

#132, AECS Layout, IT Park Road, Kundalahalli,  
Bangalore – 560 037 T:+9180 28524466 / 77 Bangalore – 560 037

CMR  
INSTITUTE OF  
TECHNOLOGY



DEPARTMENT OF CIVIL ENGINEERING

**Lesson Plan for the even sem ( 2016-2017)**

**Semester – VIII**

**Subject Code: 10CV81**

**Subject Name: ADVANCED CONCRETE TECHNOLOGY**

**SEMESTER : VIII**

**NAME OF THE FACULTY : : Mr Raghavendra PK**

**BRANCH : CIVIL**

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

**DATE OF CLOSING : 03-06-2017**

**SUBJECT CODE : 10CV81**

**CLASS STRENGTH : 52**

**NO OF HRS/ WK : 6**

**TOTAL HRS : 52**

Session Number	Chapter No	Topic	Teaching aids	Assignment
1	Unit1	Brief Introduction to Cement, aggregates, water as a materials. Manufacturing of	Chalk & talk	
2	Unit 1	Bouges Compound, its	Chalk & talk	
3	Unit 1	Hydration process, Heat of . Formation of Gel, etternaitc CH its contribution to strength	Chalk & talk	
4	Unit-1	Structure of Hydrated Cement · Solid form	Chalk & talk	
5	Unit-1	Structure of Hydrated paste- and voids	Chalk & talk	
6	Unit-1	Volume of Hydrated Paste and Concrete	Chalk & talk	
7	Unit-1	Volume of Hydrated Paste and Concrete	Chalk & talk	
8	Unit-1	Porosity of Paste and Concrete	Chalk & talk	
9	Unit-1	ITZ	Chalk & talk	
10	Unit-1	Rhealogy of Concrete	Chalk & talk	
11	Unit-1	Compressive Strength	Chalk & talk	
12	Unit-1	Elastic modulus	Chalk & talk	
13	Unit -3	Importance of Preparation of concrete. Factors governing making good concrete. Philosonyof Concrete	Chalk & talk	
14	Unit-3	MIX DESIGN - Factors affecting desian. desian of concrete mix BIS method using IS10262	Chalk & talk + Power point	
15	Unit -3	MIX DESIGN - Factors affecting desian. desian of concrete mix BIS method using IS10262	Chalk & talk + Power point	

16	Unit-3	American (ACI)/ British (BS) methods. Provisions in IS10262-2004	Chalk & talk + Power point	Assignment number-1
17	Unit-4	Durability - Concept and interpretation based on different Study. IS 456 provision on IS 1343 -1980 Provision on durability. External and Internal Factors governing durability of Concrete	Chalk & talk + Power point	
18	Unit-4	Permeability - factors governing its influence on durability	Chalk & talk + Power point	
19	Unit-4	Chemical attack, Acid Attack, efflorescence	Chalk & talk + Power point	
20	Unit-4	Corrosion in concrete. Thermal conductivity.	Chalk & talk + Power point	
21	Unit-4	thermal diffusivity, specific heat.	Chalk & talk + Power point	
22	Unit-4	Alkali Aggregate Reaction,	Chalk & talk + Power point	
23	Unit-4	IS456-2000 requirement for durability	Chalk & talk + Power point	
24	Unit-5	RMC concrete - manufacture, transporting, placing	Chalk & talk + Power point	
25	Unit-5	Methods of concreting- Pumping	Chalk & talk + Power point	
26	Unit-5	under water concreting, shotcrete	Chalk & talk + Power point	
27	Unit-5	Shotcrete	Chalk & talk + Power point	
28	Unit-5	High volume fly ash concrete concept	Chalk & talk + Power point	
29	Unit-5	High volume fly ash concrete concept	Chalk & talk + Power point	
30	Unit-5	Self compacting concrete materials. tests. properties. application and Typical mix	Chalk & talk + Power point	
31	Unit-5	Self compacting concrete materials. tests. properties. application and Typical mix	Chalk & talk + Power point	Assignment number-2
32	Unit-6	Fiber reinforced concrete - types and properties,	Chalk & talk + Power point	
33	Unit-6	Fiber reinforced concrete - types and properties	Chalk & talk + Power point	
34	Unit-6	Behavior of FRC in tension including pre-stage & Post Cracking Stage	Chalk & talk + Power point	
35	Unit-6	behavior in flexure and shear,	Chalk & talk + Power point	
36	Unit-6	Ferro cement - materials, of manufacture	Chalk & talk + Power point	
37	Unit-6	properties and application	Chalk & talk + Power point	
38	Unit-7	Light weight concrete-materials properties and types	Chalk & talk + Power point	
39	Unit-7	Typical light weight concrete mix	Chalk & talk + Power point	

