

Lesson Plan for the even sem – 2017

Semester – 6

**Subject Code: 10CV61**

**Subject Name: ENVIRONMENTAL ENGINEERING I**

**SEMESTER : VI Sem A and B sec**

**NAME OF THE FACULTY : Ms.Bhavya K.**

**BRANCH : CIV**

**DATE OF COMMENCEMENT: 13-02-2017**

**SUBJECT : ENVIRONMENTAL ENGG I**

**DATE OF CLOSING : 24-05-2017**

**SUBJECT CODE: 10CV61**

**CLASS STRENGTH : 53**

**NO OF HRS/ WK: 5**

**TOTAL HRS : 62**

Session No	Chapter no (No of hrs planned for the chapter)	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	1/1	<b>UNIT – 1</b> Human activities and environmental pollution.	Chalk & Board		12.5%
2	2/1	Water for various beneficial uses and quality requirement. Need for protected water supply	”		
3	3/1	Demand for water: Types of water demands- domestic demand in detail, institutional and commercial, public uses, fire demand. Per capita consumption ,factors affecting per capita demand,	”		
4	4/1	Variations in demand of water. Fire demand – estimation by Kuichling’s formula, Freeman formula & national board of fire underwriters formula	”		
5	5/1	Peak factors, design periods & factors governing the design periods	”		
6	6/1	Problems on quantity of water supply based on various types of demand	”		
7	7/1	Population forecasting, different methods with	”		

		merits & demerits.			
8	8/1	Problems on population forecasts	„	<i>Class test</i>	
9	1/2	<b>UNIT – 2</b> Surface and subsurface sources types and classification	PPT		25%
10	2/2	Suitability of different sources with regard to quality and quantity.	Chalk & Board		
11	3/2	Collection of water from sources using Intake structures ,selection of location for intake structure ,River intake	PPT		
12	4/2	Reservoir intake, canal intake with diagrams	PPT		
13	5/2	Conveyance of water :open conduits and closed conduits	Chalk & Board		
14	6/2	Pumps- Necessity power of pumps; factors for the selection of a pump	Chalk & Board		
15	7/2	Types of pumps: Reciprocating , centrifugal	„		
16	8/2	Problems on pumps	„		
17	9/2	Pipes – Design of the economical diameter for the rising main; Nomograms	„		
18	10/2	Pipe appurtenances: valves	„		
19	11/2	Pipe apurtenances: pipe fittings	„	Assignment -1	
20	1/3	<b>UNIT – 3</b> Objectives of water quality management. Whole someness & palatability,	Chalk & Board		37.5%
21	2/3	Water borne diseases.	„		
22	3/3	Water quality parameters – Physical, chemical	„		
23	4/3	Water quality parameters – Microbiological	„		
24	5/3	Sampling of water for examination. Water quality analysis (IS: 3025 and IS: 1622) using analytical and instrumental techniques.	„		
25	6/3	Drinking water standards BIS & WHO guidelines. Health significance of Fluoride, Nitrates and heavy metals like Mercury	Chalk & Board		
26	7/3	Health significance of Cadmium, Arsenic etc. and toxic / trace organics	„	<i>Class test</i>	
27	1/4	<b>UNIT – 4</b> Water treatment: Objectives, Treatment flow-chart.	„		50%
28	2/4	Aeration-Principles, types of Aerators.	PPT		

29	3/4	Sedimentation theory of it	„		
30	4/4	Settling tanks, types, design	Chalk & Board		
31	5/4	Problems on design of settling tanks	„		
32	6/4	Coagulant aided sedimentation theory	„		
33	7/4	Types of coagulants	„		
34	8/4	Problems on sedimentation using coagulants	Chalk & Board		
35	9/4	Method to obtain optimum dose of coagulant, jar test	„		
36	10/4	Chemical feeding, flash mixing,	„		
37	11/4	Clari flocculator principle and working	„	Assignment -2	
38	1/5	<b>UNIT - 5</b> FILTRATION: Mechanism – theory of filtration	PPT		
39	2/5	Types of filters, construction, operation, cleaning and design of slow sand filter	Chalk & Board		
40	3/5	Construction, operation, cleaning and design of rapid sand	„		62.5%
41	4/5	Construction, operation, cleaning and design of pressure filters	„		
42	5/5	Back washing of filters	„		
43	6/5	Operational problems in filters	„		
44	7/5	Design problems on filters	„	Class test	
45	1/6	<b>UNIT – 6</b> Theory of disinfection, types of disinfection,	„		
46	2/6	Chlorination, chlorine demand, residual chlorine,	„		
47	3/6	Use of bleaching powder.	„		75%
48	4/6	Problems on chlorine demand	„		
49	5/6	UV irradiation treatment – treatment of swimming pool water			
50	6/6	Softening – definition, methods of removal of hardness: Lime soda process			
51	7/6	Zeolite process , Demineralization process		Assignment -3	
52	1/7	<b>UNIT – 7</b> Removal of color, odor, taste	„		
53	2/7	Use of copper sulfate, Adsorption technique	Chalk & Board		87.5%
54	3/7	Method of fluoridation	„		

55	4/7	Distribution System of supply	„		
56	5/7	Service reservoirs and their capacity determination	„		
57	6/7	Problems on capacity determination	„		
58	7/7	Methods of layout of distribution systems	„		<i>Class test</i>
59	1/8	<b>UNIT – 8</b> Different types of manholes	„		
60	2/8	Types of fire hydrants	„		
61	3/8	Different types of Pipe fittings	„		
62	4/8	Layout of pipes in buildings	„		Assignment -4

100%

### Syllabus for Internal Assessment Tests (IAT)\*

Sessional #	Syllabus
T1	Class # 01 – 26
T2	Class # 27 – 51
T3	Class # 52 - 62

\*: See calendar of events for the schedules of IATs.

