Department of Civil Engineering

Semester – I (2016-17)

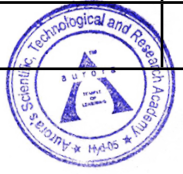
Engineering Geology Session Plan

S. No	Topics as per the JNTU syllabus		Lecture No.	Suggested Books – Page No.s.	Remarks
	Modules	Sub-Modules			
1	Overview of Subject	Background	L1	T1	
2	Prerequisites, scope & applications		L2	T1	
Unit 1:Introduction to EGand Weathering of Rocks					
3	Importance of Geology from civil engineering point of view	• ETD • Geological maps • geological features • Pre-geological survey	L3	T1-Ch1(5-10)	
4	Brief study of case histories of failure of some civil engineering constructions due to geological drawbacks	• St.Francis dam • Halesbar dam • Kaila dam • Kodaganar dam • Tigra dam	L4,L5	T1-Ch1(5-6)	
5	Importance of Physical geology, Petrology and Structural geology.	• Suitability of rocks as building stones • Suitability of sites for dam construction	L6	T1-Ch1(2-5)	
6	WEATHERING OF ROCKS:	• Effects over different properties of rocks • Importance of weathering • Weathering of common rock like granite.	L7,L8	T1-Ch2(14-26)	
7	Activity		L9		
Unit 2-Mineralogy and Petrology					

S. No	Topics as per the JNTU syllabus		Lecture No.	Suggested Books – Page No.s.	Remarks
	Modules	Sub-Modules			
8	Definition of Mineral	• Introduction • Exception for definition of mineral	L10	T1-Ch3(39-40)	
9	Importance of study of minerals	• Relationship between properties of minerals and rocks	L11	T1-Ch3(39-40)	
10	Different methods of study of minerals	• physical properties • chemical composition • optical properties • X-ray analysis	L12	T1-Ch3(45)	
11	Advantages of study of minerals by physical properties,	• Advantages • Disadvantages	L13	T1-Ch3(46-47)	
12	Role of study of physical properties of minerals in the identification of minerals,	• Form • Colour • Streak • Lustre • Fracture • Cleavage • Hardness • Density • Diaphaneity	L14	T1-Ch3(48-59)	
13	Study of physical properties of common rock forming minerals:	• Feldspar, • Quartz, • Flint, • Jasper, • Olivine, • Augite, • Hornblende,	L15,L16	T1-Ch4(89-93)	
14	Study of physical properties of common rock forming minerals	• Muscovite, • Biotite, • Asbestos, • Chlorite, • Kyanite, • Garnet, • Talc • Calcite	L17,L18	T1-Ch4(89-93)	

S. No	Topics as per the JNTU syllabus		Lecture No.	Suggested Books – Page No.s.	Remarks
	Modules	Sub-Modules			
15	Study of common economic minerals	• pyrite, • Haematite, • Magnetite, • Bauxite • Chromite, • Galena, • Pyrolusite, • Graphite, • Magnesite	L19,L20	T1-Ch4(89-93)	
16	Definition of Rock,	• Aggregate of Minerals • Unit of earth's crust	L21	T1-Ch5(95-100)	
17	Geological classification of rocks into igneous, sedimentary and metamorphic rocks	• Formation of Igneous rocks • Formation of Sedimentary rocks • Formation of Metamorphic rocks	L22	T1-Ch5(96-100)	
18	Dykes and Sills	• Forms of intrusive igneous rocks • Importance of dykes and sills from civil engineering point of view	L23	T1-Ch6(104-106)	
19	Common structures and textures of igneous rocks and their distinguishing features	**Structures** • Vesicular • Amygdaloidal • Columnar • Sheet • Pillow • Flow **Textures** • Based on degree of crystallinity • Based on granularity • Shapes of crystals • Mutual relations of constituent minerals of rock	L24,L25	T1-Ch6(115-123)	

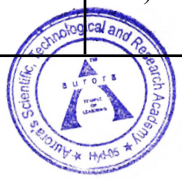
S. No	Topics as per the JNTU syllabus		Lecture No.	Suggested Books – Page No.s.	Remarks
	Modules	Sub-Modules			
20	Common structures and textures of sedimentary rocks and their distinguishing features	• Stratification • Cementing material • Fossil occurrence • Ripple marks • Mud cracks or Sun cracks • Rain prints or Rain Marks • Tracks and Trails	L26	T1-Ch7(145-150)	
21	Common structures and textures of metamorphic rocks and their distinguishing features	**Textures** • Crystalloblastic and palimpsest Textures • Xeoblastic and Idioblastic textures **Structures** • Gneissose • Schistose • Granulose • Cataclastic	L27,L28	T1-Ch8(171-175)	
22	Megascopic and microscopic study of igneous rocks	• Granite, • Dolerite, • Basalt, • Pegmatite,	L29	T1-Ch6(125-133)	
23	Megascopic and microscopic study of Sedimentary rocks	• Laterite, • Conglomerate, • sandstone, • shale, • Limestone,	L30	T1-Ch7(150-160)	
24	Megascopic and microscopic study of Metamorphic rocks	• Gneiss, • Schist, • Quartzite, • Marble and • slate	L31	T1-Ch8(176-183)	
25	Rock excavation	• Crushed zone • Crack formation • Crack propagation • Ripping	L32	R4-Ch9(454-460)	
26	Stone aggregates	• Rubble stone • Dimension stone • Flag stone • Crushed stone	L33	T1-Ch17(371-75)	
27	Activity		L34		



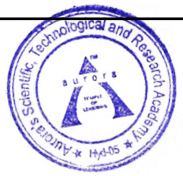
S. No	Topics as per the JNTU syllabus		Lecture No.	Suggested Books – Page No.s.	Remarks
	Modules	Sub-Modules			
Unit-3-Stratigraphy,Ground water, Earthquakes and Landslides					
28	Indian stratigraphy	• Principle of stratigraphy • Present is key to past • Aims of stratigraphy • Geological divisions of India	L35	T1-Ch12(268-284)	
29	Palaentology and geological time scale	• Achaean Era • Precambrian Era • Primary • Secondary Era • Tertiary Era • Quaternary Era	L36	T1-Ch12(264-266)	
30	Outcrop	• Inclined bed • Surface slope and dip towards the same side • Surface slope and dip in opposite direction	L37	T1-Ch9(192)	
31	strike and Dip	• True dip • Apparent dip • clinometer	L38	T1-Ch9(194-195)	
32	Study of common geological structures associating with rocks such as folds and faults, - their important types.	• Part of fold • Classification of folds • Parts of fault • Classification of faults	L39	T1-Ch9(195-218)	
33	Study of common geological structures associating with rocks joints and unconformities- their important types.	• Part of Joint • Classification of joint • Parts of unconformities • Classification of unconformities	L40	T1-Ch9(219-226)	
34	Importance of study of Ground water, Water table common types of ground water, springs	• Advantages of using groundwater • Zone of aeration • Zone of saturation	L41	T1-Ch11(250-253)	

S. No	Topics as per the JNTU syllabus		Lecture No.	Suggested Books – Page No.s.	Remarks
	Modules	Sub-Modules			
35	cone of depression	• Unconfined Aquifer, • Drawdown curve • Radius of influence	L42	T1-Ch11(254-256)	
36	geological controls of ground water movement	• Permeability character • Attitude of bedding • Buried river channels • Occurrence of dykes	L43	T1-Ch11(253-254)	
37	ground water exploration	• Water divining • Geological investigation • Geophysical investigation • Hydrological investigation	L44	T1-Ch11(257-260)	
38	Importance of study of earthquakes ,Their causes and effects	• Earthquake terminology • Classification and causes of earthquakes.	L45	T1-Ch13(286-87,294-95)	
39	shield areas and seismic belts	• Occurrence of earthquake due to underground instability • Circum pacific belt • Mediterrannean belt • Mid-atlantic ridge	L46	T1-Ch13(288)	
40	Seismic waves, Richter scale,	• P waves • Swaves • L waves • seismograph	L47	T1-Ch13(289-292)	
41	precautions to be taken for building construction in seismic areas,	• foundation on hard bed rock • proper tie-up of super structure and foundation • minimum doors and windows	L48	T1-Ch13(296)	
42	Landslides	• Causes of landslides • Effects of landslides • Preventive measures for landslides	L49	T1-Ch13(303-307)	
Unit-4-Dams,Reservoirs,Geophysical Investigations					

S. No	Topics as per the JNTU syllabus		Lecture No.	Suggested Books – Page No.s.	Remarks
	Modules	Sub-Modules			
43	Types of dams	• Gravity dams • Arch dams • Buttress dams • Earth/rock fill dam	L50	T1-Ch18(381-383)	
44	Bearing of Geology of site in their selection, Geological considerations in selection of a dam site	• Narrow river valley • Occurrence of bedrock at shallow depth • Competent rocks to offer a stable foundation • Proper geological structures	L51	T1-Ch18(383-396)	
45	Analysis of Dam failures of the past	• St.Francis dam • Halesbar dam • Kaila dam • Kodaganar dam • Tigra dam	L52	T1-Ch18(378-380)	
46	Factors contributing to the success of a reservoir	• Water tightness • Long life	L53	T1-Ch19(412)	
47	Geological factors influencing water tightness and life of reservoirs	• Buried river channels • Influence of rock types • Influence of geological structures • Influence of water table	L54	T1-Ch19(413-420)	
48	Geo hazards, ground subsidence	• Subsidence due to plastic outflow • Subsidence due to compaction • Subsidence due to collapse	L55	T1-Ch13(303)	
49	Importance of geophysical studies	• Exploration geophysics • Necessity of geophysical investigations	L56	T1-Ch15(308-310)	



S. No	Topics as per the JNTU syllabus		Lecture No.	Suggested Books – Page No.s.	Remarks
	Modules	Sub-Modules			
50	Principles of geophysical study by Gravity methods, Magnetic methods,	• Physical property • Principle • Parameters • Methods • Equipment • applications	L57	T1-Ch15(314-319)	
51	Principles of geophysical study by Electrical methods, Seismic methods,	• Physical property • Principle • Parameters • Methods • Equipment • applications	L58	T1-Ch15(319-327)	
52	Principles of geophysical study by Radiometric methods and Geothermal method,	• Physical property • Principle • Parameters • Methods • Equipment • applications	L59	T1-Ch15(327-330)	
53	Special importance of Electrical resistivity method and seismic refraction method	• Profiling • Sounding • Travel-time curve • Geophone	L60	T1-Ch16(332-355)	
54	Improvement of competence of sites by grouting	• Injection of slurry • Spacing of grouting holes	L61	T1-Ch17(361-362)	
55	Fundamental aspects of Rock mechanics	• Engineering properties of rocks • Study of behavior of rocks under loading	L62	T1-Ch17(356-357)	
56	Environmental geology	• Hydrogeology • Mineral resources • Contamination • Open cast workings • Flood plain hazard	L63	R4-Ch7(367-368)	
57	Activity	Quiz	L64		
Unit 5 :Tunnels					



S. No	Topics as per the JNTU syllabus		Lecture No.	Suggested Books – Page No.s.	Remarks
	Modules	Sub-Modules			
58	Purposes of Tunneling	• Traffic tunnels • Diversion tunnels • Pressure tunnels • Discharge tunnels	L65	T1-Ch20(428)	
59	Effects of tunneling on the ground	• Reduction of cohesiveness and compactness of ground • Popping • Disturbance of equilibrium • Release of poisonous gases	L66	T1-Ch20(429)	
60	Role of geological considerations (lithological, structural and ground water) in tunneling	• Importance of rock types • Importance of geological structures • Importance of groundwater conditions	L67	T1-Ch20(430-439)	
61	over break and lining in tunnels	• Provision of support for tunnel • Lining,expensive treatment • Removal of rocks outside proposed tunnel perimeter	L68	T1-Ch20(429,440-41)	
62	Subsidence over old mines	• Subsidence effect of mineral extraction • Pillar and stall method	L69	R4-Ch8(437-443)	
63	Mining substances	• Cyanide • Sulphuric acid	L70	R5-Ch21(485-86)	

TEXT BOOKS:

1. Engineering Geology by N. Chennakesavulu, Mac-Millan, Publishers 2nd Edition India Ltd. 2010.
2. Principles of Engineering Geology by K.V.G.K Gokhale - B.S. Publications
3. Engineering Geology by SubinoyGangopadhyay, Oxford University press.