40	Unit-7	High density concrete-materials, properties and applications. typical mix	Chalk & talk + Power point	
41	Unit-7	high performance concrete-materials. properties and applications. typical mix	Chalk & talk + Power point	Assignment number -3
42	Unit-2	CHEMICAL ADMIXTURES- Mechanism of chemical admixture	Chalk & talk + Power point	
43	Unit-2	Plasticizers their effect on property in fresh and state	Chalk & talk + Power point	
44	Unit-2	super Plasticizers their effect concrete property in fresh and hardened state	Chalk & talk + Power point	
45	Unit-2	Marsh cone test for optimum of super plasticizer	Chalk & talk + Power point	
46	Unit-2	retarder, accelerator, Air-admixtures	Chalk & talk + Power point	
47	Unit-2	new generation Super plasticiser.	Chalk & talk + Power point	
48	Unit-2	MINERAL ADMIXTURE-Fly effect on concrete property in state and hardened state	Chalk & talk + Power point	
49	Unit-2	Silica fume, effect on concrete property in fresh state and state	Chalk & talk + Power point	
50	Unit-2	GGBS effect on concrete fresh state and hardened	Chalk & talk + Power point	
51	Unit-8	Test on Hardened concrete- end condition of specimen.	Chalk & talk + Power point	
52	Unit-8	capping, HID ratio, rate of loading	Chalk & talk + Power point	
53	Unit-8	moisture condition. tension and flexure tests	Chalk & talk + Power point	
54	Unit-8	Tests on composition of concrete-cement content. w/c ratio	Chalk & talk + Power point	
55	Unit-8	NOT tests concepts-Rebound hammer, pulse velocity	Chalk & talk + Power point	

Sessional #	Syllabus
T1	Class # 01 - 23
T2	Class # 24 - 41
T3	Class # 42- 55

Literature

Book Type	Code	Author & Title	Publication info	
			Edition &	ISBN #
Text Book	TB1	Concrete Mix Design- N. Krishna Raju	Sehgal Publishers	
Ref book	RB1	Properties of Concrete- Neville,	Pearson	9788177585872
Ref book	RB2	Concrete Technology- Neville,	Pearson	9788731705360
Ref book	RB3	Concrete Technology- A R Shanthakumar	Oxford university press	0195671538
Ref book	RB4	Non-Destructive Test and Evaluation of Materials- J.Prasad, C G K Nair	Mc Graw Hill.	978-1259061615
Ref book	RBS	High Performance Concrete- Prof Aitcin P C	E and FN, London.	9780419192701
Ref book	RB6	Properties of Fresh Concrete- Power T.C.	E and FN, London	978-0471695905
Code book	CB1	ACI Code for Mix Design		
Code book	CB2	IS 10262-2004		

#132, AECS Layout, IT Park Road, Kundalahalli,  
Bangalore – 560 037 T:+9180 28524466 / 77 Bangalore – 560 037

CMR  
INSTITUTE OF  
TECHNOLOGY



DEPARTMENT OF CIVIL ENGINEERING

Lesson Plan for the even sem ( 2016-2017)

Semester – VIII

Subject Code: 10CV82

Subject Name: DESIGN AND DRAWING STEEL STRUCTURES

SEMESTER : VIII NAME OF THE FACULTY : K Shijina  
BRANCH : CIVIL DATE OF COMMENCEMENT : 13-02-2017  
SUBJECT : DESIGN AND DRAWING STEEL OF STRUCTURES DATE OF CLOSING : 03-06-2017  
SUBJECT CODE : 10CV82 CLASS STRENGTH : 52  
NO OF HRS/ WK : 6 TOTAL HRS : 52

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	1/1	13/02/17	Beam-beam connection - bolted ,welded	Board, Chalk, PPT		
2	2/1	14/02/17	Beam-beam connection – bolted,welded	”		
3	3/1	16/02/17	Beam-beam connection – bolted,welded	”		
4	4/1	18/02/17	Drawing of beam-beam connection – bolted,welded			

5	5/1	18/02/1 7	<b>Drawing of Beam- column connection –bolted,welded</b>			
7	6/1	20/02/1 7	<b>Seated unstiffened bolted,welded connection</b>	Board, Chalk, PPT		
8	7/1	21/02/1 7	<b>Seated unstiffened bolted,welded connection</b>	„	Assignment-1	
9	8/1	23/02/1 7	<b>Seated unstiffened bolted,welded connection</b>	„		
10	9/1	28/02/1 7	<b>Drawing of Seated unstiffened bolted ,welded connection</b>			
11	10/1	28/02/1 7	<b>Drawing of Seated unstiffened bolted ,welded connection</b>			
12	11/1	01/03/1 7	<b>Seated unstiffened bolted ,welded connection</b>	Board, Chalk, PPT		
13	12/1	02/03/1 7	<b>Seated stiffened bolted ,welded connection</b>	“		
14	13/1	07/03/1 7	<b>Seated stiffened bolted,welded connection</b>	„	Assignment –II	
15	14/1	09/03/1 7	<b>Drawing of Seated stiffened bolted &amp; welded</b>			
16	15/1	09/03/1 7	<b>Drawing of Seated stiffened bolted &amp; welded</b>			
17	1/2	10/03/1 7	<b>Column Splices</b>	Board, Chalk, PPT		
18	2/2	11/03/1 7	<b>Column Splices</b>	„		
19	3/2	14/03/1	<b>Column Splices</b>	„		