### Literature:

Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Text Book	TB1	S.K GARG WATER SUPPLY ENGINEERING	Twentieth edition,	81-7409-120-3
Text Book	TB2	B.C PUNMIA AND ASHOK JAIN ENVIRONMENTAL ENGG-I	SECOND EDITION' LAXMI PUBLICATION	978-81-318-0703-3
Ref book	RB1	G.S BIRIE AND J.S BIRDIE	NINTH EDITION DHANPAT RAI PUBLICATIONS	81-87433-31-0
Ref book	RB2	RANGWALA" WATER SUPPLY AND SANITARY ENGG"	EIGHTEENTH EDITION CHAROTAR PUBLISHNG HOUSE	81-855-94-12-0



**CMR INSTITUTE  
OF TECHNOLOGY**

Session wise – Course Plan

**Department of Civil Engineering**

SEMESTER: VI A and B sec

NAME OF THE FACULTY: Vibha N Dalawai

BRANCH: Civil

DATE OF COMMENCEMENT: 13.02.2017

SUBJECT: DDRCC

DATE OF CLOSING: 03.06.2017

SUBJECT CODE: 10CV62

CLASS STRENGTH: 53 + 56

NO OF HRS/WK: 3(T) + 3(D)

TOTAL HRS: 72

Session No	Chapter no (No of hrs planed for the chapter)	Topics planned for the session	Teaching Aids	Drawing submission
1	1/1	Introduction to RCC	Board, chalk, duster	
2	2/1	General layout of building showing position of columns, footings beams and slabs	„	
3	3/1	Problems and drawing on general layout of building	„	
4	4/1		„	
5	5/1		„	
6	1/2	Introduction to RCC and codal provisions of IS 456, SP 34, SP 16	„	
7	2/2	Introduction to beam slab floor system and design criteria	„	
8	3/2	Introduction to continuous beams and design criteria	Board, chalk, duster	

9	<b>4/2</b>	Drawing of beam slab floor system and continuous beams	„	
10	<b>5/2</b>		„	
11	<b>6/2</b>		„	
12	<b>7/2</b>	Problems on beam slab floor system and continuous beams	„	
13	<b>8/2</b>	Problems on beam slab floor system and continuous beams	„	
14	<b>1/3</b>	Introduction on Column footings	„	Submission of Unit 1
15	<b>9/2</b>	Drawing of beam slab floor system and continuous beams		
16	<b>10/2</b>			
17	<b>11/2</b>			
18	<b>2/3</b>	Problems on column footing (square)	„	
19	<b>3/3</b>	Problems on column footing (rectangular)	„	
20	<b>4/3</b>	Additional problems on column footings	„	
21	<b>5/3</b>	Drawing of column footings	„	
22	<b>6/3</b>		„	
23	<b>7/3</b>			
24	<b>1/4</b>	Introduction and Problems on dog legged stair cases	Board, chalk, duster	
25	<b>2/4</b>	Problems on open well stair cases	„	
26	<b>3/4</b>	Additional problems on stair cases	„	Submission of Unit 2
27	<b>4/4</b>	Drawing of stair cases	„	
28	<b>5/4</b>		„	
29	<b>6/4</b>		„	
30	<b>1/5</b>	Introduction to combined footing	„	
31	<b>2/5</b>	Introduction and design criteria of slab beam type combined footing	„	
32	<b>3/5</b>	Problems on slab beam type combined footing	„	Submission of Unit 3

33	<b>4/5</b>	Additional drawings on stair cases, Footings and test	Board, chalk, duster	
34	<b>5/5</b>		„	
35	<b>6/5</b>		„	
36	<b>7/5</b>	Problems on slab beam type combined footing	„	
37	<b>8/5</b>	Problems on slab beam type combined footing	„	
38	<b>1/6</b>	Introduction to retaining wall, classification of retaining walls	„	
39	<b>9/5</b>	Drawing of slab beam type combined footing	„	
40	<b>10/5</b>		„	
41	<b>11/5</b>		„	Submission of Unit 4
42	<b>2/6</b>	Design criteria of retaining walls and design of cantilever retaining wall	„	
43	<b>3/6</b>	Design of counter fort retaining wall	„	
44	<b>4/6</b>	Additional problems on retaining wall	„	
45	<b>5/6</b>	Drawing of retaining walls	„	
46	<b>6/6</b>		„	
47	<b>7/6</b>		„	
48	<b>1/7</b>	Introduction to water tanks and classification of water tanks	„	Submission of Unit 5
49	<b>2/7</b>	Design criteria of tanks resting on ground as per IS 3370	Board, chalk, duster	
50	<b>3/7</b>	Design of circular water tank (flexible base)	„	
51	<b>1-6</b>	Internal assessment test (drawing)	„	
52			„	
53			„	
54	<b>4/7</b>	Design of circular water tank (Rigid base)	„	Submission of Unit 6

55	<b>5/7</b>	Design of rectangular water tank (flexible base)	„	
56	<b>6/7</b>	Design of rectangular water tank (rigid base)	„	
57	<b>7/7</b>	Drawing of water tanks	„	
58	<b>8/7</b>		„	
59	<b>9/7</b>		„	
60	<b>1/8</b>	Introduction to moment distribution method	„	Submission of Unit 7
61	<b>2/8</b>	Introduction to portal frames and classification		
62	<b>3/8</b>	Design of portal frame (single bay single floor)		
63	<b>4/8</b>	Drawing of portal frame		
64	<b>5/8</b>			
65	<b>6/8</b>			
66	<b>7/8</b>	Design of portal frame (single bay single floor)		
67	<b>8/8</b>	Design of portal frame (single bay single floor)		
68	<b>9/8</b>	Design of portal frame (single bay single floor)		
69	<b>10/8</b>	Drawing of portal frame		
70	<b>11/8</b>			
71	<b>12/8</b>			
72	<b>7-8</b>	Internal assessment on design		Submission of Unit 8

