIX file system, Windows file system	PPT & Chalk-Board
39		**Queries of 4th unit**	Offline

Lesson Plan

Name of the Faculty:	**Dr. Gaganpreet/ Er.Rajiv Bansal / Er.Ritu Rajal**
Discipline:	**B.Tech(CSE)**
Semester:	**4th**
Subject:	**Internet Technology and Management (PC-CS-204A)**
Work Load(Lecture/Practical) per week (In hours):	**Lecture-3**

S.No	**Lecture No.**	**Theory**	
		Topic(Including Assignment/Test/Quiz)	**Pedagogy (PPT/Chalk and Board/Video Recording /Activity/Case Study)**
1.	L1.	Introduction To Networks And Internet	Chalk and Board, PPT
2.	L2.	History, Internet, Intranet And Extranet.	PPT, Chalk and Board
3.	L3.	Internet Congestion, Internet Culture, Business Culture On Internet	Chalk and Board, PPT
4.	L4.	Collaborative Computing And The Internet	Chalk and Board, PPT
5.	L5.	Working Of Internet. Modes Of Connecting To Internet, Internet Service Providers(Isps)	Chalk and Board, PPT
6.	L6.	Internet Address, Standard Address	Chalk and Board, PPT
7.	L7.	Domain Name, Dns	Chalk and Board, PPT
8.	L8.	Ip.V6.Modems, Speed And Time Continuum	PPT, Chalk and Board
9.	L9.	Communications Software, Internet Tools	Chalk and Board, PPT
10.		**Assignment1**	On Paper
11.	L10.	Introduction, Miscellaneous Web Browser Details	Chalk and Board, PPT
12.	L11.	Searching The Www: Directories Search Engines And Meta Search Engines	Chalk and Board
13.	L12.	Search Fundamentals, Search Strategies, Working Of The Search Engines	Chalk and Board and PPT
14.	L13.	Telnet And Ftp	Chalk and Board and PPT
15.	L14.	Http, Gopher Commands , Tcp/Ip	Chalk and Board and PPT

16.	L15.	Introduction To Browser, Coast-To-Coast Surfing	Chalk and Board and PPT
17.	L16.	Hypertext Markup Language, Web Page Installation	w3schools html - Search (bing.com)Chalk and Board and PPT
18.	L17.	Web Page Setup, Basics Of Html(Teaching and assignment).	w3schools html - Search (bing.com) Chalk and Board and PPT
19.	L18.	Formatting And Hyperlink Creation	Chalk and Board and PPT
20.		**Assignment 2**	On Paper
21.	L19.	Using Frontpage Express, Plug-Ins	Chalk and Board and PPT
22.	L20.	Introduction, EMAIL Advantages And Disadvantages,	Chalk and Board and PPT
23.	L21.	User Ids, Pass Words, E-Mail Addresses.	Chalk and Board and PPT
24.	L22.	Message Composition, Mailer Features	Chalk and Board and PPT
25.	L23.	E-Mail Inner Workings	Chalk and Board and PPT
26.	L24.	E-Mail Management, Message Components, Mime Types	Chalk and Board and PPT
27.	L25.	Newsgroups, Mailing Lists, Chat Rooms	Chalk and Board and PPT
28.	L26.	Secure-Mails,Smtp	Chalk and Board and PPT
29.	L27.	Pico, Pine, Library Cards Catalog	Chalk and Board and PPT
30.	L28.	Online Ref. Works. Languages: Basic And Advanced Html	Chalk and Board and PPT
31.	L29.	Basics Of Scripting Languages – Xml, Dhtml, Java Script(Teaching and assignment).	w3schools html - Search (bing.com) Chalk and Board and PPT
32.		**Revision**	
33.	L30.	Introduction, Software Complexity, Attacks	Chalk and Board and PPT
34.	L31.	Security And Privacy Levels	Chalk and Board, PPT
35.	L32.	Microsoft Personal Web Server. Accessing and Using these Servers	Chalk and Board, PPT
36.	L33.	Privacy And Security Topics:	Chalk and Board and PPT
37.	L34.	Accessibility And Risk Analysis, Security Policy	Chalk and Board and PPT
38.	L35.	Encryption Schemes, Secure Web Document	Chalk and Board, PPT
39.	L36.	Digital Signatures, Firewalls	Chalk and Board, PPT
40.	L37.	Intrusion Detection Systems	Chalk and Board, PPT