		7				
20	4/2	16/03/1 7	<b>Drawing of Column Splices</b>			
21	5/2	16/03/1 7	<b>Drawing of Column Splices</b>			
22	6/2	17/03/1 7	<b>lacing &amp; Battens</b>	Board, Chalk, PPT		
23	7/2	18/03/1 7	<b>lacing &amp; Battens</b>	„		
24	8/2	21/03/1 7	<b>lacing &amp; Battens</b>	„	Assignment –III	
25	9/2	23/03/1 7	<b>Drawing of lacing &amp; Battens</b>	„		
26	10/2	23/03/1 7	<b>Drawing of lacing &amp; Battens</b>	„		
27	1/3	24/03/1 7	<b>Slab base</b>	„		
27/03/17 to 30/03/17 - Internal Assesment 1						
28	2/3	31/03/1 7	<b>Gusseted base</b>	„		
29	3/3	03/04/1 7	<b>Gusseted base</b>	„		
30	4/3	05/04/1 7	<b>Drawing of Slab &amp; Gusseted base</b>			
31	5/3	05/04/1 7	<b>Drawing of Slab &amp; Gusseted base</b>			
32	6/3	06/04/1 7	<b>Bolted roof truss -drawing</b>	Board,		

				Chalk, PPT		
33	7/3	07/04/1 7	<b>Grillage foundation</b>	„		
34	8/3	10/04/1 7	<b>Grillage foundation</b>	„		
35	9/3	12/04/1 7	<b>Drawing of Grillage foundation</b>			
36	10/3	12/04/1 7	<b>Drawing of Grillage foundation</b>			
37	1/4	13/04/1 7	<b>Design of Bolted plate girder</b>	Board, Chalk, PPT		
38	2/4	17/04/1 7	<b>Design of Bolted plate girder</b>	„		
39	3/4	19/04/1 7	<b>Design of Bolted plate girder</b>	„	Assignment -IV	
40	4/4	21/04/1 7	<b>Drawing of Bolted plate girder</b>			
41	5/4	21/04/1 7	<b>Drawing of Bolted plate girder</b>			
42	6/4	22/04/1 7	<b>Design of Welded plate girder</b>	Board, Chalk, PPT		
43	7/4	24/04/1 7	<b>Design of Welded plate girder</b>	„		
44	8/4	26/04/1 7	<b>Design of Welded plate girder</b>	„		
45	9/4	28/04/1 7	<b>Drawing of Welded plate girder</b>			



46	10/4	28/04/17	Drawing of Welded plate girder			
47	11/4	02/05/17	Design of Roof Truss	Board, Chalk, PPT		
48	12/4	03/05/17	Design of Roof Truss	„		
49	13/4	05/05/17	Design of Roof Truss	„		
08/05/17 to 10/05/17 - Internal Assesment II						
50	14/4	12/05/17	Drawing of Roof Truss			
51	15/4	12/05/17	Drawing of Roof Truss			
52	16/4	13/05/17	Design of Gantry girder	Board, Chalk, PPT		
53	17/4	15/05/17	Design of Gantry girder	„		
54	18/4	17/05/17	Design of Gantry girder	„		
55	19/4	19/05/17	Drawing of Gantry girder			
56	20/4	19/05/17	Drawing of Gantry girder			
57	-	20/05/17	Revision			
58	-	22/05/17	Revision			

59	-	24/05/17	<b>Revision</b>			
25/05/17 to 27/05/17 - Improvement test						
29/05/17 to 02/06/17 - Lab IAT						
LAST WORKING DAY						



**Lesson Plan for the even sem – 2017**

**Semester – 8**

**Subject Code: 10CV833**

**Subject Name: Pavement Design.**

**SEMESTER : VIII A and B**

**NAME OF THE FACULTY: Karthik N M**

**BRANCH : CV**

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

**SUBJECT : Pavement Design**

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

**SUBJECT CODE : 10CV833**

**CLASS STRENGTH : 34**

**NO OF HRS/ WK : 5**

**TOTAL HRS : 60**

Class #	Chapter Title / Reference Literature	Topic	Percentage of portion covered	
			Reference	Cumulative
1	<b>Introduction</b> TB1:14.1-14.4 TB2:6.1-6.5 RB1:1.2,1.5	General introduction about the subject, text books and references	11.67 %	11.67 %
2		Desirable characteristics of pavement, Types and components		
3		Design strategies of variables- Functions of sub-grade, sub base, base course, surface course		
4		Comparison between Rigid and flexible pavement		
5		Comparison continued		
6		Difference between Highway pavement and Air field pavement		
7		Comparison continued		
8	<b>Fundamentals of design of pavements</b>	Design life – Traffic factors	11.67 %	23.33 %
9		Climatic factors – Road geometry		
10		Subgrade strength and drainage		
11		Stresses and deflections,		

	TB1:15.1-15.3	Boussinesqs theory – principle, Assumptions – Limitations.			
12	16.1-16.2	Busmister theory – Two layered analysis – Assumptions			
13	RB1:2.1-2.2	Problems on above			
14		Problems on above.			
15	<b>Design factors</b>	Design wheel load	11.67 %	35.00 %	
17		Contact pressure – ESWL concept			
		TB2:7.1-7.2			Determination of ESWL by equivalent deflection criteria
18		RB1:6.1-6.4			Problems on above
19					Determination of ESWL by equivalent Stress criteria
20					Problems on above
21					EWL concept
					Problems on above
22	<b>Flexible pavement design</b>	McLeod Method –Assumptions and Principle - Problems	11.67 %	38.33 %	
23		Kansas method – Assumptions and Principle -Problems			
24		TB1:16.3			Tri-axial method - Assumptions and Principle - Problems
25		TB2: 7.3			CBR method – IRC Method (old) - Assumptions and Principle - Problems
26		RB1: 7.1-7.5			CSA Method using IRC 37-2001
27					Problems on above.
28					Problems on above.
29	<b>Stresses in rigid pavement</b>	Principle – Factors - wheel load and its repetition –	11.67 %	58.33 %	
30		TB1:22.1 - 22.2			Properties of sub grade – properties of concrete.
31		TB2: 7.3			External conditions – joints – Reinforcement
32		RB1:4.1-4.3			Analysis of stresses – Assumptions – Westergaard’s Analysis – Modified Westergaard equations
33					Critical stresses – Wheel load stresses, Warping stress – Frictional stress –
34					Combined stresses (using chart / equations) - problems on above.