REFERENCES:

1. Engineering Geology for Civil Engineering, P.C. Varghese, PHI Learning & private Limited.
2. Geology basics of Engineering by AureleParriaux, CRC press
3. Krynine& Judd, principles of Engineering Geology & Geotechnics, CBS Publishers & Distribution.
4. F.G. Bell Fundamental of Engineering Geology Butterworths, Publications, New Delhi, 1992.
5. Community Guide to Environmental Health,Jeff Conant, Pam Eadem, 2008,Hesperian health guide.

Department of Civil Engineering

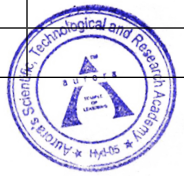
Semester – II (2016-17)

Building Materials, Construction And Planning Session Plan

S.No	Topics as per JNTU syllabus		Lecture no	Suggested books-pg no	Remarks
	modules	**Sub modules**			
	Construction Materials	Overview of different construction materials	L1	T3-Ch5(5.1)	
1. Stones,Bricks,wood,Aluminium and Glass					
1	**Stones**	Introduction	L2	R1-Ch3(67)	
		Importance of stone and uses	L3	R1-Ch3(79-81)	
		Dressing of stone			
		Structural requirements of stone,seasoning of stone	L4	R1-Ch3(81-84)	
	ROCKS	definition	L5	R1-Ch3(67)	
		Rock cycle		R1Ch3(73)	
		Classification		R1-Ch3(69,73-75)	
2	**Rock forming minerals**	Properties	L6	R1-Ch3(68-72)	
		Table of chemical composition and physical characteristics			
3	**Quarrying**	Definition	L7	R1-Ch3(75-79)	
		Tools used for Quarrying			
		Methods			
4	**Bricks**	Introduction	L8	R1-Ch2(21,26-28)	
		Manufacturing of clay bricks			
		Composition of Brick earth	L9	R1-Ch2(25-26)	
		Structural requirements	L10	R1-Ch2(35)	
5	**Wood**	Structure,Types and Properties	L11	R1-Ch4(108-114)	
		Seasoning,Methods of seasoning Defects	L12	R1-Ch4(114-126)	
6	**Glass**	GI/fiber reinforced glass bricks	L13	T3-Ch5(5.37-5.39)	

S.No	Topics as per JNTU syllabus		Lecture no	Suggested books-pg no	Remarks
	modules	**Sub modules**			
7	**Steel**	Steel and Aluminium			
	Activity 1	Pass the chalk	L14,L15		Group 1
					Group 2
2. Cement and Admixtures					
8	**Cement**	Ingredients of cement	L16	R1- Ch5(167-169),R1-Ch5(173)	
		Manufacture of cement			
		Chemical composition	L17	R1- Ch5(170-171)	
		Hydration			
		Field and lab tests	L18	R1-Ch5(175-186)	
9	**Admixtures**	Definition	L19	R1 -Ch10(296-300)	
		Mineral and chemical admixtures	L20	R6-Ch5(124-217)	
		Uses			
	Activity 2	Quiz session	L21,L22		Group 1
					Group 2
3.Building components and services					
10	**Lintels**	Introduction	L23	T1-Ch13(293-295)	
		Classification of lintels			
		Reinforced cement concrete lintels	L24	T1-Ch13(295-296)	
		Loading on lintels			
11	**Arches**	Stability of an Arch	L25	T1-Ch13(301-305)	
		Classification of an arch			
		Concrete Arches	L26	T1-Ch13(306-307)	
		Construction of Arches			
12	**Stair cases**	Introduction	L34	T1-Ch14(311-312)	
		Requirements	L35,L36	T1-Ch14(312-320)	
		Classification			
13	**Roofs, Foundations**	Introduction,Types	L37,L38	T1-Ch15(329-336)	
14	**Joinery**	Introduction	L39	T1-Ch17(363-370)	
		Classification			
		Doors	L40	T1-Ch17(377-395)	
		Windows			

S.No	Topics as per JNTU syllabus		Lecture no	Suggested books-pg no	Remarks
	modules	Sub modules			
15	**Plumbing services**	Water distribution	L41	T1-Ch30(585-595)	
		Sanitary:lines and fittings			
16	**Ventilations**	Air-conditioning Essentials and types	L42	T1-Ch27(519-529)	
17	**Acoustic**	Characteristics Absorption	L43	T1-Ch28(533-544)	
		Acoustic design			
18	**Fire protection**	Fire Hazards	L44	T1-Ch23(459-466)	
		Classification of fire resistant materials Construction			
	Activity 3	Group discussion	L45,L46		Group 1
					Group 2
4. Masonary and Finishing					
19	**Masonary**	Brick masonary	L47	T1-Ch6(167-169)	
		Types-bonds	L48	T1-Ch6(171-179)	
		Stone masonary types	L49	T1-Ch5(139)	
		Composite masonary	L50	T1-Ch7(215-220)	
20	**Finishers**	Plastering,pointing Painting,cladding	L51,L52	T1-Ch19(421-430)	
		Tiles-Types			
21	**Form work**	Requirements	L53	T1-Ch18(411-414)	
		Standards			
		Design,shoring			
		Underpinning Scaffolding	L54	T1-Ch18(415-416)	
	Activity 4	Poster presentation	L55,L56		Group 1
					Group 2
5. Building Planning					
22	**Building Planning**	Introduction	L57	T1-Ch31(605-606)	
		Types of plans			
		Principles of building planning	L58	T3-Ch3(3.2-3.13)	
		Classification of the buildings			
		By-laws			
	Activity 5	Jam session	L59,L60		Group 1



S.No	Topics as per JNTU syllabus		Lecture no	Suggested books-pg no	Remarks
	modules	Sub modules			
					Group 2

TEXT BOOKS:

1. Building Construction by B.C.Punmia, Ashok Kumar Jain and Arun Kumar Jain - Laxmi Publications (P) ltd., New Delhi
2. Building Construction by PC Verghese PHI.
3.Building Materials and Construction - Arora&Bindra, Dhanpat Roy Publications.

REFERENCES:

1.Building Materials by Duggal, New Age International.
2.Building planning by G.C.Singh.
3. ConstructionTechnology- Vol- I& II by R. Chuddy, Longman UK.
4.Basics of Civil Engg by SubhashChander; Jain Brothers.
5.Alternate Building materials and Technology, K.S.Jagadish, Venkatarama Reddy and others; New Age Publications.
6.Concrete technology by M.S.Shetty,S.chand publications

Department of Computer Science Engineering
Semester – I (2016-17)

OS Session Plan

S. No	Topics	Modules and Sub-Modules	Lecture No.	Reference Book/Chapter	Remarks
1	Overview	Overview of course unit-wise, Text Books Preferred	L1		
		Operating System Importance and Applications			
		Types Of Operating Systems	L2		
UNIT –I (OPERATING SYSTEM OVERVIEW)					
2	Operating system objectives and functions	User View System View Defining Operating Systems	L3	T2-Ch1 (66-69) R2-Ch1 (2-6) R3-Ch1 (20-28)	
3	Computer system architecture	Single processor system Multi processor system Clustered systems	L4	T1-ch1(11-15)	
4	OS Structure	Design and uses	L5	T1-ch1(15-17)	
5	OS Operation	Dual – mode operations Timer		T1-ch1(17-20)	
6	Evolution of operating system	Simple batch Multi-programming Time shared	L6	T2-ch2(70-80)	
		Personal computer Parallel and distributed system Real time system Special purpose system	L7	T1-ch(28-30)	
7	Operating System Services	User Interface GUI Program execution I/O operation File system manipulation communication error detection Resource allocation Accounting Protection and security	L8	T1-Ch2(39-43)	
8	User OS Interface	Command interpreter GUI	L9	T1-Ch2(41-43)	

S. No	Topics	Modules and Sub-Modules	Lecture No.	Reference Book/Chapter	Remarks
9	System Calls	Definition and Example		T1-Ch2 (43-46) R2-Ch3 (26-28) R3-Ch1 (44-53	
10	Types of system calls	Process control File management Device management Information maintenance Communication	L10	T1-Ch2 (43-56) R2-Ch3 (26-28) R3-Ch1 (44-53	
11	System programs And Operating system design and implementation	Design goals Mechanisms and policies Implementation	L11	T1-Ch2 (53-56)	
12	Operating system structure	Simple structure Layered Approach Microkernel Modules	L12	T1-Ch2 (56-61)	
13	Virtual Machine	Implementation Benefits Examples	L13	T1-Ch2 (62-66)	
UNIT-II(PROCESS MANAGEMENT)					
14	Process Concepts	Process Process state Process control block Threads	L14	T1-Ch3 (79-83) T2-Ch3 (108-141) R2-Ch5 (126-132) (160-161) R2-Ch6 (193-203) R3-Ch2 (71-77) (81-96) R4-Ch2 (28-31) (50-52) R5-Ch2 (30-42)	
15	Process scheduling	Scheduling queues Schedulers Context- switch Primitive scheduling Dispatcher	L15	T1-Ch5 (151-153)	
16	Scheduling criteria and scheduling algorithms	FCFS scheduling SJF scheduling Priority scheduling Round Robin scheduling	L16	T1-Ch5 (153-165) R1-Ch11 (343-364) (366-367) T2-Ch9 (394-421) R2-Ch8 (278-281) R3-Ch2 (132-148) R4-Ch2 (59-83) R5-Ch7 (166-170)	
17	Multi-process scheduling	Approaches to multiple processor scheduling Processor Affinity	L17	T1-Ch5(165-167)	
18	Real time scheduling	Approach Scheduling	L18	T2-ch10(470-472)	