Lesson Plan

Name of the Faculty:	**Er. Shilpa/ Er. Kapil**
Discipline:	**B.Tech**
Semester:	**4th**
Subject:	**Environmental Sciences(MC-901A)**
Work Load(Lecture/Practical) per week (In hours):	**Lecture-2**

S.No	**Lecture No.**	**Theory**	
		Topic(Including Assignment/Test/Quiz)	**Pedagogy (PPT/Chalk and Board/Video Recording /Activity/Case Study)**
1	1	Definition, Scope and multidisciplinary nature of environmental studies.	Lecture
2	2	Importance of EVS and Need for public awareness.	Lecture
3	3	Renewable and non-renewable resources, Forest resources	Lecture
4	4	Water resources	Lecture
5	5	Mineral resources	Lecture
6	6	Food resources	Lecture
7	7	Energy resources	Lecture
8	8	Land resources	Lecture
9	9	**Case studies**	Lecture/ PPT
10	10	Role of an individual in conservation of natural resources and Equitable use of resources for sustainable lifestyle.	Lecture
11	11	Concept, Structure and function of an ecosystem	Lecture
12	12	Producers, consumers and decomposers. Energy flow in the ecosystem.	Lecture
13	13	Biogeochemical Cycles, Ecological succession.	Lecture
14	14	Food chains, food webs and ecological pyramids.	Lecture
15	15	Characteristic features, structure and function of the Forest ecosystem and Grassland ecosystem	Lecture
16	16	Characteristic features, structure and function of the Desert ecosystem and Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).	Lecture
17		**Test** (Natural Resources & Ecosystem)	Pen& Paper
18	17	Introduction - Definition: genetic, species and eco-system diversity	Lecture
19	18	Biogeographical classification of India	Lecture

20	19	Value of biodiversity	Lecture
21	20	India as a mega-diversity nation	Lecture
22	21	Hot-spots of biodiversity.	Lecture
23	22	Threats to biodiversity	Lecture
24	23	Endangered, endemic, vulnerable, extinct and rare species.	Lecture
25	24	Conservation of biodiversity	Lecture
26	25	Cause, effects and control measures of Air Pollution.	Lecture
27	26	Cause, effects and control measures of Water Pollution	Lecture
28	27	Soil Pollution and Marine Pollution	Lecture
29	28	Noise Pollution and Thermal Pollution	Lecture
30	29	Nuclear hazards, Solid waste management	Lecture
31	30	Role of an individual in prevention of pollution	Lecture
32	31	Pollution case studies	Lecture/PPT
33	32	Disaster management	Lecture/ PPT
34		**QUIZ**	PPT
35	33	Sustainable development, Urban problems related to energy	Lecture
36	34	Water conservation Nuclear accidents and holocaust	Lecture
37	35	Resettlement and rehabilitation of people Environmental ethics:Issues and possible solutions	Lecture
38	36	Climate change, global warming, acid rain, ozone layer depletion	Lecture
39	37	Wasteland reclamation, Consumerism and waste products.	Lecture
40	38	Environment Protection Act.Air (Prevention and Control of Pollution) Act.Water (Prevention and Control of Pollution) Act.	Lecture
41	39	Wildlife Protection Act.Forest Conservation Act. Issues involved in the enforcement of environmental legislation Public awareness.	Lecture
42	40	Human Population and the Environment,Population growth, Variation among nations	Lecture
43	41	Population explosion- Family Welfare Programme.	Lecture
44	42	Human Rights, Value Education	Lecture
45	43	MV/AIDS, Women and Child Welfare	Lecture
46	44	Role of information Technology in Environment and human health.	Lecture
47		**Field Work/ Assignment**	Practical/ Report