35		Problems continued		
36	<b>Design of rigid pavement</b>	Design of C.C. Pavement by IRC: 38 – 2002 for dual and Tandem axle load –	15.00 %	73.33 %
37	TB1:22.3-22.10	Continued with design		
38		Problems		
39	TB2:7.4	Reinforcement in slabs – Requirements of joints		
40	RB1:4.4	Reinforcement in slabs – Requirements of joints		
41		Types of joints – Expansion joint – contraction joint- warping joint – construction joint – longitudinal joint		
42		Design of joints, Design of Dowel bars,		
43		Design of Tie bars		
44		Problems		
45	<b>Flexible pavement failures, maintenance and evaluation</b>	Types of failures, causes, remedial/maintenance measures in flexible pavements	13.33 %	86.67 %
46	TB1:27.1-27.9, 52.6	Functional Evaluation by visual inspection and unevenness measurement by using different technics -		
47	TB2: 9.1-9.5	Structural Evaluation by Benkelman Beam Deflection Method,		
48		Falling weight deflectometer, GPR Method.		
49		Design factors for Runway Pavements		
50		Design methods for Airfield pavements and problems on above		
51		Problems		
52		Problems		
53	<b>Rigid pavement failures, maintenance and evaluation</b>	Types of failures, causes, in rigid pavements	13.33 %	100%
54		Continued with remedial/maintenance measures		
55		Functional Evaluation by visual inspection		

56	TB1: 27.1-27.9	Unevenness measurements.		
57	52.6	Design factors for Runway Pavements		
58	TB2: 10.1-10.5	Design methods for Airfield pavements		
59		Problems		
60	RB1:9.1-9.5	Problems		

**Literature:**

Book Type	Code	Author & Title	<i>Publication info</i>	
			Edition & Publisher	ISBN #
Text Book	TB1	<b>Highway Engineering-</b> Khanna & Justo	Nem CHand & Bros, Roorkee, UK, India.	978-81-85240-63-3
Text book	TB2	<b>Pavement Analysis &amp; Design</b> - Yang H. Huang- II edition	Pearson	0-13-142473-4
<b>REFERENCE BOOKS</b>	RB1	<b>Principles of Pavement Design</b> - Yoder and Witzack	CBS Publishers.	978-81-265-3072-4

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037

T:+9180 28524466 / 77

**CMR INSTITUTE  
OF TECHNOLOGY**



Session wise – Course Plan

**Department of Civil Engineering**

**Subject Code: 10CV834**

**SubjectName: Earthquake Resistant Design Of Structures.**

SEMESTER : VIII

NAME OF THE FACULTY : Dr H K Seshadri

BRANCH : CV

DATE OF COMMENCEMENT : 22.02.2017

SUBJECT : ERS

DATE OF CLOSING : 03.06.2017

SUBJECT CODE : 10CV83X

CLASS STRENGTH :

NO OF HRS/WK : 6

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
1.	1/1	Introduction to the subject and syllabus	Board /chalk/Duster/ PPT	

2	<b>2/1</b>	Earthquake Ground Motions	“	
3	<b>3/1</b>	Engineering Seismology	”	
4	<b>4/1</b>	Theory of Plate Tectonics, Seismic waves	”	
5	<b>5/1</b>	Magnitude and intensity of Earthquakes	”	
6	<b>6/1</b>	Local site effects	”	
7	<b>7/1</b>	Seismic zoning map of India	”	
8	<b>8/1</b>	Recap		
9	<b>1/2</b>	Seismic Design parameters	”	
10	<b>2/2</b>	Types of earthquakes .	Board /chalk/Duster/ PPT	
11	<b>3/2</b>	Ground motion characteristics	”	Assignment –I
12	<b>4/2</b>	Response Spectra	”	
13	<b>5/2</b>	Response spectra	”	
14	<b>6/2</b>	Response spectra and Design spectrum	”	
15	<b>7/2</b>	Recap		
16	<b>1/3</b>	Structural Modelling	”	
17	<b>2/3</b>	Code based Seismic Design methods	”	
18	<b>3/3</b>	Response control concepts	”	IAT -1
19	<b>4/3</b>	Seismic evaluation and retrofitting	”	



		methods		
20	<b>5/3</b>	Seismic evaluation and retrofitting methods	„	
21	<b>6/3</b>	Seismic evaluation and retrofitting methods	„	
22	<b>7/3</b>	Recap		
23	<b>1/4</b>	Effect of Structural Irregularities on Seismic performance of RC buildings	„	
24	<b>2/4</b>	Vertical irregularity and plan configuration problems	„	
25	<b>3/4</b>	Seismo resistant building architecture	„	
26	<b>4/4</b>	Seismo resistant building architecture and Lateral load resistant systems	„	
27	<b>5/4</b>	Lateral load resistant systems	„	
28	<b>6/4</b>	Lateral load resistant systems and building characteristics	„	
29	<b>7/4</b>	Recap		
30	<b>1/5</b>	Seismic Design Philosophy	Board /chalk/Duster/ PPT	
31	<b>2/5</b>	Determination of Design lateral forces	„	
32	<b>3/5</b>	Equivalent lateral force procedure	„	Assignment –II
33	<b>4/5</b>	Equivalent lateral force procedure	“	