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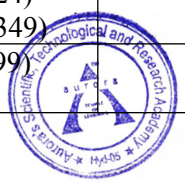
S. No	Topics	Modules and Sub-Modules	Lecture No.	Reference Book/Chapter	Remarks
19	Thread scheduling with case studies	Contentions scope thread scheduling Peterson's solution Synchronization Hardware		T1-Ch5 (167-170)	
20	Semaphore	Usage Implementation Deadlock for starvation	L19	T1-Ch6 (196-200)	
21	Classic problems of synchronization	Bounded buffer problem The reader-writers problem Dinning philosopher problem	L20	T1-Ch6 (200-205) R1-Ch13(408-410) T2- Ch5 (208-212) R3 Ch2(108-110) R4 Ch3(114-124	
22	Monitors	Usage Dining philosopher solution using monitors Implementing a monitor using semaphores Resuming processes within a monitor	L21	T1-Ch6 (205-213) T1-Ch6 (205-213) R1-Ch13 (426-436) T2-Ch5 (234-240) R3-Ch2 (115-119) R4-Ch4 (135-141) R5-Ch9 (222-227	
UNIT-III(CONCURRENCY)					
23	Logical &physical address space	Definition Flow diagram	L22 23 L23	T1-Ch8 (269-270)	
24	Swapping	Definition Calculating swapping rate		T1-Ch8 (272) R2-Ch10 (388) R3-Ch4 (196-200) R4-Ch5 (195-197) R5-Ch11 (306)	
25	Contiguous memory allocation	Memory mapping Memory protection Memory allocation Fragmentation	L23	T1-Ch8 (274-278s) R1-Ch15 (471-478) T2-Ch7 (305-311) R2-Ch10 (414) R5-Ch11 (293-295)	
26	Paging	Basic method Hardware support Protection Shared paging	L24	T1-Ch8 (278) R1-Ch15 (479-480) T2-Ch7 (317-321) R4-Ch6 (233-237) R5-Ch12 (323-325)	
27	Structure of page table	Hierarchical paging Hashed page tables Inverted page tables	L25	T1-Ch8 (288-292) T2-Ch7 (318-319) R2-Ch11 (436-437) R3-Ch4 (205) R5-Ch12 (328)	
28	Segmentation	Basic method Hardware	L26	T1-Ch8 (292-294) T2-Ch7 (321-322) R3-Ch4 (249-257) R4-Ch5 (217-224) R5-Ch12 (346-349)	
29	Segmentation with paging	Example of Intel Pentium	L27	T1-Ch8 (295-299)	



S. No	Topics	Modules and Sub-Modules	Lecture No.	Reference Book/Chapter	Remarks
30	Virtual memory	Background	L28	T1-Ch9 (303-306) R1-Ch15 (482-511) T2-Ch8 (333-371) R2-Ch11 (457-460) R3-Ch4 (202-211) R4-Ch6 (241-248) R5-Ch12 (339-341)	
31	Demand paging Performance of demand Paging	Basic concepts	L29	T1-Ch9 (306-315) R1-Ch15 (484-486) T2-Ch8 (354) R4-Ch6 (232,249)	
32	Page Replacement	Basic page replacement FIFO page replacement Optimal page	L30	T1-Ch9 (315-327) R1-Ch5 (486-487) T2-Ch8 (355-362) R2-Ch12 (484) R4-Ch6 (249-253) R2-Ch12 (484-490) R3-Ch4 (214-225	
33	Replacement Algorithms	Page buffering algorithms Counting based page replacement algorithms	L31		
34	Allocation Of frames	Minimum number of frames Allocation Algorithm Global Versus Local Allocation	L32	T1-Ch9(327-330)	
35	Thrashing	Cause of Thrashing Working set model Page Fault Frequency	L33	T1-Ch9(333-335)	
UNIT-IV(FILE SYSTEM INTERFACE)					
36	The concept of file	File attributes Operation	L34	T1-Ch10 (359-369) T2-Ch12 (526-535) R2-Ch17 (697-699) 3-Ch6 (380-381),(385) R5-Ch13 (358-372)	
37	Access methods	Sequential access Direct access Other access methods	L35		
38	Directory structure	Directory overview Storage structure	L36	T1-Ch10 (369-381) R1-Ch17 (563-568) T2-Ch12 (536-539) R2-Ch17 (699) R3-Ch6 (393-395) R4-Ch7 (296-301) R5-Ch13 (389-390)	
39	File system mounting	Existing system Unmounted volume	L37		
40	File sharing	Multiple users Remote file system Consistency semantics	L38	T1-Ch10 (381-391) R1-Ch17 (576-577) T2-Ch12 (539-543	
41	Protection	Types of access Access control	L39		

S. No	Topics	Modules and Sub-Modules	Lecture No.	Reference Book/Chapter	Remarks
42	File system structure	File system implementation Partitioning and mounting Virtual file systems	L40	T1-Ch11 (395-403) T2-Ch12 (540-541) R3-Ch6 (399-400)	
43	Allocation methods	Contiguous allocation Linked allocation	L41	T1-Ch11 (404-413) T2-Ch12 (543-551) R3-Ch6 (410-415) R5-Ch13 (384-385)	
44	Free space management	Introduction Efficiency and performance	L42	T1-Ch11 (413-419) R1-Ch17 (578-583) R2-Ch17 (730-732) R3-Ch6 (416-427)	
45	Directory implementation	Linear list Hash table	L43	T1-Ch11 (403-404) T2-Ch12 (536-538) R3-Ch6 (405-408) R5-Ch13 (392-393)	
46	Efficiency and performance		L44	T1-Ch11 (415-418)	
47	Overview of mass storage structure	Magnetic discs Magnetic tapes Disk structure	L45	T1-Ch12 (435-438) T2-Ch11 (487-493) R4-Ch7 (288-290)	
48	Disk attachment	Network attached storage Storage area network	L46	T1-Ch12 (438-440) T2-Ch11 (489-493)	
49	Disk scheduling	FCFS scheduling SSTF scheduling Scan scheduling	L47	T1-Ch12 (440-445) T2-Ch11(489-493)	
50	Disk management	Disk formatting Boot block Bad blocks	L48	T1-Ch12 (445-449)	
51	Swap space management	Swap space use Swap space location	L49	T1-Ch12 (449-451) R4-Ch7 (301-302)	
UNIT-V(DEADLOCK)					
55	System Model	Introduction	L50	T1-Ch7(237-238)	
56	Deadlock Characterization	Necessary Conditions Resource allocation graph	L51	T1-Ch7(240-243) R1-Ch12 (372-377) R5-Ch10 (254-255)	
57	Methods of handling deadlock	Problems of deadlock Deadlock avoidance	L52	T1-Ch7(243-244)	
58	Deadlock prevention	Mutual Exclusion Hold and wait No Preemption Circular wait	L53	T1-Ch7 (244-253) R1-Ch12 (383-393) T2-Ch6 (266-280) R2-Ch8 (295) R3-Ch3 (168-179) R4-Ch4 (170-175) R5-Ch10 (262-278)	

S. No	Topics	Modules and Sub-Modules	Lecture No.	Reference Book/Chapter	Remarks
59	Deadlock avoidance	Safe state Resource allocation graph algorithm Banker Algorithm	L54	T1-Ch7 (244-253) R1-Ch12 (383-393) T2-Ch6 (266-280) R2-Ch8 (295) R3-Ch3 (168-179) R4-Ch4 (170-175) R5-Ch10 (262-278)	
60	Deadlock detection	Single Instance Several Instance Detection –Algorithm Usage	L55	T1-Ch7 (254-257) T2-Ch6 (266-280) R3-Ch3 (180-182) R4-Ch4 (168-170) R5-Ch10 (257-261)	
61	Recovery from deadlock	Process termination Resource preemption	L56	T1-Ch7 (257-259) T2-Ch6 (266-280)	
62	Protection	System Protection Goals of protection Principles of protection	L57	T1-Ch17 (595-597) R1-Ch18 (592-596) T2-Ch15 (653) R4-Ch8 (347-343) R5-Ch14 (415-420)	
63	Domain of protection Access matrix	Introduction An example Implementation of access matrix	L58	T1-Ch17 (597-609) T2-Ch15 (653-656) R3-Ch9 (645-646) R4-Ch8 (343-348), (353-355) R5-Ch14(421-425)	
64	Access Control	Access control Revocation of access rights	L59	T1-Ch17 (609-613) T2-Ch15 (663-664)	
65	Capability based systems	An example	L60	R3-Ch9 (647-649) R4-Ch8 (345-347)	
66	Language based protection	Compiler based enforcement Protection in java		T1-Ch17 (614-619)	

SUGGESTED BOOKS

Text Books:

1. Operating System Principles, Abraham Silberschatz,Peter Baer Galvin, Greg Gagne, *th edition, Wiley Student Edition.
2. Operating Systems – Internals and Design Principles, W.Stallings, 6th Edition, Pearson.

Reference Books:

1. Modern Operating Systems, Andrew S Tanenbaum, 3rd edition, PHI.
2. Operating Systems: A concept based approach, 2nd edition, D.M. Dhamdhere, TMH.
3. Principles of operating systems, B.L.Stuart, Cengage learning, India.
4. Operating Systems, A.S. Godbole, 2nd edition, TMH.
5. An Introduction to Operating Systems, P.C.P Bhatt, PHI.
6. Operating systems, S.Haldar and A.A.Aravind, Pearson Education.
7. Operating Systems, R.Elmasri, A.G. Carrick and D.Levine, Mc Graw Hill.
8. Operating Systems in depth, T.W.Doeppner, Wiley.

Authors Scientific, Technological and Research Academy

Department of Computer Science Engineering
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WT Session Plan

S. No.	Topics as per the JNTU Syllabus	Sub-Topics	Lecture No.	Suggested Books	Remarks
1	Overview of subject	Overview of PHP,HTML, XML, JSP , Web servers , Servlets, JDBC	L1	T1, T2, R1	
2	Necessary Background	Internet, www, Web server, browsers, Mark-up languages			
UNIT-I : INTRODUCTION TO PHP					
3	Declaring variables, data types	Php variables scope, data types	L1	T1	
4	Arrays	Indexed arrays Associative arrays Multidimensional arrays	L2	T1	
5	Strings	Reverse a String Count The Number of Words in a String String Concatenation Operator	L3	T1	
6	operators, expressions	Operators, expressions	L4	T1	
7	control structures, functions	Statements ,php functions	L5	T1	
8	data from web form controls like text boxes, radio buttons, lists etc.,	Text boxes, radio buttons,lists	L6	T1	
9	Handling File Uploads	Handling File Uploads	L7	T1	
10	Connecting to database (MySQL as reference)	Connecting to MySql	L8	T1	
11	executing simple queries, handling results	executing simple queries, handling results	L9	T1	
12	Handling sessions and cookies File Handling in PHP	sessions and cookies File Handling i	L10	T1	
13	File operations	opening, closing, reading, writing, appending, deleting etc. on text files	L11	T1	
14	File operations like opening, closing, reading, writing, appending, deleting etc. on binary files	File operations like opening, closing, reading, writing, appending, deleting etc. on binary files	L12	T1	
UNIT-II : XML					
15	Introduction to XML	Introduction to XML Documents, well-formed, Structuring Data XML Namespaces	L 13	R1-Ch20 (684-695),	