Text Book/Reference Book	Text Book code	Publication Details	
		Publisher	ISBN
Reinforced concrete structures by B C Punmia	TB1	Laxmi publication	9788131809426
Limit state design of RCC by B C Punmia	TB2	Laxmi Publication	9788131802410
Reinforced concrete limit state design by Ashok Kumar Jain	RB1	Nem chand bros	9788185240664



Lesson Plan for the Even Sem – 2017

Semester – 6

**Subject Code: 10CV63**

**Subject Name: TRANSPORTATION ENGINEERING II**

<b>SEMESTER</b>	: 6 <sup>th</sup> A and B sec	<b>NAME OF THE FACULTY</b>	: Azhaginiyal A.
<b>BRANCH</b>	: CV	<b>DATE OF COMMENCEMENT</b>	: 13-02-2017
<b>SUBJECT</b>	: TRANSPORTATION ENGINEERING II	<b>DATE OF CLOSING</b>	: 24-05-2017
<b>SUBJECT CODE</b>	: 10CV63	<b>CLASS STRENGTH</b>	: 53
<b>NO OF HRS/ WK</b>	: 5	<b>TOTAL HRS</b>	: 56

Sessi on No	Chapter no (No of hrs planned for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	1/5	13-02-2017	<b>INTRODUCTION:</b> Layout of an airport with component parts and functions	Powerpoint presentation		10
2	2/5	15-02-2017	Site selection for airport, Layout of an airport with component parts and functions	Powerpoint presentation		
3	3/5	16-02-2017	Aircraft characteristics affecting the design and planning of airport.	Powerpoint presentation		
4	4/5	17-02-2017	Aircraft characteristics affecting the design and planning of airport.	Powerpoint presentation		
5	5/5	18-02-2017	Airport classification, Runway orientation using wind rose with examples	Chalk and Board		
6	6/5	20-02-2017	Runway orientation using wind rose with examples	Chalk and Board		
7	1/6	22-02-2017	<b>RUNWAY-</b> Basic runway length- Corrections and examples,	Chalk and Board		22
8	2/6	23-02-2017	Runway geometrics,	Chalk and Board		
9	3/6	27-02-2017	Taxiway-Factors affecting the layout -	Chalk and		

				Board		
10	4/6	28-02-2017	Geometrics of taxiway-Design of exit taxiway with examples	Chalk and Board		
11	5/6	01-03-2017	Visual aids- Airport marking	Powerpoint presentation		
12	6/6	06-03-2017	Lighting-Instrumental Landing System	Powerpoint presentation	Assignment 1	
13	1/1	07-03-2017	<b>INTRODUCTION:</b> Role of railways in transportation, Indian Railways.	Chalk and Board		
14	2/1	08-03-2017	Selection of Routes, Permanent way and its requirements.	Chalk and Board		34
15	3/1	09-03-2017	Gauges and types, Typical cross sections-single and double line B G track in cutting, embankment and electrified tracks.	Chalk and Board		
16	4/1	10-03-2017	Gauges and types, Typical cross sections-single and double line B G track in cutting, embankment and electrified tracks.	Chalk and Board		
17	5/1	11-03-2017	Coning of wheels and tilting of rails,	Chalk and Board		
18	6/1	13-03-2017	Rails-Functions-requirements—types and sections length, Wear of rails	Chalk and Board		
19	7/1	14-03-2017	Defects-creep of rails, welding-joints	Chalk and Board	Assignment 2	
20	1/2	15-03-2017	<b>SLEEPERS AND BALLAST:</b> Functions, requirements, Types.	Chalk and Board		49
21	2/2	16-03-2017	Track fitting and fasteners-Dog spike, screw spike and Pandrol clip,-Fish plates-bearing plates.	Chalk and Board		
22	3/2	17-03-2017	Track fitting and fasteners-Dog spike, screw spike and Pandrol clip,-Fish plates-bearing plates.	Chalk and Board		
23	4/2	20-03-2017	Calculation of quantity of materials required for laying a track-Examples,	Chalk and Board		
24	5/2	21-03-2017	Tractive resistances and hauling capacity with examples.	Chalk and Board		
25	6/2	22-03-2017	<b>GEOMETRIC DESIGN:</b> Necessity, Safe speed on curves.	Chalk and Board		61
26	1/3	23-03-2017	Cant-cant deficiency-negative cant	Chalk and Board		
27	2/3	24-03-2017	Safe speed based on various criteria for normal and high speed tracks	Chalk and Board		
28	3/3	01-04-2017	Transition curves- Theory and Numerical	Chalk and		