34	<b>5/5</b>	Equivalent lateral force procedure	”	
35	<b>6/5</b>	Dynamic analysis procedure	”	
36	<b>7/5</b>	Dynamic analysis procedure	”	
37	<b>8/5</b>	Dynamic analysis procedure.	”	
38	<b>9/5</b>	Recap		
39	<b>1/6</b>	Seismic analysis of RC buildings without infills by Equivalent static lateral force method	”	
40	<b>2/6</b>	Seismic analysis of RC buildings without infills by Equivalent static lateral force method	”	
41	<b>3/6</b>	Seismic analysis of RC buildings without infills by Equivalent static lateral force method	”	IAT-2
42	<b>4/6</b>	Seismic analysis of RC buildings without infills by response spectrum methods	”	
43	<b>5/6</b>	Seismic analysis of RC buildings without infills by response spectrum methods	”	
44	<b>6/6</b>	Seismic analysis of RC buildings without infills by response spectrum methods	”	
45	<b>7/6</b>	Seismic analysis of RC buildings without infills by response spectrum methods	”	
46	<b>8/6</b>	Recap		
47	<b>1/7</b>	Earth quake resistant analysis and	”	

		Design of RC Buildings –Preliminary data compilations		
48	<b>2/7</b>	Load data, various load combinations .	Board /chalk/Duster/ PPT	
49	<b>3/7</b>	Analysis of subframes	”	Assignmnt –III
50	<b>4/7</b>	Analysis of subframes	”	
51	<b>5/7</b>	Design of Subframes	”	
52	<b>6/7</b>	Design of Subframes	“	
53	<b>7/7</b>	Design of Sub frames	”	Improvement Test
54	<b>8/7</b>	Recap		
55	<b>1/8</b>	Earth quake resistant design of Masonry buildings	”	
56	<b>2/8</b>	Elastic properties of Structural Masonry	”	
57	<b>3/8</b>	Elastic properties of Structural Masonry and Lateral load analysis	Board, chalk, duster	
58	<b>4/8</b>	Lateral load analysis	”	
59	<b>5/8</b>	Lateral load analysis and Design of two storied masonry building	”	Assignment -IV
60	<b>6/8</b>	Lateral load analysis and Design of two storied masonry building	“	
61	<b>7/8</b>	Revision	“	
62	<b>8/8</b>	Revision	“	

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037

T:+9180 28524466 / 77

**CMR INSTITUTE  
OF TECHNOLOGY**



Session wise – Course Plan

**Department of Civil Engineering**

SEMESTER : VIII  
NAME OF THE FACULTY : Mrs. Namitha B  
BRANCH : CV  
DATE OF COMMENCEMENT : 14.2.2017  
SUBJECT : Industrial Wastewater Treatment  
DATE OF CLOSING : 24.05.2017  
SUBJECT CODE : 10CV835  
CLASS STRENGTH : 52  
NO OF HRS/WK : 6  
TOTAL HRS : 70

Session 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	1/1	13.02.17	Difference between Domestic and Industrial Wastewater	Board, chalk, duster		
2	2/1	14.02.17	Effect on Streams and on Municipal Sewage Treatment	„		

			Plants			
3	<b>3/1</b>	15.02.17	Stream Sampling	„		
4	<b>4/1</b>	15.02.17	Effluent and stream Standards	„		
5	<b>5/1</b>	16.02.17	Legislation to Control Water Pollution.	„		
6	<b>1/2</b>	16.02.17	Stream Quality	„		
7	<b>2/2</b>	20.02.17	Dissolved oxygen Sag Curve in Stream	„	Assignment- I	
8	<b>3/2</b>	21.02.17	Streeter– Phelps formulation	Board, chalk, duster		
9	<b>4/2</b>	22.02.17	Streeter– Phelps formulation	„		
10	<b>5/2</b>	22.02.17	Numerical Problems on DO prediction.	„		
11	<b>6/2</b>	23.02.17	Numerical Problems on DO prediction.	„		
12	<b>1/3</b>	23.02.17	Volume Reduction	„		
13	<b>2/3</b>	01.03.17	Strength Reduction	„	Assignment -II	
14	<b>3/3</b>	02.03.17	Neutralization	„		
15	<b>4/3</b>	6.03.17	Equalization	„		
16	<b>5/3</b>	6.03.17	Proportioning	„		
17	<b>1/4</b>	7.03.17	Removal of Inorganic suspended solids	„		
18	<b>2/4</b>	7.03.17	Removal of Organic Solids	„		