S. No.	Topics as per the JNTU Syllabus	Sub-Topics	Lecture No.	Suggested Books	Remarks
16	Document Type Definition	DTDs, validating a document, Internal and external DTDs Example programs	L 14	T2 R3-Ch20 (686),	
17	XML Schemas	Introduction to XML Schema, Architecture of XML Schema, parsers, example	L 15, L16	T2 R1-Ch20 (697)	
18	DTD	Dynamic HTML, XML-DTD, Schemas	L 17	T2	
19	Document Object Model	Structure of DOM,DOM Methods, example	L 18	T2 R1-Ch20 (712-731)	
20	Presenting XML	XML Presentation, advantages of XML Presentations	L 19	T2	
21	XML Processors	XML Processor definition,DOM,SAX	L20,L 21	T2 R6-Ch7(320-322)	
UNIT-III : INTRODUCTION TO SERVLETS					
22	Introduction to Servlets	Introduction to Servlets Background of Servlets	L 22	R1-Ch36 (1343-1346)	
		Life cycle of Servlets and Simple Servlet program	L 23 L 24	R1-Ch36 (1343-1346)	
23	Servlet API	javax.servlet package ServletConfig, ServletContext, ServletRequest,GenericServlet class, HTTPServlet class, Interfaces	L 25,26	T2	
24	Protocols	Protocols, Servlets – API, Life cycle	L27	T2	
25	Starting parameters, reading initialisation parameters	Servlet parameters Initializations	L 28	T2	
26	The javax.servlet HTTP Package Handling HTTP request and responses	HTTP GET Request HTTP Post Request	L 29 L 30	T2	
27	Using Cookies Session tracking Security Issues	Session tracking and security Issues	L 31 L 32	R6-Ch11, Ch12	
28	Sessions	Servlet – Initialization – GET, POST, Sessions	L33	R1	
UNIT-IV :INTRODUCTION TO JSP					
29	Introduction to JSP The problem with Servlet	JSP overview disadvantage of Servlet Parts of JSP	L 34	R2-Ch1 (3-27), R2-Ch3 (29)	
30	The Anatomy of JSP page	JSP page, JSP elements, usage of JSP pages	L 35	R2-Ch3 (1382-1422),	

S. No.	Topics as per the JNTU Syllabus	Sub-Topics	Lecture No.	Suggested Books	Remarks
31	JSP Processing	JSP Page translation processing phases Model-view controller Implicit objects, using script lets	L 36	R2-Ch37 (1382-1422),	
32	Declarations Directives	MVC Architecture, Business logic, presentation, application request processing	L37 L38	R4,pg324	
33	Expressions, Code Snippets	Steps to install JDK, Configuring the environment variables		R4,pg99	
34	implicit objects	Installing the Tomcat server , configuring , testing ,Example web application overview	L 39, L40	R1-ch2.0	
35	Using Beans in JSP Pages	Page directives, include, implicit objects Installation - Tomcat	L41	R2-Ch6 (75-97),	
36	Using Cookies and session for session tracking	Using Cookies and session for session tracking	L42	R2-Ch6 (98-101),	
37	Connecting to database in JSP	Connecting to database in JSP	L43	R2-Ch6 (102-105),	
UNIT-V : CLIENT SIDE SCRIPTING					
38	Introduction to Javascript:	Drawbacks of HTML Introduction to script, Declaration of variables, Control statements	L 44 L45	T2-Ch5 (97-146) R1-Ch7 (228-423)	
39	declaring variables, scope of variables,	declaring variables, scope of variables	L46	T2	
40	functions, event handlers (onclick, onsubmit etc.),	onclick, onsubmit etc.	L47, L48	T2-Ch5 (97-146) R1-Ch7 (228-423)	
41	Document Object Model	Document Object Model	L49	T2	
42	Form validation	Form validation	L50	T2	
43	Simple AJAX application.	Simple AJAX application	L51,L52	T2	

TEXT BOOKS:

T1 : Web -Technologies, Uttam K Roy, Oxford University.
T2 : The Complete reference PHP — Steven Holzner, Tata Mc

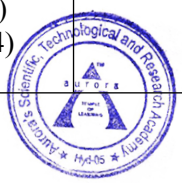
REFERENCE BOOKS:

R1 : PHP 5.1 for Beginners, IVAN BAYROSS,SHARANAM SHAH
R2 : Web Programming, building internet applications, Chris Bates edition, Wiley Dreamtech
R3 : Java Server Pages —Hans Bergsten, SPD O'Reilly
R4 : Java Script, ananagan, O'Reilly,SPD
R5: Beginning Web Programming-Jon Duckett WROX
R6 : Programming world wide web, R.W.Sebesta, Fourth Edition, Pearson
R7 : Internet and World Wide Web — How to program, Detest and Nieto, Pearson.

Department of Electronics & Communication Engineering
Semester – I (2016-17)

LDIC Session Plan

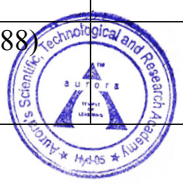
S. No.	Topics as per JNTU Syllabus	Sub-Topics	Lecture No.	Books Suggested Pg Nos.	Remarks
		SUBJECT INTRODUCTION			
1	Overview	Pre-requisites Text Books/ Reference books and Unit wise overview of the Subject	L1		
		UNIT-I: OPERATIONAL AMPLIFIER			
2	Ideal Op Amp & Characteristics	Electrical characteristics of Ideal Op-Amp and its equivalent circuit	L2	T1-Ch2 (49-50) T2-Ch3 (109-110)	
3	Practical Op Amp & Characteristics	Electrical characteristics of practical Op-Amp and its equivalent circuit	L3	T2-Ch3 (109-110) R1-Ch7(328-335)	
4	OP-Amp characteristics, DC Characteristics	Input Bias current, offset voltage, offset current and thermal drift. (only Definitions)	L4	T1-Ch3(117-126) R1-Ch5(225-229)	
5	AC Characteristics	Frequency response, Stability , Frequency compensation, slew rate	L5	T1-Ch3(126-144) R1-Ch8(358-374)	
6	741 OP-AMP and its features	Input resistance, input capacitance, input voltage range, SVRR, output resistance, large signal voltage gain, output voltage swing, output short circuit current, supply current, power consumption, gain bandwidth product, equivalent input noise voltage and current.	L6	T2-Ch3 (91,102-107) R1-Ch5(249-257)	
7	Modes of operation & Inverting amplifiers	Closed loop gain, i/p and o/p impedances for ideal and practical inverting Amplifier	L7	T1-Ch2 (51-55) T2-Ch3 (112) R1-Ch5(266-268)	
8	Non-inverting amplifiers	Closed loop gain, i/p and o/p impedances for ideal and practical non-inverting Amplifier, voltage follower	L8	T1-Ch2 (56-58) T2-Ch3 (113) R1-Ch5(264-266)	
9	Differential Amplifier	Combination of inverting and Non inverting and its internal blocks	L9	T1-Ch2 (59) T2-Ch3 (114)	



S. No.	Topics as per JNTU Syllabus	Sub-Topics	Lecture No.	Books Suggested Pg Nos.	Remarks
10	Instrumentation amplifier	Transducer circuit connection in industry & different Application	L10	R1-Ch 2(73-79)	GATE, IES
11	AC amplifier, buffers	Inverting, Non-inverting AC amplifier and AC Voltage follower	L11	T1-Ch4(164-166) T2-Ch7(237-244)	
12	Integrator and differentiator	Gain, frequency response of Ideal and practical circuits	L12	T1-Ch4(186-201) T2-Ch7(275-284) R1-Ch3(116-118)	
13	Comparators & Schmitt Trigger	Differential Amplifier & its Application, Comparator with closed loop Hysteresis & Losses	L13	T1-Ch5 (240)	
14	Introduction to Voltage Regulators, features of 723 regulators	723 General Purpose Regulator,78XX, 79XX, Switching Regulator	L14	T1-Ch6(254-276) R1-Ch5(234-239)	
15	Three terminal Voltage regulators	Positive Regulators 7805,7812 & Negative Regulators 7905,7912.etc	L15	T1-Ch6(251-253)	
	UNIT-II OP-Amp, IC-555 & IC 565 Applications				
16	Introduction to Active filters	Types of filters, 1st and 2nd order filters, frequency responses of various filters	L16	T1-Ch7 (282-291) T2-Ch8 (290-293) R1-Ch3(106-109)	
17	Band pass filter	Transfer function of 1st and 2nd order BPF,; WBPF, NBPF	L17	T1-Ch7 (301-306) T2-Ch8 (308-313) R1-Ch3(109-114)	
18	Band rejection filters	Transfer function of 1st and 2nd order BRF, WBRF, Notch filter	L18	T1-Ch7 (306-311) T2-Ch8 (313-316) R1-Ch3(109-114)	GATE, IES
19	All pass filter	Transfer function, phase shift, problems	L19	T2-Ch8 (316-318) R1-Ch3(107-108)	
20	Low pass filter	Transfer function of 1st and 2nd order LPF, higher order LPF design	L20	T1-Ch7 (291-299) T2-Ch8 (293-301) R1-Ch3(109-114)	
21	High pass filter	Transfer function of 1st and 2nd order HPF, higher order HPF design	L21	T1-Ch7 (300-301) T2-Ch8 (301-307) R1-Ch3(109-114)	
22	Wave Form Generators	Triangular, Sawtooth waveform and Square Waveform generators	L22	T1-Ch7 (306-311) T2-Ch8 (313-316) R1-Ch3(109-114)	
23	IC 555 Timer, Functional block diagram	Pin diagram, block diagram, working principle	L23	T1-Ch8 (331-332) T2-Ch10 (417-421)	GATE, IES
24	Monostable operation and its applications	circuit diagram & its working principle pulse detector, ramp generator, frequency divider, PWM	L24	T1-Ch8 (332-340) T2-Ch10 (421-425)	

Aurora's Scientific, Technological and Research Academy

S. No.	Topics as per JNTU Syllabus	Sub-Topics	Lecture No.	Books Suggested Pg Nos.	Remarks
25	Astable operation and its applications, Schmitt trigger	Circuit diagram & its working principle FSK Generator, PPM, square wave oscillator, free running ramp generator	L25	T1-Ch8 (341-350) T2-Ch10 (425-430)	
26	IC 565 PLL block schematic diagram and	Basic principle, block diagram, phase detector, VCO, LPF	L26	T1-Ch9 (353-366) T2-Ch10 (430-437)	
27	PLL Description of individual blocks of 565 & Applications	Pin diagram, block diagram, working principle, lock In range, capture range	L27	T1-Ch9 (367-373) T2-Ch10 (437-441)	
		UNIT-III D-A AND A-D CONVERTERS			
28	Introduction, Basic DAC techniques & weighted resistor DAC	Types of converters, Types of DACs, circuit diagram and working principle of weighted resistor DAC	L28	T1- Ch10(382-384) T2- Ch9 (370-372) R1-Ch12(561-568)	GATE, IES
29	R-2R Ladder DAC, Inverted R-2R,	Circuit diagram and working principle of R-2R Ladder and inverted R-2R ladder	L29	T1- Ch10(385-393) T2- Ch9 (372-374) R1-Ch12(570-572)	
30	Types of ADCs, Parallel comparator type ADC	Types of ADCs, Circuit diagram and working principle of parallel comparator type ADC	L30	T1- Ch10(394-396) R1-Ch12(584--594)	
31	Counter type ADC, Successive approximation Register type ADC	Circuit diagram and working principle of counter type ADC and Successive approximation ADC	L31	T1- Ch10(396-400) T2- Ch9 (376-377) R1-Ch12(586-588)	
32	Dual slope ADC	Circuit diagram and working principle of Dual slope ADC	L32	T1- Ch10(401-404) R1-Ch12(593)	
33	Specifications of DAC, ADC	Resolution,, linearity error, accuracy, gain and offset error, monotonicity, settling time, stability	L33	T1- Ch10(404-408) R1-Ch12(561-566)	
		UNIT- IV DIGITAL INTEGRATED CIRCUITS			
34	Classification of Integrated Circuits	Digital IC's introduction,	L34	T3- CH1 (11) T3-CH11 (453 to 460) R2- CH1 (1 TO 16)	
35	Comparisons of Various logic families	Based on parameters like Speed Package Density Power consumption Fan-out etc.	L35	T3-Ch11 (487)	
36	CMOS Transmission gates	CMOS Transmission & logic gates construction	L36	T3-Ch11 (488)	