				Board	
29	4/3	03-04-2017	Gradient and types - Theory and Numerical	Chalk and Board	
30	5/3	04-04-2017	Grade compensation - Theory and Numerical	Chalk and Board	Assignment 3
31	6/3	05-04-2017	<b>POINTS AND CROSSING:</b> Components of a turnout, Details of Points and Crossing.	Chalk and Board	
32	1/4	06-04-2017	Design of turnouts with examples (No derivations)	Powerpoint presentation	
33	2/4	08-04-2017	Types of switches and crossings	Chalk and Board	
34	3/4	10-04-2017	Track junctions, Stations and Types	Chalk and Board	
35	4/4	11-04-2017	Types of yards, Signaling-Objects and types of signals,	Chalk and Board	
36	5/4	12-04-2017	Station and yard Equipment-Turn table,	Chalk and Board	
37	6/4	13-04-2017	Fouling mark, buffer stop, level crossing,	Chalk and Board	
38	7/4	18-04-2017	Track defects, and maintenance	Chalk and Board	
39	8/4	19-04-2017	<b>TUNNELS:</b> Advantages and disadvantages, Size and shape of tunnels,	Powerpoint presentation	
40	2/7	20-04-2017	Surveying-Transferring centre line, and gradient from surface to inside the tunnel working face, Weisbach triangle-Examples,	Powerpoint presentation	
41	3/7	21-04-2017	Tunneling in rocks-methods,	Powerpoint presentation	
42	4/7	22-04-2017	Tunneling methods in soils-Needle beam, Liner plate,	Powerpoint presentation	
43	5/7	25-04-2017	Tunnel lining,	Powerpoint presentation	
44	6/7	26-04-2017	Tunnel ventilation, vertical shafts, Pilot tunneling,	Powerpoint presentation	
45	7/7	27-04-2017	Mucking and methods,	Powerpoint presentation	
46	8/7	28-04-2017	Drilling and drilling pattern.	Powerpoint presentation	Assignment 4
47	1/8	02-05-2017	<b>HARBORS:</b> Harbor classifications, Layout with components,	Powerpoint presentation	
48	2/8	04-05-2017	Natural phenomenon affecting the design of harbors - wind, wave and tide, currents,	Powerpoint presentation	
49	3/8	05-05-2017	Natural phenomenon affecting the design	Powerpoint	

73

85

100

			of harbors - wind, wave and tide, currents,	presentation	
50	4/8	11-05-2017	Breakwater-Types Wharf and Quays,	Powerpoint presentation	
51	5/8	12-05-2017	Jetties and Piers, ,	Chalk and Board	
52	6/8	13-05-2017	Dry dock and wet docks	Chalk and Board	
53	7/8	16-05-2017	Slipways	Chalk and Board	
54	8/8	17-05-2017	Navigational aids	Chalk and Board	
55	9/8	18-05-2017	Warehouse and transit-shed.	Chalk and Board	
56		19-05-2017	Revision		

Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Text Book	TB1	Saxena S.C & Arora S.P., “ A text book of Railway Engineering”	Seventh edition, Dhanpat rai Publications	978-81-89928-83-4
Text Book	TB2	Khanna S.K.& Arora M.G., “ Airport Planning and Design”	Sixth edition, Nem Chand & Bros.	81-85240-68-X
Text Book	TB3	Srinivasan R., “ Harbours, Docks and tunnel Engineering”	26 <sup>th</sup> edition, Charaotar Publications.	978-93-80358-74-1
References	RB2	IRC 37 -2001, IRC 58-2002	2 <sup>nd</sup> Revision, Indian Roads Congress	NA



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Session wise – Course Plan

**Department of Civil Engineering**

SEMESTER : VI A and B sec	NAME OF THE FACULTY : Mrs.Divya Viswanath
BRANCH : CV	DATE OF COMMENCEMENT : 13.02.2017
SUBJECT : GT-2	DATE OF CLOSING : 03.06.2017
SUBJECT CODE : 10CV64	CLASS STRENGTH : 54
NO OF HRS/WK : 6	TOTAL HRS : 66

Session No	Chapter no (No of hrs planed for the chapter)	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter
1.		Revision of Geotechnical Engg-I Discussion of the pre-requisites.		
2.		Introduction to the subject and syllabus		
3	<b>1/2</b>	Geostatic stresses- introduction	Board, chalk, duster	
4	<b>2/2</b>	Boussinesq's theory for concentrated loads-derivation, Concluding points	„	
3	<b>3/2</b>	Draw backs of above theory, numerical problems.	„	
4	<b>4/2</b>	Isobar-construction, Pressure distribution diagrams	„	
5	<b>5/2</b>	Boussinesq's theory for circular loads-derivation, problems	„	
6	<b>6/2</b>	Vertical stress under rectangular loads and numerical problems.	„	
7	<b>7/2</b>	Newmark's chart –Construction applications & related numerical	„	

		problems		
8	<b>8/2</b>	Westergaard's theories for concentrated, circular and rectangular loads.	Board, chalk, duster	
9	<b>9/2</b>	Comparison of Boussinesq's and Westergaard's analysis and contact pressure.	„	Assignment- I
10	<b>1/3</b>	FLOWNETS: Laplace equation , assumptions and limitations	„	
11	<b>2/3</b>	Characteristics and uses of flow nets.	„	
12	<b>3/3</b>	Estimating quantity of seepage and Exit gradient.	„	
13	<b>4/3</b>	Numerical problems on seepage	„	
14	<b>5/3</b>	Numerical problems on seepage	„	
15	<b>6/3</b>	Methods of drawing flow nets for Dams and sheet piles		
16	<b>7/3</b>	Determination of phreatic line in earth dams with and without filter.		
17	<b>8/3</b>	Piping and protective filter		Assignment - II
18	<b>1/5</b>	STABILITY OF EARTH SLOPES: Types of slopes,causes and type of failure of slopes.		
19	<b>2/5</b>	Definition of factor of safety, Stability of infinite slopes		
20	<b>3/5</b>	Stability of infinite slopes-continuation.		
21	<b>4/5</b>	Numerical problems on factor of safety.		
22	<b>5/5</b>	Stability of finite slopes by Method of slices		
23	<b>6/5</b>	Stability of finite slopes by Friction Circle method		
24	<b>7/5</b>	Taylor's stability number, Felineous method.		
25	<b>8/5</b>	Related numerical problems		Assignment -III
26	<b>8/5</b>	Related numerical problems		
27	<b>1/6</b>	BEARING CAPACITY: Definitions of ultimate, net and safe bearing capacities, Allowable bearing pressure		
28	<b>2/6</b>	Terzaghi's bearing capacity equations -assumptions and limitations	„	
29	<b>3/6</b>	Brinch Hansen's bearing capacity equations -assumptions and limitations	„	
30	<b>4/6</b>	Bearing capacity of footing subjected to eccentric loading	„	
31	<b>5/6</b>	Effect of ground water table on bearing capacity.	„	
32	<b>6/6</b>	Numerical problems on bearing capacity.	„	
33	<b>7/6</b>	Numerical problems on effect of water table on bearing capacity	Board, chalk, duster	