19	<b>3/4</b>	10.03.17	Removal of suspended solids and colloids	„		
20	<b>4/4</b>	11.03.17	Removal of suspended solids and colloids	„		
21	<b>5/4</b>	13.03.17	Treatment and Disposal of Sludge Solids	„		
22	<b>6/4</b>	13.03.17	Treatment and Disposal of Sludge Solids	„		
23	<b>1/5</b>	14.03.17	<b>COMBINED TREATMENT:</b> Feasibility of combined Treatment of Industrial Raw Waste with Domestic Waste			
24	<b>2/5</b>	14.03.17	<b>COMBINED TREATMENT:</b> Feasibility of combined Treatment of Industrial Raw Waste with Domestic Waste	Board, chalk, duster		
25	<b>3/5</b>	17.03.17	<b>COMBINED TREATMENT:</b> Feasibility of combined Treatment of Industrial Raw Waste with Domestic Waste	„	Assignm ent –III	
26	<b>4/5</b>	18.03.17	Discharge of Raw, Partially Treated and completely treated Wastes to Streams	„		
27	<b>5/5</b>	20.03.17	Discharge of Raw, Partially Treated and completely treated Wastes to Streams	„		
28	<b>6/5</b>	21.03.17	Discharge of Raw, Partially Treated and completely treated Wastes to Streams	„		
29	<b>7/5</b>	24.03.17	Discharge of Raw, Partially Treated and completely	„		

			treated Wastes to Streams			
30	<b>8/5</b>	31.03.17	Discharge of Raw, Partially Treated and completely treated Wastes to Streams	„		
31	<b>9/5</b>	1.04.17	Discharge of Raw, Partially Treated and completely treated Wastes to Streams	„		
32	<b>1/6</b>	1.04.17	<b>TREATMENT OF SELECTED INDUSTRIAL WASTE:</b> Process flow sheet showing origin / sources of waste water, characteristics of waste, alternative treatment methods, disposal, reuse and recovery along with flow sheet. Effect of waste disposal on water bodies  1. Cotton Textile Industry	„		
33	<b>2/6</b>	3.04.17	1. Cotton Textile Industry	Board, chalk, duster	Assignment –IV	
34	<b>3/6</b>	3.04.17	1. Cotton Textile Industry	„		
35	<b>4/6</b>	6.04.17	1. Cotton Textile Industry	„		
36	<b>5/6</b>	7.04.17	1. Cotton Textile Industry	„		
37	<b>6/6</b>	8.04.17	2. Tanning Industry	„		
38	<b>7/6</b>	8.04.17	2. Tanning Industry	„		
39	<b>8/6</b>	10.04.17	2. Tanning Industry	„		
40	<b>9/6</b>	10.04.17	2. Tanning Industry	„		

41	<b>10/6</b>	13.04.17	3. Cane Sugar Industry & Distillery Industry	„		
42	<b>11/6</b>	17.04.17	3. Cane Sugar Industry & Distillery Industry	„		
43	<b>12/6</b>	18.04.17	3. Cane Sugar Industry & Distillery Industry	„		
44	<b>13/6</b>	18.04.17	3. Cane Sugar Industry & Distillery Industry	„		
45	<b>1/7</b>	19.04.17	<b>TREATMENT OF SELECTED INDUSTRIAL WASTE-I:</b> 1. Dairy Industry	„		
46	<b>2/7</b>	19.04.17	1. Dairy Industry	„		
47	<b>3/7</b>	22.04.17	1. Dairy Industry	„	Assignment -V	
48	<b>4/7</b>	24.04.17	2. Canning Industry	„		
49	<b>5/7</b>	25.04.17	2. Canning Industry	Board, chalk, duster		
50	<b>6/7</b>	25.04.17	2. Canning Industry	„		
51	<b>7/7</b>	26.04.17	3. Steel and Cement Industry	„		
52	<b>8/7</b>	26.04.17	3. Steel and Cement Industry	„		
53	<b>9/7</b>	2.05.17	3. Steel and Cement Industry	„		



54	<b>1/8</b>	3.05.17	<b>TREATMENT OF SELECTED INDUSTRIAL WASTE-II:</b> 1. Paper and Pulp Industry	”		
55	<b>2/8</b>	4.05.17	1. Paper and Pulp Industry	”		
56	<b>3/8</b>	4.05.17	1. Paper and Pulp Industry	”		
57	<b>4/8</b>	5.05.17	2. Pharmaceutical Industry	”	Assignment -VI	
58	<b>5/8</b>	5.05.17	2. Pharmaceutical Industry	”		
59	<b>6/8</b>	13.05.17	2. Pharmaceutical Industry	”		
60	<b>7/8</b>	15.05.17	3. Food Processing Industry	”		
61	<b>8/8</b>	16.05.17	3. Food Processing Industry	”		
62	<b>9/8</b>	16.05.17	3. Food Processing Industry	”		
63		17.05.17	Revision	”		
64		17.05.17	Revision	”		
65		20.05.17	Revision	”		
66		22.05.17	Revision	”		
67		23.05.27	Revision	”		
68		23.05.17	Revision	”		
69		24.05.17	Revision	”		
70		24.05.17	Revision	”		

<b>Sessional #</b>	<b>Syllabus</b>
T1	Class # 01 – 29
T2	Class # 29 – 57
T3	Class # 57 - 70

Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Text Book	TB1	S.K Garg.Environmental engineering2	16th edition Khanna Publisher,2006	81-7409-057-6
Reference Book	RB1	B.C Punmia,A.K JAIN Environmental engineering 2	Lakshmi publication	978-81-318-0596- 1