S. No.	Topics as per JNTU Syllabus	Sub-Topics	Lecture No.	Books Suggested Pg Nos.	Remarks
37	IC Interfacing	Interfacing TTL to CMOS	L37	R2-Ch4 (114)	
38	TTL Driving CMOS & CMOS driving CMOS	CMOS with TTL Circuits Interfacing CMOS to TTL	L38	R2-Ch4 (123 to 125)	
39	Combinational Logic IC 74XX and 40XX series Specifications	Use of TTL Logics Study Data sheets 74XX	L39	T3-Ch11 (454 to 491) R2-CH4 (108 to 110)	
40	Code converters	BCD to Seven segment decoder	L40	T3-Ch6 (236 to 238) R2-Ch6 (217 to 225)	
41	Decoders	Binary decoders 74x139 IC 74x138 IC	L41 L42	T3-CH6 (222 to 230) R2-CH6 (196 to 200) R2-CH6 (228 to 232)	
42	Encoders	Priority encoders 74x148 IC	L43	T3-Ch6 (231 to 235) R2-Ch6(226 to 228)	
43	Priority encoder	Simple dual priority encoder Dual priority encoder using 74x138 and 74x148s	L44	R2-CH6 (226 to 228)	
44	Multiplexers & Demultiplexers	Standard MSI multiplexers 74xx151 74xx157, Standard MSI demultiplexers	L45 L46	T3-Ch6 (238 to 246) R2-Ch6 (191 to 196) T3-Ch6 (247) R2-Ch6 (196 to 200)	
45	Priority generator and checkers	Priority generator and checkers	L47	T3-Ch6 (204 to 208) R2-Ch6(196 to 201)	
46	Parallel Binary Adders and Subtractor	Half adder, Full adder Ripple carry adder Carry look ahead adder 74X283 4-bit binary adder Subtraction using 2's complement system	L48 L49 L50	T3-Ch6 (208 to 217) R2-Ch6(201 to 211)	
47	Magnitude Comparators	Comparator structure, 74x85 and 74x682 ICs	L51	T3-Ch6 (218 to 221) R2-Ch6 (212 to 214)	
UNIT V: SEQUENTIAL CIRCUIT IC'S AND MEMORIES					
48	74XX & CMOS 40XX Series	RS Flip flop, JK Flip flop, JK Flip flop Master-slave Flip flop, D Flip flop, T Flip flop and their conversions	L52 L53	T3-Ch7 (266 to 294) R2-Ch7 (237 to 251)	

S. No.	Topics as per JNTU Syllabus	Sub-Topics	Lecture No.	Books Suggested Pg Nos.	Remarks
49	Synchronous	Decade counters, Ripple counters Synchronous counters	L54	T3-Ch8 (304 to 344) R2-Ch7 (273 to 326)	
50	Shift registers	Shift register structure MSI shift registers Serial/ parallel conversion Shift register counters Ring counters, Johnson counters and applications	L56	T3-Ch9 (354 to 381) R2-Ch7 (267 to 272)	
51	Memories- ROM Architecture	ROM Architecture and its internal block explanation	L57	T2-Ch10 (390 to 410)	
52	Types of ROMS & Applications	Different types of ROMs	L58	T2-Ch10 (411 to 413)	
53	RAM Architecture	RAM internal Architecture	L59	T2-Ch10 (420 to 428)	
54	Static & Dynamic RAMs	RAM Classifications	L60	T2-Ch10 (429 to 451)	

TEXTBOOKS:

1. Linear Integrated Circuits –D. Roy Chowdhury, New Age International (p) Ltd, 3rd Ed., 2008.
2. Digital Fundamentals – Floyd and Jain, Pearson Education,8th Edition, 2005.
3. Op-Amps and Linear Integrated Circuits – Concepts and Applications by James M. Fiore, Cengage/ Jaico, 2/e, 2009.

REFERENCES:

1. Modern Digital Electronics – RP Jain – 4/e – TMH, 2010.
2. Op-Amps & Linear ICs – Ramakanth A. Gayakwad, PHI, 1987.
3. Operational Amplifiers and Liner Integrated Circuits by K. Lal Kishore – Pearson, 2008.
4. Operational Amplifiers with Linear Integrated Circuits, 4/e William D.stanley, Pearson Education India, 2009.

Department of Electronics & Communication Engineering
Semester – II (2016-17)

Digital Communications Session Plan

S.No.	Topics as per JNTU Syllabus	Sub-Topics	Lecture No.	Suggested Books	Remarks
1	overview	Subject overview	L1		
2	Necessary Background	Analog communications Signals and systems	L2		
3	Model of Digital Communication systems	Information Source Modulator, Demodulator Decoder, Encoder	L3	T2, Ch1, 1-11 R1, Ch1, 4-11	
UNIT-I ELEMENTS OF DIGITAL COMMUNICATION SYSTEM					
4	Advantages of Digital Communication Systems	Advantages & Disadvantages of Digital Communication Systems	L4	T2, Ch1, 1-11 R1, Ch1, 4-11 R5,ch1,13	
5	Bandwidth-S/N tradeoff	Bandwidth-S/N tradeoff Hartley Shanon Law	L5	T1, Ch7, 522-523 R4, Ch8, 378-381	
6	Hartley Shanon Law & Sampling Theorem	Hartley Shanon Law & Hartley Shanon Law	L6	R2, Ch4. 141-146 R4, Ch1, 89-90	
7	Sampling Theorem	Sampling Theorem	L7	R2, Ch4. 141-146 R4, Ch1, 89-90	
8	PCM Generation and Reconstruction	PCM transmitter & receiver Band width	L8	T1,Ch5,212-226	GATE/ IES
9	Quantization noise	Uniform Quantization • MIDTREAD • MIDRISER • BIASED • SNR for PCM	L9	T2, Ch2, 529-549 T1, Ch2, 487-505 R2, Ch5, 172-210	
10	Non Uniform Quantization and Companding	Necessity of non uniform quantization A-Law companding μ-Law companding	L10	T1,Ch5,213-219	
11	DPCM	DPCM Example problems	L11	T1,Ch5,226-228	

S.No.	Topics as per JNTU Syllabus	Sub-Topics	Lecture No.	Suggested Books	Remarks
12	Adaptive DPCM	Adaptive DPCM	L12		
13	Delta Modulation	• Slope overload distortion • Granular noise • Signal to quantization noise	L13	T1,Ch5,229-232 T2,Ch10,539-546	
	Adaptive DM	Adaptive Delta Modulation	L14	T1,Ch5,232-236 T2,Ch10,543-54	
14	Noise in PCM and DM	Noise in PCM Noise in DM	L15	T1,Ch12,496-501	
UNIT-II DIGITAL MODULATION TECHNIQUES					
15	Digital modulation techniques	Introduction • ASK • PSK • FSK	L16	T1, Ch6, 249-282 T2, Ch8, 380-412 R2, Ch7, 273-357	GATE/ IES
16	ASK Modulator, Coherent ASK Detector, Non-Coherent ASK Detector	Coherent ASK Detector	L17	T2,Ch8,396-398	
		Non-Coherent ASK Detector	L18	T2,Ch8,398-402	
17	FSK, Bandwidth and Frequency Spectrum of FSK	FSK Transmitter Bandwidth and Frequency Spectrum of FSK	L19	T2,Ch8,408-412	
18	Non coherent FSK Detector, Coherent FSK Detector	Non coherent FSK Detector Coherent FSK Detector	L20	T2,Ch8,412-413	
19	FSK Detection Using PLL	FSK Detection Using PLL Signal space representations	L21	T1,Ch5,282-286	
20	BPSK, Coherent PSK Detection	Coherent PSK Detection	L22	T1,Ch5,250-255 T2,Ch8,396-398	
21	QPSK Differential PSK	QPSK Differential PSK	L23	T1,Ch6,259-266	
UNIT-III BASEBAND TRANSMISSION AND OPTIMAL RECEPTION OF DIGITAL SIGNAL INFORMATION THEORY					
22	Pulse shaping for optimum transmissions	Ideal Nyquist Raised cousine spectrum	L24	T2, Ch5, 189-193 R2, Ch6, 234-267	GATE/ IES

S.No.	Topics as per JNTU Syllabus	Sub-Topics	Lecture No.	Suggested Books	Remarks
23	A Baseband Signal Receiver, Probability of Error	A Baseband Signal Receiver, Probability of Error,	L25	T2, Ch5,193-196	
24	Optimum Receiver	Probability of Error, Transfer function	L26	T2, Ch5,197-201	
25	Optimal of Coherent Reception Signal Space Representation and Probability of Error	Probability of Error for ASK FSK PSK QPSK	L27 L28	T2, Ch8,3855-415	
26	Eye Diagrams, Cross talk	Eye Diagrams • ASK • PSK • FSK Cross talk	L29	T2,Ch5,237-240	
27	Information and entropy	Information Properties of entropy	L30	T1, Ch1, 511-527 T2, Ch3, 138-157	GATE/ IES
28	Conditional Entropy and redundancy	Joint entropy Conditional Entropy	L31	R2, Ch2, 13-51	
29	Shannon Fano coding	Shannon Fano coding Example	L32	T2,Ch4,155-162	
30	Mutual Information Information loss due to noise	Mutual Information Properties	L33	R5,ch14,716-720	
31	Source codings-Huffman Code	Huffman Code Example	L34,35	R5,ch14,735-738	
32	Variable length coding	Variable length coding	L36	R5,ch14,728-734	
33	Source coding to increase average information per bit	Source coding to increase average information per bit	L37	R5,ch14,728-734	
34	Lossy source coding	MPEG JPEG	L38	R1,ch6,323-327	
UNIT-IV ERROR CONTROL CODES					
35	Matrix description of Linear Block Codes	Linear Block Codes Matrix description of LBC	L39	T2, Ch9, 449-450 R5,Ch15,754-760	GATE/ IES