34	<b>8/6</b>	Field methods of evaluation of bearing capacity - Plate load test	„	
35	<b>9/6</b>	Standard penetration test and cone penetration test.	PPT	Assignmnt – IV
36	<b>10/6</b>	Discussion of questions from previous question papers.	Board, chalk, duster	
37	<b>1/7</b>	Importance and Concept of Settlement Analysis	„	
38	<b>2/7</b>	Immediate Consolidation and Secondary settlements	„	
39	<b>3/7</b>	Computation using relevant formula for Normally Consolidated soils	„	
40	<b>4/7</b>	Tolerance, BIS specifications for total and differential settlements of footings and rafts.	„	
41	<b>5/7</b>	Numerical problems on settlements.	„	
42	<b>6/7</b>	Numerical problems on settlements.	„	Assignment - V
43	<b>1/4</b>	LATERAL EARTH PRESSURE: Active and Passive earth pressures , Earth pressure at rest	„	
44	<b>2/4</b>	Variation of pressure.	„	
45	<b>3/4</b>	Rankine’s Earth pressure theory—assumptions and limitations	„	
46	<b>4/4</b>	Related numerical problems.	„	
47	<b>5/4</b>	Rankine’s Earth pressure for inclined backfill and cohesive soils (active case )	„	
48	<b>6/4</b>	Rankine’s Earth pressure in cohesive soil-passive case, Problems related.	„	
49	<b>7/4</b>	Related numerical problems, Coulomb’s Earth pressure theory—assumptions and limitations	Board, chalk, duster	
50	<b>8/4</b>	Graphical solutions for active earth pressure (cohesionless soil only) -Rebhann’s methods	„	
51	<b>9/4</b>	Graphical solutions for active earth pressure (cohesionless soil only) – Culmann’s methods	„	Assignment - VI
52	<b>1/1</b>	Importance of exploration Program, Methods of exploration: Boring-Different methods of boring.	PPT	
53	<b>2/1</b>	Seismic refraction method of geophysical exploration, soil exploration report.	PPT	
54	<b>3/1</b>	Types of samples - undisturbed, disturbed and representative samples	Board, chalk, duster	
55	<b>4/1</b>	Samplers, sample disturbance, area ratio, Recovery ratio,	„	

		clearance, related numerical problems		
56	<b>5/1</b>	Stabilisation of boreholes - Typical bore log. Number and depth of borings for various civil engineering structures	„	
57	<b>6/1</b>	Determination of ground water level by Hvorselev's method	„	
58	<b>7/1</b>	Control of ground water during excavation: Dewatering - Ditches and sumps, well point system.	PPT	Assignment - VII
59	<b>8/1</b>	Vacuum method, Electro- Osmosis method	Board, chalk, duster	
60	<b>1/8</b>	Proportioning shallow and pile foundations- Allowable Bearing Pressure, Factors influencing the selection of depth of foundation	„	
61	<b>2/8</b>	Factors influencing allowable bearing pressure, Classification of pile foundation.	„	
62	<b>3/8</b>	Pile load capacity.	„	
63	<b>4/8</b>	Proportioning isolated, combined, strip and mat foundations.	„	Assignment - VIII
64	<b>5/8</b>	Proportioning pile foundation.	„	
65		Revision		
66		Revision		

Signature of faculty

Signature of HOD

Signature of Principal



**Lesson Plan for the Even Sem – 2016-17**

**Semester – 6**

**Subject Code: 10CV65**

**Subject Name: HYDRAULIC STRUCTURES & IRRIGATION DESIGN DRAWING**

SEMESTER : VI A and B sec NAME OF THE FACULTY : Ms. Preeti Jacob  
BRANCH : CIVIL DATE OF COMMENCEMENT : 13-02-2017  
SUBJECT : HYDRAULIC STRUCTURES AND IRRIGATION DESIGN DRAWING DATE OF CLOSING : 03-06-2017

SUBJECT CODE: 10CV65 CLASS STRENGTH : 53  
NO OF HRS/ WK : 2(T)+3(P) TOTAL HRS : 55 (22+11)

Session No	Chapter no (No of hrs planned for the chapter)	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
<b>Part A</b>					
1	1/1	Introduction to the subject	PPT		
2	2/1	Reservoir planning – Introduction, Classification of Reservoir, Storage zones of a reservoir, mass curve	PPT		
3	3/1	Fixing capacity of a reservoir, safe yield problems	Chalk-Board		
4	4/1	Density currents, trap efficiency, Reservoir sedimentation, life of a reservoir, Economic height of a dam, problems, Environment effects of reservoir	„	Assignment -I	
5	1/2	Gravity dams – Introduction, Forces on a gravity dam	„		
6	2/2	Stress analysis in gravity dams, Problems	„		
7	3/2	Elementary and practical profile of a gravity dam	„		
8	4/2	Stability analysis (without earthquake forces),	„		