#132, AECS Layout, IT Park Road, Kundalahalli,  
Bangalore – 560 037 T:+9180 28524466 / 77 Bangalore – 560 037

CMR  
INSTITUTE OF  
TECHNOLOGY



DEPARTMENT OF CIVIL ENGINEERING

**Lesson Plan for the even sem ( 2016-2017)**

**Semester – VIII**

**Subject Code: 10CV841**

**Subject Name: FINITE ELEMENT ANALYSIS**

**SEMESTER : VIII**

**BRANCH : CIVIL**

**SUBJECT : FINITE ELEMENT ANALYSIS**

**SUBJECT CODE : 10CV841**

**NO OF HRS/ WK : 6**

**NAME OF THE FACULTY : Mrs. K Shijina**

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

**DATE OF CLOSING : 03-06-2017**

**CLASS STRENGTH : 30**

**TOTAL HRS : 52**

Session No	Chapter no (No of hrs planed for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignments/ Tests planned for the chapter	Topics covered As per plan
1	1/1		Introduction	Board, Chalk, PPT		
2	2/1		Revision of matrix method	„		
3	3/1		Basic concept of Theory of Elasticity	„		
4	4/1		Basic concept of Theory of Elasticity	„		
5	5/1		Basic concept of Theory of	„		

			<b>Elasticity</b>			
7	6/1		<b>Matrix displacement formulation</b>	Board, Chalk, PPT		
8	7/1		<b>Matrix displacement formulation</b>	„	Assignment-1	
9	8/1		<b>Matrix displacement formulation connection</b>	„		
10	9/1		<b>Energy concepts</b>	„		
11	10/1		<b>Equilibrium and energy methods for analyzing structures.</b>	„		
12	11/1		<b>Equilibrium and energy methods for analyzing structures.</b>	Board, Chalk, PPT		
13	12/1		<b>Equilibrium and energy methods for analyzing structures.</b>	“		
14	1/2		<b>Introduction to Raleigh - Ritz Method</b>	„	Assignment –II	
15	2/2		<b>Problems on Raleigh - Ritz Method</b>	„		
16	3/2		<b>Problems on Raleigh - Ritz Method</b>	„		
17	4/2		<b>Problems on Raleigh - Ritz Method</b>	Board, Chalk, PPT		
18	5/2		<b>Introduction on Galerkin’s Method</b>	„		
19	6/2		<b>Problems on Galerkin’s Method</b>	„		
20	7/2		<b>Problems on Galerkin’s Method</b>	„		

21	8/2		<b>Problems on Galerkin's Method</b>	„		
22	1/3		<b>Displacement function</b>	Board, Chalk, PPT		
23	2/3		<b>Displacement function</b>	„		
24	3/3		<b>Natural coordinates</b>	„	Assignment –III	
25	4/3		<b>Construction of displacement functions for 2 D truss</b>	„		
26	5/3		<b>Construction of displacement functions for 2 D truss</b>	„		
27	6/3		<b>Construction of displacement functions for beam elements</b>	„		
27	7/3		<b>Construction of displacement functions for beam elements</b>	„		
27	1/4		<b>Applications of FEM for the analysis of plane truss</b>	„		
27	2/4		<b>Applications of FEM for the analysis of plane truss</b>	„		
27	3/4		<b>Applications of FEM for the analysis of continuous beam</b>	„		
27	4/4		<b>Applications of FEM for the analysis of continuous beam</b>	„		
28	5/4		<b>Applications of FEM for the analysis of plane frame problem</b>	„		
29	6/4		<b>Applications of FEM for the analysis of plane frame problem</b>	„		
30	1/5		<b>Elements and shape functions</b>	„		

31	2/5		<b>Elements and shape functions</b>	„		
32	3/5		<b>Triangular, rectangular and quadrilateral elements</b>	Board, Chalk, PPT		
33	4/5		<b>Different types of elements, their characteristics and suitability for application.</b>	„		
34	1/6		<b>Polynomial shape functions</b>	„		
35	2/6		<b>Polynomial shape functions</b>	„		
36	3/6		<b>Lagrange's and Hermitian polynomials</b>	„		
37	4/6		<b>Lagrange's and Hermitian polynomials</b>	Board, Chalk, PPT		
38	5/6		<b>compatibility and convergence requirements of shape functions</b>	„		
39	6/6		<b>compatibility and convergence requirements of shape functions</b>	„	Assignment -IV	
40	1/7		<b>Isoparametric Element</b>	„		
41	2/7		<b>Subparametric Element</b>	„		
42	3/7		<b>Super parametric Element</b>	Board, Chalk, PPT		
43	4/7		<b>characteristics of isoparametric quadrilateral elements.</b>	„		
44	1/8		<b>Structure of computer program for FEM analysis</b>	„		
45	2/8		<b>Description of different modules, pre and post processing</b>	„		

#132, AECS Layout, IT Park Road, Kundalahalli,

Bangalore – 560 037 T:+9180 28524466 / 77 Bangalore – 560 037

CMR  
INSTITUTE OF  
TECHNOLOGY



DEPARTMENT OF CIVIL ENGINEERING

Lesson Plan for the odd sem – 2015

Semester – 8

SUBJECT CODE: 10CV843 SUBJECT NAME: Urban transport planning.  
SEMESTER : VIII NAME OF THE FACULTY : Ruchir A J  
BRANCH : CV DATE OF COMMENCEMENT : 13-02-2017  
DATE OF CLOSING : 03-06-2017 CLASS STRENGTH : 45  
NO OF HRS/ WK : 6 TOTAL HRS : 52