S.No.	Topics as per JNTU Syllabus	Sub-Topics	Lecture No.	Suggested Books	Remarks
36	Error detection and error Correction capabilities of linear block cods	Error detection and error Correction capabilities of linear block cods	L40	T2, Ch9, 450-454 R5,Ch15,760-763	
37	Cyclic Codes	Algebraic Structure Encoding, Syndrome Calculation, Decoding	L41,42	T2, Ch9, 461-471 R5,Ch15,763-772	
38	Convolution Codes Encoding,	Convolution Codes Encoding,	L43	T2, Ch1, 478-486 R5,Ch15,789-794	GATE/ IES
39	Decoding Using State Tree and trellis diagrams	Decoding Using State Tree Trellis diagrams	L44		
40	Decoding using Viterbi algorithm	Decoding using Viterbi algorithm	L45,L46	R5,Ch15,783-789	
41	Comparison of Error Rates in Coded and Uncoded Transmission	Comparison of Error Rates in Coded and Uncoded Transmission	L47	T2, Ch1, 478-496	
42	Problems	Problems on error control codes	L48		
UNIT-V SPREAD SPECTRUM MODULATION					
43	Introduction & Use of Spread Spectrum	Introduction & Use of Spread Spectrum	L49	T1, Ch16,738-75 R5,Ch17,856-859	
44	Direct Sequence Spread Spectrum (DSSS)	Effect of thermal noise Single tone interference	L50 L51	T1, Ch16,721-729	
45	Code Division Multiple Access	Code Division Multiple Access	L52	T1, Ch16,726-727 R5,Ch15,868-869	GATE/ IES
46	Ranging using DSSS	Ranging using DSSS	L53		
47	Frequency Hopping Spread Spectrum	Need for coding Near far problem Detection of FH/BFSK signal	L54	R5,Ch15,858 T2,Ch16,729-732	
48	PN-Sequences:	Generation Characteristics	L55 L56	R5,Ch15,860-863, T2,Ch16,733-739	
49	Synchronization in Spread Spectrum Systems	Acquisition DS & FH Tracking	L57	R5,Ch15,866-868 T2,Ch16,745-748	

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TEXT BOOKS:

1. Principles of communication systems – Herbert Taub, Donald L Schiling, Goutam Saha, 3rd Edition, McGrah-Hill, 2008
2. Digital and Analog Communication Systems – Sam Shanmugam, John Wiley, 2005

REFERENCES:

1. Digital Communications – John G. Proakis, Masoud salehi – 5th Edition, McGraw-Hill, 2008.
2. Digital Communication – Simon Haykin, Jon Wiley, 2005.
3. Digital Communications – Ian A. Glover, Peter M. Grant, 2nd Edition, Pearson Edu., 2008.
4. Communication Systems-B. P. Lathi, BS Publication, 2006.
5. Communication Systems- Sanjay Sharma

Department of Electrical & Electronics Engineering

Semester – I (2016-17)

Session Plan

Subject Name:POWER SYSTEM OPERATION & CONTROL
Class & Year :IV Year EEE Sem-I
Name of the faculty : P.Yellaiah

Topics in each unit as per JNTU syllabus	Modules / Sub-modules for each topic	Lecture No.	Text books / Reference Books	Remarks
Overview	Power system operation & control deals with economic operation of power systems,. hydrothermal scheduling, optimal power flow solution, load frequency control & reactive power control	L-1		
Applications and Extensions	It emphasizes on single area and two area load frequency control and reactive power control.	L-2		
Necessary Background	This course is an extension of power system-II	L-3		
UNIT-I				
Optimal operation & generators thermal power stations	Introduction to optimal operation and applications Different generating plants and differences	L-4	**T1:** 7.1 **R4:** 1.1	
Heat rate curve	Heat rate equation and importance of it	L-5	**T1:** 7.2 **R4:** 1.2	
Cost curve	Cost rate equation and importance	L-6	**T1:** 7.3 **R4:** 1.3	
Incremental fuel cost	Different types of incremental costs an importance	L-7	**T1:** 7.4 **R4:** 1.4	**GATE/IES**
			T1: 7.4 **R4:** 1.4	
Incremental production cost		L-8	**T1:** 7.5 **R4:** 1.5	
Incremental	Incremental production cost	L-9	**T1:** 7.5	**GATE/IES**

production cost			**R4:** 1.5	
Input output characterizations		L-10	**T1:** 7.6 **R4:** 1.6	
Optimum generation allocation with transmission line losses	Generation optimal conditions with losses and without	L-11	**T1:** 7.7 **R4:** 1.7	
Optimum generation allocation with transmission line losses		L-12	**T1:** 7.7 **R4:** 1.7	
Without losses			**T1:** 7.8 **R4:** 1.8	
Loss coefficients	Calculations for Loss coefficients	L-13	**T1:** 7.9 **R4:** 1.9	
Transmission line loss formula	Derivation and explanation	L-14	**T1:** 7.10 **R4:** 1.10	
TUTORIAL	problems	L-15	**T1:** Ch7 **R4:** Ch1	
UNIT-II				
Introduction to power systems	Introduction	L-16	**T1:** 7.11 **R4:** 1.11	**GATE/IES**
Optimal scheduling of Hydrothermal System..	Optimal scheduling Hydrothermal System	L17	**T1:** 7.12 **R4:** 1.12	
Hydroelectric Power plant models.	Hydroelectric Power plant models.	L-18	**T1:** 7.13 **R4:** 1.13	
Scheduling problems	Scheduling problems	L-19	**T1:** Ch7 **R4:** Ch1	
Shorter Hydrothermal scheduling problem		L-20	**T1:** Ch7 **R4:** Ch1	
TUTORIAL		L-21		
UNIT-III				
Block Diagram	Block Diagram importance	L-22	**T1:** 7.11 **R4:** 1.11	
Synchronous machine modeling	Introduction to Synchronous machine Modeling	L-23	**T1:** 7.12 **R4:** 1.12	
Swing equation State space model of	Swing equation State space model of	L-24	**T1:** 7.13 **R4:** 1.13	

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synchronous machine	synchronous machine			**GATE/IES**
Mathematical modeling	Mathematical modeling	L-25	**T1:** Ch7 **R4:** Ch1	
Derivation of Transfer function	Derivation of Transfer function	L-26	**T1:** Ch7 **R4:** Ch1	
Fundamental Characteristics	Fundamental Characteristics	L-27	**T1:** 7.11 **R4:** 1.11	
Transfer function	Transfer function	L-28	**T1:** 7.12 **R4:** 1.12	
IEEE type one model	Block Diagram Representation	L-29	**T1:** 7.13 **R4:** 1.13	
UNIT-IV				
Necessity of keeping frequency constant	frequency constant and variation in power systems	L-30	**T1:** 8.1	**GATE/IES**
Definitions of control area	Definitions of control area	L-31	**T1:** 8.2	
Single area control	Single area control	L-32	**T1:** 8.3	
Block diagram of PS	Block diagram of PS	L-33	**T1:** 8.4	
Study state analysis	Study state analysis	L-34	**T1:** 8.4	
Dynamic response	Dynamic response	L-35	**T1:** 8.5	
Uncontrolled case	Uncontrolled case	L-36	**T1:** 8.6	
TUTORIAL	problems	L-37	**T1:** 8.1	
2 area system	2 area system	L-38	**T1:** 8.6	
Load frequency control of 2 area system	Load frequency control of 2 area system	L-39	**T1:** 8.7	
Uncontrolled	Uncontrolled	L-40	**T1:** 8.8	
Controlled case	Controlled case	L-41	**T1:** 8.9	
Tie line bias control	Tie line bias control	L-42 L-43	**T1:** 8.10	
Tutorial	Problems	L-44		
P+I control block single area	Importance of P and I and D controllers	L-45	**T1:** 8.11	**GATE/IES**
P+I control block diagram	P+I control block diagram	L-46	**T1:** 8.11	
Study state response	Steady state response	L-47	**T1:** 8.12	
Load frequency control	Load frequency control	L-48	**T1:** 8.13	
Economic dispatch control	Economic dispatch control	L-49	**T1:** 8.14	
TUTORIAL	Problems	L-50		

UNIT-V				
Over view	Over view of compensations	L-51		GATE/IES
RPC in transmission system	RPC in transmission system	L-52	**T3:** 3.2	
Compensation intromission systems	Compensation intromission systems	L-53	**T3:** 1.3	
Types of compensating equipment in transmission lines	Types of compensating equipment in transmission lines	L-54	**T3:** 3.3	
Advantages Disadvantages	Advantages Disadvantages	L-55	**T3:** 3.4 **R3:** 3.5	
Load compensation	Loaf compensation	L-56	**R2:** 2.1	
Specifications	Specifications	L-57	**T3**: 2.2	
Uncompensated of Compensated transmission lines	Uncompensated of Compensated transmission lines	L-58	**T3 :** 1.4	
Shunt compensation	Shunt compensation	L-59	**T3 :** Ch4	
Series compensation	Shunt compensation	L-60	**T3 :** Ch4	
TUTORIAL	Problems	L-61		

SUGGESTED BOOKS

T1:I.J.Nagrath & D.P. Kothari **"Modern Power system Analysis"** Tata M Graw – Hill Publishing Company Ltd. 2nd edition

T2: C.L.Wadhwa, **"Electrical Power systems"** New Age International (P)Limited, Publishers, 2nd edition, 1998.

T3: T.J.E.Miller, **"Reactive Power Control in Electric Systems"** John wiley & sons.

R1: A.J.Wood and B.F.Wollenberg **"Power Generation Operation and Control"** John Wley & sons, Inc., 1984

R2: O.I.Engerd. **"Electric energy systems Theory"** Tata McGraw –Hill Publishing Company Ltd., Second edition.

R3: B.M.Weedy, B.J.Chary **"Electric power systems"** 4th Edition John Wiley.

R4: L.K.Kirchmayer, **"Economic Operation of Power systems"** Wiley Eastern Ltd.

Autonomous Scientific Technological and Research Academy

Department of Electrical & Electronics Engineering

Semester – II (2016-17)

Session Plan

Programme : B.TECH
Year : III Year **Semester:** II Sem
Subject Name: Electrical and Electronics Instrumentation **Code:** A60223
Faculty Name: Ganji Srikant
Designation : Sr.Asst. Professor

Sl No	Topics as per JNTU syllabus	Modules/sub modules for each Topic.	Lecture No	Text Books/ Reference Books	Remarks
1	**Overview**	Its is aimed to introduce to the students the principles and application of Control System	**L1**		
2	**Applications and Extensions**	The significance of the course is it is an important aspect of installation, operation and performance qualifications respectively of any electrical system	**L2**		
3	**Necessary Background**	measurement of electrical functions like voltage, current, power, energy, frequency, magnetic flux and magnetic intensity	**L3**		
		UNIT – I			
4	**Introduction to Measuring instruments**	Introduction and overview of syllabus	L4	JNTU Syllabus	
		Classification: Absolute & Secondary. Null & deflection type. Analog and Digital. D.c., a.c., a.c& d.c. Indicating, recording and integrating. Based on magnetic, thermal, electrostatic, electromagnetic and hall effects	L5	**T1: Ch17(**634-635) **T2:Ch1** (6-9)	GATE IES
	Deflecting and controlling torques	Operating forces: deflecting, controlling,	L6	**T1**: Ch17(635-636) **T2:** Ch7(22-230)	
		General construction details: Controlling and Damping Systems		**T1: Ch17(**636-646) **T2:** Ch7((230-235)	