		Problems, Galleries in gravity dams			
9	1/3	Earthen dams – Introduction, Types of earth dams, Construction methods	Board, chalk		
10	2/3	Design criteria for earth dams, Causes of failure for earth dam, Section of dam	”		
11	3/3	Preliminary design criteria, Problems	”		
12	4/3	Control of seepage, Safety measures	”		
<b>Part B</b>					
13	1/1	Design of Surplus Weir	”		
14	2/1	Design of Surplus Weir	”		
15	1/2	Design of Canal Drop	”	Assignment –II	
16	2/2	Design of Canal Drop	”		
17	1/3	Design of Tank Sluice			
18	2/3	Design of Tank Sluice			
19	1/4	Design of Canal Regulator			
20	2/4	Design of Canal Regulator		Assignment -III	
21	1/5	Design of Aqueduct			
22	2/5	Design of Aqueduct			
		<b>Drawing</b>			
1	1/1	Drawing of Surplus Weir			
2	2/1	Drawing of Surplus Weir			
3	3/1	Drawing of Surplus Weir			
4	1/2	Drawing of Canal Drop			
5	2/2	Drawing of Canal Drop			
6	1/3	Drawing of Tank Sluice			
7	2/3	Drawing of Tank Sluice			
8	1/4	Drawing of Canal Regulator			
9	2/4	Drawing of Canal Regulator			
10	1/5	Drawing of Aqueduct			
11	2/5	Drawing of Aqueduct			

**Literature:**

Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Text Book	TB1	Garg S. K., “Irrigation Engineering & Hydraulic Structures”	Khanna Publishers- Third edition	81 -740-9047-9
Text Book	TB2	Sathyanarayana Murthy C, “ Water Resources Engineering Principles and Practice”	New Age International Publishers, Revised Second Edition	81-224-1382-3



**CMR INSTITUTE  
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TECHNOLOGY**

Session wise – Course Plan

**Department of Civil**

SEMESTER : VI A and B sec

NAME OF THE FACULTY: Mr. Naresh Dixit P S

BRANCH: Civil

DATE OF COMMENCEMENT: 14/02/2017

SUBJECT: TOE

DATE OF CLOSING: 05/06/2017

SUBJECT CODE: 10CV661

CLASS STRENGTH: 48

NO OF HRS/WK: 5

TOTAL HRS: 60

Session No	Chapter no (No of hrs planed for the chapter)	Topics planned for the session	Teaching Aids	Text book Referred	Assignments/ Tests planned for the chapter
1	1/1	Basics of mathematics	Board, chalk, duster	RB1/RB2/TB1	Prerequisite Assignment
2	2/1	Introduction to mathematical theory of elasticity	„		
3	3/1	Continuum, Stress and strain at a Point and tensors	„		
4	4/1	Generalised hookes law and strain- displacement relation	„		Concept/Spot test
5	5/1	St-Venant's principle Problems	„		
6	6/1	Problems	„		
7	1/2	Differential equations of	„		
8	2/2	Differential equations of equilibrium,	Board, chalk, duster		
9	3/2	Compatibility condition- Plane stress problem	„		

10	<b>4/2</b>	Compatibility condition- Plane strain problem	„	RB1/RB2/TB1	
11	<b>5/2</b>	Airy's stress function, Problems	„		
12	<b>6/2</b>	Stress Polynomials	„	TB1/TB2	
13	<b>7/2</b>	Problems	„		
14	<b>8/2</b>	Test	„		Spot Test
15	<b>9/2</b>	Problems			Assignment- I
16	<b>1/3</b>	Plane stress and plane strain condition		TB1/RB1	
17	<b>2/3</b>	Principle stress and strain			
18	<b>3/3</b>	Measurement of surface strain, Strain Rosettes	„		
19	<b>4/3</b>	Mohr's circle of stress and strain (analytical method)	„		
20	<b>5/3</b>	Test	„		Concept and problems test
21	<b>1/4</b>	Two dimensional problems in rectangular coordinates	„	TB1/RB1/RB2	
22	<b>2/4</b>	Two dimensional problems in rectangular coordinates	„		
23	<b>3/4</b>	Two dimensional problems in rectangular coordinates			
24	<b>4/4</b>	Two dimensional problems in rectangular coordinates	Board, chalk, duster		
25	<b>5/4</b>	Two dimensional problems in rectangular coordinates	„		
26	<b>6/4</b>	Two dimensional problems in rectangular coordinates	„		
27	<b>7/4</b>	Bending of beam subjected to end loads	„		Assignment –II
28	<b>8/4</b>	Effect of shear deformation in beams	„		

29	<b>9/4</b>	Simply supported beam subject to UDL	”	TB1/RB1/RB2	
30	<b>10/4</b>	Test	”		Numerical test
31	<b>1/5</b>	2-D problem in polar coordinates	”	TB1/TB2	
32	<b>2/5</b>	Strain displacement relation	”		
33	<b>3/5</b>	Equation of equilibrium	Board, chalk, duster		
34	<b>4/5</b>	Compatibility equation- Plane stress	”		
35	<b>5/5</b>	Compatibility equation- Plane strain	”		
36	<b>6/5</b>	Stress functions	”		
37	<b>7/5</b>	Problems	”		
38	<b>8/5</b>	Test	”		Spot test/Assignment- III
39	<b>1/6</b>	Axi symmetric stress distribution	”		
40	<b>2/6</b>	Rotating Disc	”		
41	<b>3/6</b>	Lame’s equation for thick cylinder	”		
42	<b>4/6</b>	Lame’s equation for thick cylinder	”		
43	<b>5/6</b>	Problems	”		
44	<b>1/7</b>	Effect of circular hole on stress distribution- Tension	”		
45	<b>2/7</b>	Effect of circular hole on stress distribution- Tension	”		
46	<b>3/7</b>	Effect of circular hole on stress distribution- Compression	”		