Session No	Chapter no (No of hrs planned for the chapter)	DATE	Topics planned for the session	Teaching Aids	Assignment s/ Tests planned for the chapter	Topics covered As per plan
1	1/1	13.02.17	Scope of Urban transport planning	PPT, board and chalk		
2	2/1	14.02.17	Scope of Urban transport planning continued	“		

3	3/1	15.02.17	Inter dependency of land use and traffic	“		
4	4/1	16.02.17	System Approach to urban planning	“		
5	5/1	17.02.17	System Approach to urban planning	“		
6	6/1	18.02.17	Revision and question paper discussion	“		
7	7/1	20.02.17	Trip generation	“		
8	8/1	21.02.17	Trip production	“		
9	9/1	22.02.17	Trip distribution	“		
10	10/1	23.02.17	Modal split	“		
11	½	27.02.17	Trip assignment.	“		
12	2/2	28.02.17	Revisision and question paper discussion	“		
13	3/2	01.03.17	<b>URBAN TRANSPORT SURVEY</b> Definition of study area	“		
14	4/2	02.03.17	Zoning, Factors affecting zoning	“		
15	5/2	06.03.17	Types of Surveys	“		
16	6/2	07.03.17	Types of Surveys continued	“		
17	7/2	08.03.17	Inventory of transportation facilities	“		
18	8/2	09.03.17	Expansion of data from sample	“		



19	9/2	10.03.17	Revision P	“		
20	1/3	11.03.17	<b>Unit 4 .TRIP GENERATION Introduction</b>	“		
21	2/3	06.03.17	Trip purpose	“		
22	3/3	13.03.17	Factors governing trip generation and attraction	“		
23	4/3	14.03.17	Factors governing trip generation and attraction continued	“		
24	5/3	15.03.17	Category analysis	“		
25	6/3	16.03.17	Multi linear regression analysis	“		
26	7/3	17.03.17	Problems	“		
27	8/3	18.03.17	Problems on category analysis	“		
28	9/3	20.03.17	Problems on MLR	“		
29	10/3	21.03.17	Revision Problems	“		
30	11/3	22.03.17	<b>Unit 5: TRIP DISTRIBUTION:Introduction</b>	“		
31	1/4	23.03.17	Methods of trip distribution	“		
32	2/4	24.03.17	Growth factors methods – problems on the above	“		
33	3/4	31.03.17	Synthetic methods	“		
34	4/4	01.04.17	Fractor and Furness method	“		
35	5/4	03.04.17	problems on the above Growth factors	“		

			methods			
36	6/4	04.04.17	problems on Growth factors methods	“		
37	7/4	05.04.17	Problems on Fractor and Furness method	“		
38	8/4	06.04.17	Revision Problems	“		
39	9/4	07.04.17	<b>Unit 6 :MODAL SPLIT: Introduction</b>	“		
40	10/4	08.04.17	Factors affecting Model split – problems on above	“	Internal 1	
41	1/5	10.04.17	characteristics of split	“		
42	2/5	11.04.17	Different types of modal split	“		
43	3/5	12.04.17	Model split in urban transport planning	“		
44	4/5	13.04.17	problems on above	“		
45	5/5	17.04.17	problems on above	“		
46	6/5	18.04.17	Revision Problems	“		
47	7/5	19.04.17	<b>UNIT - 7</b> <b>TRIP ASSIGNMENT: Introduction</b>	“		
48	8/5	20.04.17	Assignment Techniques — — – (	“		
49	9/5	21.04.17	Lowry Model	“		

50	1/6	22.04.17	Garin Lowry model	“		
51	2/6	24.04.17	Model Applications in India	“		
52	3/6	25.04.17	problems on the above	“		
53	4/6	26.04.17	Revision	“		
54	5/6	27.04.17	Question paper discussion	“		
55	6/6	28.04.17	Study of advanced methods for modeling	Seminar		
56	7/6	02.05.17	Study of advanced methods for modeling	Seminar		
57	8/6	03.05.17	Study of advanced methods for modeling	Seminar		
58	9/6	04.05.17	<b>UNIT - 8</b> <b>URBAN TRANSPORT PLANNING FOR SMALL AND MEDIUM CITIES:</b>	“		
59	1/7	05.05.17	Difficulties in transport planning	“		
60	2/7	11.05.17	Recent Case Studies on bengaluru metro	“		
61	3/7	12.05.17	Recent Case	“		
62	4/7	13.05.17	Recent Case studies	Seminar		
63	5/7	11.05.17	Advanced software used in Urban	“		

			transport planning training			
64	6/7	12.05.17	Advanced software used in Urban transport planning training	“		
65	7/7	13.05.17	Advanced software used in Urban transport planning training	“		
66	8/7	15.05.17	Revision Problems	“		
67	1/8	16.05.17	Question paper discussion	“		
68	2/8	17.05.17	Question paper discussion	“		
69	3/8	18.05.17	Question paper discussion	“		
70	4/8	19.05.17	Class test	“		
71	5/8	22.05.17	Class test	“		
72	6/8	23.05.17	Discussion	“		
73	7/8	24.05.17	Problems discussion	“		