	PMMC instruments	Ammeter and Voltmeter: PMMC construction ,deflecting and controlling torque	L7	**T1: Ch18(**665-674) **T2: Ch7(235-240)**	
		Ammeter and Voltmeter: PMMC Effect of temperatures, errors and compensation, extension of range and sensitivity		**T1: Ch18(**657-658), (710-716) **T2:Ch9**(292-300)	
	MI instruments	MI Instruments; Construction, deflection and control torque	L8	**T1:Ch18(** 658-660) **T2:** Ch9(300-3110	
		MI Instruments; Errors, Extension of range. Adv. and Disadvantages .of MI instruments		**T1: Ch18(**660-665), (710-716) **T2:** Ch9(312-323)	
	Extension of range of Electrostatic voltmeters	Electrostatic Meters: force and torque eqns, Quadrant type and Attracted disc type and extension of range	L9	**T1: Ch18(**681-692) **T2:** Ch9(325-345)	
	ACTIVITY 1	GROUP DISCUSSION	L10		
	ACTIVITY 2	POSTER PRESENTATION	L11		
	ACTIVITY 3	QUIZ -1	L12		
		UNIT – II			
2	**POTENTIOMETERS & INSTRUMENT TRANSFORMERS**	Principle and operation of D.C Crompton's potentiometer	L13	**T1:Ch15**(265) **T2:** Ch10(384-390)	GATE IES
		standardization – Measurement of unknown resistance		**T1:** Ch19(716-720) **T2:** Ch10(390-397)	
		Measurement of current, Voltmeter	L14	T1:Ch19(721-735) T2:Ch10(400-406)	
		A.C. potentiometers polar and coordinate type standardization		T1:Ch19(735-743) T2:Ch10(411-418),	
		applications	L15	T1:Ch19 (743-761) T2:Ch10(390-410)	
		Problems	L16		
	CT & PT	CT and PT – Ratio and phase angle errors.	L17	T1:CH22 (872-877) T2:CH13 (495-500)	

		NUMERICALS	L18		
	ACTIVITY 1	GROUP DISCUSSION	L19		
	ACTIVITY 2	POSTER PRESENTATION	L20		
	ACTIVITY 3	QUIZ -2	L21		
		UNIT- III			
3.	**MEASUREMENT OF POWER & ENERGY** LPF and UPF	Single phase dynamometer wattmeter LPF and UPF	L22	T1:CH20 (779-789) T2:Ch11 (430-440)	GATE IES
	Extension of wattmeter	double element and three element dynamometer wattmeter, expression for deflecting and control torques Extension of range of wattmeter using instrument transformers	L23	T1:CH20 (768-770) T2:CH11(442-444)	
	Active power measurement	measurement of active and reactive powers in balance and unbalanced system.	L24	T1:CH20(799-804), 772-779 T2:CH11 (445-450)	
	Reactive power measurement	Measurement of reactive power	L25	T1:Ch20 (804-805) T2:CH11 (453-457)	
		problems			
4	**MEASUREMENT OF ENERGY**	1-phase induction type energy meters: Construction, theory & operation	L26	T1:CH21 (821-822) T2:CH12 (463-470)	GATE IES
	Induction type energy meter	1-phase induction type energy meters: Different adjustments	L27	T1:Ch21 (822-824) T2:CH12 (473-478)	
	Driving and breaking torques	1-phase induction type energy meters: Errors 1-phase induction type energy meters: Phantom loading test	L28	T2:CH12 (478-486)	
	3-Ph energy measurements	3-phase energy meters, maximum demand indicators & trivector meter	L29	T1:CH21 (824-825,841-849,851-852) T2:CH12 (486-490)	
		problems			
	ACTIVITY 1	GROUP DISCUSSION	L30		
	ACTIVITY 2	POSTER PRESENTATION	L31		
	ACTIVITY 3	QUIZ -3	L32		
		UNIT – IV			
5	**D.C & A.C BRIDGES**	Methods of measurement of low resistance	L33	T1:CH8 (341-343) T2:CH15 (558-563)	

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		Kelvin's Double Bridge		T1:CH8 (344-345) T2:CH15 (564-572)	GATE IES
	Resistance measuerment	Methods of measurement of medium resistance	L34	T1:CH8 (354-357) T2:CH15 (574-580)	
	sensitivity	Wheatstone Bridge method		T1:Ch8 (359-360) T2:CH15 (582-584)	
		NUMERICALS		T2:CH15 (581)	
	Medium resistance	Methods of measurement of medium resistance	L35	T1:CH8 (360-367) T2:CH15 (573)	
		Carey Foster slide wire bridge	L36	T1:Ch8(367-368) T2:CH15 (570)	
		Measurement Of High Resistance: Loss of charge method		T1:CH8 (368-369) T2:CH15(572)	
		problems	L37		
6	Measurement of inductance factor	maxwell's beidge	L38	T1:CH7 (286-290) T2: CH 14 (516-520)	
		Hay's bridge.	L39	T1: CH 7 (290-295) T2: CH 14(520-524)	
		Anderson's bridge		T1CH7(:297-298) T2: CH 14(524-528)	
		Owen's bridge	L40	T1: CH 7 (298-303) T2: CH 14 (529-533)	GATE IES
	Measurement of capacitance and loss angle	De Sauty Bridge, Schering Bridge	L41	T1: CH 7 (304-306) T2: CH 14 (534-538)	
		Wein'sBridge.		T1: CH 7 (315-319) T2: CH 14 (539-544)	
	ACTIVITY 1	GROUP DISCUSSION	L42		
	ACTIVITY 2	POSTER PRESENTATION	L43		
	ACTIVITY 3	QUIZ -4	L44		
		UNIT – V			
7	**Transducers and oscilloscopes** Definition, Classifications and advantages	Introduction, transducer definition, Different types of transducers, Primary transducers and secondary transducers, passive and active transducers	L45	**T3**: 25.6 **T4** : 25.8	GATE IES
	Characteristics of transducers and selection of transducer	Characteristics of transducers, input characteristics, transfer characteristics and output characteristics, factors influencing the choice of transducers	L46	**T2** : 25.9	
	Resistive transducers	Passive Electrical transducers, Resistive transducer working principle,	L47	**T3** : 6.1	

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		applications, Hot wire resistance transducer, Resistive displacement transducers, resistive strain transducers, resistive pressure transducers, resistive moisture transducers, resistive optical radiation transducers.			
	Inductive Transducers	Working principle of Inductor Transducer, Inductive thickness transducers, inductive displacement transducer, movable core type inductive transducers, eddy current type transducer.	L48	**T3** : 6.2	
	Capacitive Transducers	Working principle of Capacitor transducers, capacitive thickness transducer, capacitive displacement transducer, capacitive moisture transducer.	L49	**T3** : 6.3 **T4** : 25.28	
	LVDT and Applications	Working principle of LVDT transducer and Applications		**T3** - 6.23 **T4** : 25.24 **T4** : 25.24.3	
	Strain gauge and its principle of operation, Gauge factor	working principle, types of strain gauges, operation resistive strain gauges, Bonded wire and Unbonded metal stain gauges, gauge factor		**T3** : 6.14 **T4** : 25.17	
	Thermistors, Thermocouples, Synchros	Thermistor working principle and operation, thermocouple construction, working principle and operation, rotary variable differential transformer, synchros construction operation.	L50	**T3** : 7.1 **T4** : 25.26	
8	photovoltaic, photo conductive cells, photo diodes	Photo electric phenomenon, photo conductive transducer construction and operation, photovoltaic transducer construction and operation, photo diode transducer construction and operation.	L51	**T3** : 7.6	GATE IES
	Cathode ray oscilloscope	Introduction, Basic Principle, Cathode ray tube construction, Characteristics	L52	**T3** : 21.1 **T3** : 21.2	

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		of CRO, Types			
		time base generator block diagram and operation, Vertical amplifier block diagram and operation	L53		
	Applications of CRO	Measurement of phase and frequency using CRO by luscious patterns	L54	**T3** : 21.13 **T3** : 21.14.1 **T3** : 21.20	
	Sampling oscilloscope	Analog and Digital	L55	**T3** : 21.14.2 **T3** : 21.26.2 **T3** : 21.22	
	ACTIVITY 1	GROUP DISCUSSION	L56		
	ACTIVITY 2	POSTER PRESENTATION	L57		
	ACTIVITY 3	QUIZ -5	L58		

TEXT BOOKS and References

T1: E.W. golding and F.C Widdis ***"Electronic Measurement and Instrumentation"*** fifth edition, Wheerler Publishing.

T2: A.K. Sawhney ***"A course in Electrical and Electronic Measurement and Instrumentation"*** 17th Edition Dhanpath Rai Education and Technical publishers.

T3 : A.K.Sawhney, ***"A course in Elect. & Electronic Measurements & Instrumentation"*,** Dhanpatrai & Sons 1999

T4 : D.V.S Murthy, ***"Transducers and Instrumentation"*** , Prentice Hall of India 2007

Department of Mechanical Engineering
2016-17

Session Plan

Programme : B.TECH

Year : IV Semester: I

Subject Name : CAD/CAM Code: A70328

Faculty Name : Mr. CHANDRA SHEKAR GOUD

Designation : ASSOCIATE PROFESSOR

S.no	Topics as per the JNTU syllabus	Sub-Topics	Lecture No.	Suggested Books (Page. no.s)	Remarks
1.	**Overview**	**Subject Overview Unit wise**	**L1**		
2.	**Application and Extensions**	**CAD/CAM**	**L2**		
UNIT 1(A): FUNDAMENTALS OF CAD/CAM					
3.	CAD/CAM Basics	• Fundamental of CAD/CAM	L3	R2(3,4)	Design Field
		• Automation	L4	T1(29)	
4.	Design process	• Cad Design	L5	R2(25)	
		• Applications	L6	R2(38)	
5	Applications for computers for design	• Role of computers in design field	L7	T1(80)	
		• Applications of computers in design field	L8	T1(81)	
6	Benefits of CAD	• Industrial and domestic benefits	L9	T1(88)	
7	Computer configuration for CAD application	Computer configuration –basics	L10	R2(35)	Design And As Entrepreneur
		Configurations for CAD installation	L11	R2(36)	
8	Coputer peripherals for CAD	• Computer peripherals for CAD	L12	R2(38)	
		• Examples of some systems	L13	R2(39)	
9	Design Workstation	• Design Workstation –basics	L14	T1(102)	
10	CAD Software	• System software and application software-definitions	L15	R2(82)	
			L16	R2(82)	
UNIT 1(B): WIRE FRAME MODELLING					
11	Wire frame modeling	• 3D Wireframe modeling-entities with definitions	L17	R2(137)	Working with software
		• Interpolation and approximation of curves	L18	R2(269)	

S.no	Topics as per the JNTU syllabus	Sub-Topics	Lecture No.	Suggested Books (Page. no.s)	Remarks
12	CURVES	• Concept of parametric and non parametric representation of curves	L19	R2(268)	
		Definition of Cubic spline • Bezier • B-Spline	L20	R2(200)	
UNIT II (A): SURFACE MODELLING					
13	Representation of models	• Algebraic and geometric representation.	L21	R2(218)	Working with complex models
		• Parametric space	L22	R2(335)	
		• Blending functions.			
		• cylindrical surface	L23	R2(336)	
		• ruled surface			
		• Spherical surface • composite surface	L24	R2(340)	
		• Bezier surface	L25	R2(340)	
14	Representation of models Complex	• Regenerative and pathological conditions	L26	R2(340)	
UNIT II(B) : SOLID MODELLING					
15	Solid modeling	• Definition of cell composition and spatial occupancy	L27	R2(320)	Working with software's
16	Sweep –basic concepts	• Representation of sweep	L28	R2(398)	
		• Applications	L29	R2(401)	
17	Solid geometry	• Concept • Constructive solid geometry	L30	R2(411)	Working with software's
		• Applications	L31	R2(411)	Working with software
18	Boundary representation	• Definition of boundaries	L32		
		• Mode of representing boundaries	L33		
UNIT III: NC PRODUCTION CONTROL SYSTEMS					
19	Numeric Control	Numeric Control • Elements of NC system • NC Part Programming • Methods of NC part programming • Manual Part Program	L34	T1(175)	Design
			L35	T1(179)	
			L36	T1(179)	
20	Computer Assisted Part Programming	• Computer Assisted Part Programming	L37	T1(354-355)	