47	<b>4/7</b>	Effect of circular hole on stress distribution- Comp	„	TB1/TB2	
48	<b>5/7</b>	Effect of circular hole on stress distribution- Shear	„		
49	<b>6/7</b>	Effect of circular hole on stress distribution- Shear	Board, chalk, duster		
50	<b>7/7</b>	Stress concentration factor in tension compression and shear	„		
51	<b>8/7</b>	Test	„		Stop Test/ Assignment- IV
52	<b>1/8</b>	Torsion inverse and semi inverse method	„	TB2/RB2	
53	<b>2/8</b>	Torsion inverse and semi inverse method	„		
54	<b>3/8</b>	Stress functions	„		
55	<b>4/8</b>	Stress functions	„		
56	<b>5/8</b>	Torsion of circular and elliptic sections	„		
57	<b>6/8</b>	Torsion of circular and elliptic sections	„		
58	<b>1-3</b>	Revision/Test	„		
59	<b>4-6</b>	Revision/Test	„		
60	<b>7-8</b>	Revision/Test	„		
61	<b>1-8</b>	Problems Test			

Text Book/Reference Book	Text Book code	Publication Details	
		Publisher	ISBN
Theory of elasticity by Stephen Timoshenko and J N Goodier	TB1	TATA Mc-Grawhill	9780070701229
Applied stress analysis by Dr. Sadhu Singh	TB2	Khanna	9788174090762
Advanced Mechanics of solids by L S Srinath	RB1	Mc-Grawhill	9780070139886
A Treatise on Mathematical theory of elasticity Augustus Edward Hough Love	RB2	Newyork Dover	9780486464253

**Internal assessment test 1- Unit 1- Unit 4 (only cantilever beam)**

**Internal assessment Test 2- Unit 5- Unit 4- Unit 8**

**Improvement Test- Unit 2, Unit 4, Unit 5, Unit 6**

**Assignment 1- Unit 1 and 2**

**Assignment 2- Unit 3 and Unit 4**

**Assignment 3- Unit 5**

**Assignment 4- Unit 6 and Unit 7**

**Signature of faculty**

**Signature of HOD**

**Signature of Principal**

Lesson Plan for the even sem – 2017

Semester – 6

**Subject Code: 10CV666**

**Subject Name: RURAL WATER SUPPLY & SANITATION**

SEMESTER : VI A and B sec

NAME OF THE FACULTY : Ms.Bhavya K.

BRANCH : CIV

DATE OF COMMENCEMENT: 13-02-2017

SUBJECT : RURAL WATER SUPPLY & SANITATION

DATE OF CLOSING : 24-05-2017

SUBJECT CODE : 10CV666

CLASS STRENGTH : 37

NO OF HRS/ WK : 5

TOTAL HRS : 58

Session No	Chapter no (No of hrs planed for the chapter)	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan (%)
1	1/1	Introduction and syllabus briefing	Chalk & Board		
2	2/1	<b>UNIT-1</b> Introduction	„		12.5
3	3/1	Need for a protected water supply	„		
4	4/1	Investigation and selection of water sources	„		
5	5/1	Water borne diseases	„		
6	6/1	Protection of well water	„		
7	7/1	Drinking water quality standards	„		
8			„	<i>Class Test</i>	
9	1/2	<b>UNIT – 2</b> Types of pumps	Chalk & Board		25
10	2/2	Supply systems viz., BWS, MWS, PWS	„		
11	3/2	Water treatment methods	„		
12	4/2	Disinfection	„		
13	5/2	Deflouridation	„		



14	6/2	Hardness	„		
15	7/2	Iron and manganese removal	„		
16	8/2	Ground water contamination and control	PPT	Assignment -1	
17				<i>Class Test</i>	
18	1/3	<b>UNIT – 3</b> Public latrine			
19	2/3	Concept of eco-sanitation	Chalk & Board		
20	3/3	Trenching and composting methods	„		
21	4/3	Two pit latrines	„		
22	5/3	Aqua privy	„		37.5
23	6/3	Septic tank	„		
24	7/3	Soak pit	Chalk & Board		
25			„	<i>Class Test</i>	
26	1/4	<b>UNIT – 4</b> Storm water disposal	„		
27	2/4	Sullage disposal	„		
28	3/4	Rain water harvesting and uses	PPT	Assignment -2	50
29				<i>Class Test</i>	
30	1/5	<b>UNIT – 5</b> Terminology	Chalk & Board		
31	2/5	Classifications	„		
32	3/5	Methods of communication	PPT		62.5
33	4/5	General methods of control	Chalk & Board		
34				<i>Class Test</i>	
35	1/6	<b>UNIT – 6</b> Collection methods	„		
36	2/6	Transportation	„		
37	3/6	Disposal - Salvaging			
38	4/6	Dumping	Chalk & Board		
39	5/6	Manure pits	„		75
40	6/6	Dumping in low lands	„		
41	7/6	Composting	„		
42	8/6	Dung disposal	„		
43	9/6	Biogas plant	„	Assignment -3	
44			„	<i>Class Test</i>	
45	1/7	<b>UNIT – 7</b> Essentials	PPT		

46	2/7	Test for milk quality	„		87.5
47	3/7	Pasteurization	„		
48	4/7	Quality control	„		
49	5/7	Cattle borne diseases	„		
50	6/7	Planning for a cow shed	„		
51				<i>Class Test</i>	
52	1/8	<b>UNIT – 8</b> House fly and mosquito-life cycle	PPT		100
53	2/8	Diseases	„		
54	3/8	Transmission	„		
55	4/8	Control measures	„	Assignment -4	
56				<i>Class Test</i>	
57		Revision			
58		Revision			

### Syllabus for Internal Assessment Tests (IAT)\*

Sessional #	Syllabus
T1	Class # 01 – 24
T2	Class # 26 – 43
T3	Class # 45 - 55

\*: See calendar of events for the schedules of IATs.