S.no	Topics as per the JNTU syllabus	Sub-Topics	Lecture No.	Suggested Books (Page. no.s)	Remarks
		• Post processor			
		• Applications			
21	Programming language	• SPPL- A simple programming language	L38	T1(201)	
		• CNC and DNC adaptive control systems	L39	T1(232,239)	
UNIT IV(A): GROUP TECHNNOLOGY					
22	Group technology	• Part families	L40	T1(297,298,301,328)	Manufacturing
		• Part classification and coding			
		• Product flow analysis			
		• Machine call design			
UNIT IV(B):COMPUTER AIDED PROCESS PLANNING					
23	CAPP	• Computer aided process planning	L41	R2(770,774,776)	Manufacturing
		• Difficulties in traditional process planning			
		• Retrieval type and generative type			
		• Machinability data systems			
UNIT IV(C): COMPUTER AIDED MANUFACTURING RESOURCE PLANNING					
24	Computer Aided Manufacturing Resource Planning	• Material Resource Planning Inputs to MRP	L42	T1(345,364,369,373)	Manufacturing
		• MRP output Records			
		• Benefits of MRP • Enterprise Resource Planning Capacity requirement planning	L43		service
UNIT V(A) : FLEXIBLE MANUFACTURING SYSTEMS					
25	Flexible Manufacturing Systems	• FMS Equipment	L44	R2(703,793)	Manufacturing
		• FMS Layouts			
		• Analysis Methods for FMS			
UNIT V(B): COMPUTER AIDED QUALITY CONTROL					
26	Automated Inspection	• OFF Line	L45	T1(28-31)	Quality and Robotics
		• ON Line			
		• Contact			
		• Non-Contact			
27	Coordinate Measurement Machine	• CMM	L46		Manufacturing
		• TYPES			
		• Applications			

S.no	Topics as per the JNTU syllabus	Sub-Topics	Lecture No.	Suggested Books (Page. no.s)	Remarks
		• Machine Vision			
UNIT V(C):COMPUTER INTEGRATED MANUFACTURING					
28	Computer Integrated Manufacturing	• CIM system • Benefits of CIM	L47	T1(463-480)	Manufacturing

TEXT BOOKS:

T1: CAD/CAM /Groover M.P.I Pearson education.

T2: CAD/CAM Concepts and Applications! Alavala? PHI.

REFERENCES:

R1: CAD/CAM Principles and Applicatiofls/P.N.Ra0/ TMH.

R2:CAD I CAM Theory and Practice! Ibrahim Zeid TMH.

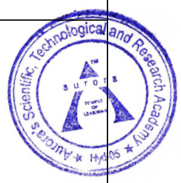
R3: CAD I CAM I CIM/RadhakriShflafl and Subramanian! New Age.

R4: Principles of Computer Aided Design and Manufacturing! Farid Amirouchel Pearson.

Department of Mechanical Engineering
2016-17
Session Plan

Programme : B.Tech
Year : III
Semester : II
Subject : DMM-II
Code : A60329
Faculty Name : Sushma P
Designation : Assistant Professor

SNO	Topics As Per JNTU Syllabus	SUB TOPICS	Lecture No.	Date	Suggested Books(Page Nos)	Remarks
1	Overview	Subject Overview Unit Wise	L1			
	UNIT -1		**BEARINGS**			
2	Introduction of bearings	Introduction Types of bearings Classifications of bearings Applications	L2 L3		R4(17.1-17.2) R4 (17.4-17.5) P1(557-558)	
3	Types of Journal Bearings	Full Journal bearing Partial Journal Bearing	L4		R4 (17.2-17.3) P1(591)	
4	Basic mode of lubrication	Lubrication Properties Clearance ratio and Bearing modulus Heat dissipation of bearings	L5 L6		R4(17.6-17.10) P 1 (590) P1 (614) P1 (596-597) P1 (599)	
5	Bearing materials.	Bronze Cast Iron Silver Babbitt material	L7 L8		R4(17.5-17.6) P1 (624)	
6	Journal Bearing	Design procedure Design of hydrodynamic journal bearing Problem of Journal Bearing	L9 L10		P1 (613) R 4 (17.11-17.16) R4(17.18-17.19) R4 (17.27-17.38)	
7	Ball and Roller bearing	Introduction Advantages, Disadvantages and applications. Types of radial ball bearing Types of roller bearing Life of bearing	L 11 L12		R4(18.1-18.5) R4(18.9) P1 (556-559)	



8	Bearing load	Static and dynamic load Calculations of bearing load in gear drives, Calculations of a bearing load in belt drives.	L13 L14		R4(18.10-18.12) P1 (561) P1 (563)	
9	Equivalent radial load	Combined bearing load, Design of variable loading, Problems	L15		P1 (566) R4(18.18-18.19)	
10	Design considerations	Design consideration Design and selection of ball and roller bearing, Problems	L16 L17		R4 (18.15-18.18) R4 (18.31-18.45)	
	Unit –II Design of IC Engine Parts					
11	I.C. engine parts	Introduction Classification of IC engines Terminology Working of IC Engine Design of IC engine	L18 L19		P1(802-804) R4(13.1-13.7)	
12	Connecting rod	Introduction Forces on connecting rods & inertial load, design of connecting rod, connecting rod inertia effects on connecting rods, Problems on connecting rod.	L20 L21 L22 L23		R4 (14.9-14.10) R4 (14.13-14.15) R4 (14.18) R4(14.18-14.27) P1(825-836)	
13	Crank shafts	Introduction Types of crank shaft Design of overhung crank shafts, crank pin, crank shaft bearings, crank web, Problems	L24 L25		R4 (15.1) R4 (15.1-15.2) R4 (15.2-15.3) R4 (15.11-15.12) R4(15.12-15.24) P1(837-847)	
14	Piston	Introduction, Materials and structure and colum analysis. Formulas used for designing piston rod.	L26		R4 (14.1-14.2) R4 (14.2-14.3)	
15	Forces acting on piston	Euler's formula Rankin's formula Johns Formula	L27		R4(14.4-14.7) P1(812-825)	

16	Design of piston	Design procedure Problems on piston	L28 L29		P1(812-825) R4(14.7-14.8)	
	UNIT-3 POWER TRANSMISSION SYSTEMS AND PULLEYS					
17	Transmission of power by belt and rope ways.	Introduction, transmission effiency,	L30		R4(21.1)	
18	Belts	Introduction Classification of belts Types of belts, Materials used for belts Advantages and Disadvantages	L31		R4(21.3) R4 (21.3-21.4) R4 (21.5-21.6) R4(21.5) P1(495-498)	
19	Flat belts	Introduction Types of flat belts Working characteristics design consideration Design of flat belts Problems	L32 L33 L34		R4(21.6) R4(21.7-21.8) R4(21.9-21.13) R4(21.13-21.19) R4(21.19) R4(21.24-21.34) P1(508-516)	
20	V-belts	Introduction Materials Design of v belts, Advantages and Disadvantages, Problems on v-belts	L35 L36 L37		R4(22.1) R4(22.2-22.3) R4(22.4) R4(22.19-22.27) P1(516-533)	
21	Ropes	Introduction, construction, Designation, stresses in ropes, Design of wire ropes, selection procedure, Problems on wire rope	L38 L39		R4(24.1-24.4) R4(24.6) R4(24.13-24.14) R4(24.17-24.24) P1 (787-793)	
22	Pulleys	Introduction, Materials, Types of pulleys, Design of pulleys Problems	L40		P1 (511-518)	
23	Materials	Materials for flat pulley Materials for V-Pulleys Design of CI pulleys Problems on V-pulleys	L41		R4 (21.20-21.24) R4(21.24-21.34)	
		Introduction, Advantages, disadvantages Classification and components,	L42 L43		R4 (23.1-23.8) R4(23.6-23.8) R4 (23.20-23.25)	

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24	Chain Drives	roller chains, design of chain drives, problems on chain drives			P1(537-554)	
UNIT-4 GEARS						
25	Gears	Introduction Types of gears Classification of gears Terminology of gears Nomenclature of gears	L44		R4(25.1-25.7) R4(25.8-25.10) P1(635-641)	
26	SPUR GEARS	Introduction Load Concentration Factor Design of spur gear dynamic load factor Analysis of spur gear check for plastic deformation Check for dynamic deformation Problems on spur gears	L45 L46 L47		R4(25.29-25.25.50) R4 (25.53-25.57) R4 (25.60-25.84)	
27	Helical gear	Introduction Load concentration Factor, dynamic factor, analysis of helical and bevel gear, check for plastic deformation, check for dynamic and wear consideration, problems on helical	L48 L49 L50		R4(26.1-26.2) R4(26.5-26.6) R4(26.7-26.9) R4(26.9-26.16) P1(680-682)	
28	Bevel gear	Introduction Strength of bearing gear Construction details Bearing loads AGMA Equation factors Design procedure Problems on bevel gears	L51 L52		R4(27.1-27.4)) R4(27.4-27.6) R4 (27.6-27.10) R4(27.10-27.17)	
29	Worm gear	Introduction Properties of worm gear selection material, strength and wear rating of worm gear, force analysis and friction in worm gears, Problems	L53 L54 L55 L56		R4(28.1-28.4) R4(28.5-28.7) R4(28.12-28.13) R4 (28.13-28.23)	

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	UNIT-5 DESIGN OF POWER SCREWS					
30	Design of screw	Introduction	L57		R4 (31.1-31.15) R4(31.16-31.17) R4(31.17-31.31) P1(186-190) P1(197-199)	
		Materials				
		Form of threads				
		Force analysis and types of threads				
		Nomelcture of screw				
		Working principle	L58 L59			
		Design consideration				
		Design of power screw				
		Problems on design of screw				
31	Design of Nut	Introduction	L60		R4(8.1) R4(8.18) P1(192-212)	
		Height of nut				
		Length of nut				
		Energy loss in nut				
		Problems on nut				
32	Compound Screw	Introduction	L61		P1(219-222)	
		Torque				
		Friction				
		Effiency				
		Problems on compound screw				
33	Differential Screw	Introduction	L62		P1(219-222)	
		Torque calculation				
		Effiency calculation				
34	Ball Screw and failures	Introduction	L63		P1(222-223)	
		Advantages				
		Loading of Ball screws				
		Applications				

Text Books:

1. Machine Deign/Pandya & Shah/ Charotar Publishing House Pvt.
2. Machine Design/ PV Soundaryarajan Murthy and N. Shanmugam/ Anuradha Publishers.

Reference Books:

1. Design of Machine Elements/ V M Faires.
2. Machine Design/ Schaum Series.
3. Mechanical Engineering Design/ JE Shigley.
4. Machine Designs/ Md. Jalaluddin / Anuradha Publishers.
5. Machine Design/ UC Jindal/Pearson
6. Design of Machine Elements (vol 1)/ T.Krishna Rao/ IK International Publishing house/ 2nd Edition.

Preferred Books

1. Design of Machine Elements /VB Bhandari/ 4th Edition

Authors Scientific, Technological and Research Academy