### Literature:

Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Textbook	TB1	Dr. B. C. Punmia “Wastewater Engineering”	2 <sup>nd</sup> Edition Laxmi	8131805964, 978813180596 1
Textbook	TB2	Joseph. A. Solveto “Environmental Sanitation”	22 <sup>nd</sup> Edition Khanna	978817409230 4
Reference	RB1	Park & Park “Preventive & Social Medicine”	5 <sup>th</sup> Edition McGraw Hill	978007112250 4

Lesson Plan for the even sem – 2017

Semester – 6

**Subject Code: 10CV66**

**Subject Name: TRAFFIC ENGINEERING**

<b>SEMESTER</b>	<b>: VI Sem A and B sec</b>	<b>NAME OF THE FACULTY</b>	<b>: A. Azhaginiyal</b>
<b>BRANCH</b>	<b>: CIV</b>	<b>DATE OF COMMENCEMENT:</b>	<b>13-02-2017</b>
<b>SUBJECT</b>	<b>: TRAFFIC ENGINEERING</b>	<b>DATE OF CLOSING</b>	<b>: 24-05-2017</b>
<b>SUBJECT CODE:</b>	<b>10CV667</b>	<b>CLASS STRENGTH</b>	<b>: 19</b>
<b>NO OF HRS/ WK:</b>	<b>5</b>	<b>TOTAL HRS</b>	<b>: 60</b>

Session No	Chapter no (No of hrs planned for the chapter)	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	1/1	Definition, objectives of Traffic Engineering	Chalk and talk		12.5%
2	2/1	Scope of Traffic Engineering	“		
3	1/2	Road user characteristics– Reaction time of driver –.	“		
4	2/2	Vehicular characteristics – static and dynamic characteristics	“		
5	3/2	Power performance of vehicles	“		
6	4/2	Resistance to the motion of vehicles	“		25%
7	5/2	Problems on above	“		
8	6/2	Problems on above	“		
9	7/2	Problems on above	“	Assignment 1	
10	1/3	Various types of traffic engineering studies	PPT		
11	2/3	Types of traffic engineering studies	“		
12	3/3	Types of traffic engineering studies	“		

13	4/3	Types of traffic engineering studies	“		
14	5/3	Data collection, analysis objectives and method of study	“		
15	6/3	Data collection, analysis objectives and method of study	“		
16	7/3	Definition of study area	“		
17	8/3	Sample size and analysis	“		
18	1/4	Classified traffic Volume at mid block and intersections	“	Assignment 2	
19	2/4	PCU, origin and destination,	“		
20	3/4	Spot speed, speed and delay	“	Assignment 3	
21	4/4	Parking – on street parking, off street parking	“		
22	5/4	Accident – causes, analysis measures to reduce accident	“		37.5%
23	6/4	Problems on above	Chalk and talk		
24	1/5	Traffic flow theory	“		
25	2/5	Green shield theory –	“		
26	3/5	Goodness of fit, correlation and regression analysis	“		
27	4/5	Problems on above	Chalk and talk		
28	5/5	Problems on above	“	Assignment 4	50%
29	6/5	Queuing theory	PPT		
30	7/5	Car following theory	“		
31	8/5	Relevant problems on above.	Chalk and talk		
32	9/5	Relevant problems on above.	Chalk and talk		
33	1/6	Poisson’s distribution and application to traffic engineering.	PPT		
34	2/6	Problems	Chalk and talk		
35	3/6	Problems	Chalk and talk		
36	4/6	Normal Distribution	“		62.5%
37	5/6	Problems	“		
38	6/6	Problems	“		
39	7/6	Significance tests for observed traffic data	“		
40	8/6	Chi Square test	“		
41	9/6	Problems on above.	“		

42	10/6	Problems	“		
43	11/6	Problems	“	Assignment 5	
44	12/6	Traffic forecast – simulation technique	“		
45	13/6	Problems	“		75%
46	14/6	Problems	“		
47	1/7	Driver, vehicle and road controls	PPT		87.5%
48	2/7	Traffic regulations – one way – Traffic markings,	“		
49	3/7	Traffic signs, Traffic signals –	“		
50	4/7	Vehicle actuated and synchronized signals	“		
51	5/7	Signals co-ordination, Webster’s method of signal design	“		
52	6/7	Problems on signal design	Chalk and Talk		
53	7/7	Problems on signal design	“		
54	8/7	IRC method, traffic rotary elements and designs,	“		
55	9/7	Problems	“	Assignment 7	
56	10/7	Problems	“		
57	11/7	Traffic operation	PPT		
58	12/7	Street lighting, Road side furniture	“		
59	1/8	<b>ITS</b> Definition, Necessities	“		100%
60	2/8	Application in the present traffic scenario.	“		

### Syllabus for Internal Assessment Tests (IAT)\*

Sessional #	Syllabus
T1	Class # 01 – 20
T2	Class # 21– 40
T3	Class # 40-60

\*: See calendar of events for the schedules of IATs.

### Literature:

Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Text Book	TB1	<b>Traffic Engineering &amp; Transport Planning</b> by L.R. Kadiyali	Khanna Publishers	
Text Book	TB2	<b>Highway Engineering Nemchand &amp; Bros-</b> Khanna & Justo	Roorkee (UA).	
Text Book	TB3	<b>Traffic Engg.</b> - Matson & Smith:	Mc.Graw Hill and Co.	
Ref book	RB1	<b>An introduction to traffic engineering-</b> Jotin Khistey and Kentlal	PHI	
Ref book	RB2	<b>Traffic Engineering-</b> Mc Shane & Roess	PHI	