

M.D. University, Rohtak

UNIVERSITY INSTITUTE OF ENGINEERING & TECHNOLOGY

MAHARHI DAYANAND UNIVERSITY ROHTAK

Dgn-ucc/e-lev/1191
21.8.13

Subject: Correction of Typographical Mistake in the scheme of B.Tech (Civil Engineering) 5th semester 'F' Scheme — *effective from 2011-12.*

Ac-3698
13/8/13

There is a minor typographical mistake in the above said syllabus of B.Tech 5th semester Civil Engineering in 'F' Scheme. The Transportation Engg.-I (CE-303-F) specified in the scheme, but in the syllabus of Transportation Engg.-I, by mistake the subject code is ~~written~~ written as CE-310-F instead of CE-303-F. The present scheme and syllabus highlighting the correction to be made are also enclosed for your reference.

UIET-1457
13/8/13

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DIRECTOR *S. H. K.*
13/8/13

g/c (Acad.)
13/8/13

(ACADEMIC BRANCH)

Endts.No.ACS-H/F-81/2013/ *13858-61*

Dated *19/8/13*

Copy of ^{above} ~~pro-para~~ is forwarded to the following for information and necessary action:-

1. The Director, UIET, M.D. University, Rohtak.
2. The Director, University Computer Centre, M.D. University, Rohtak. He requested to arrange to upload this letter on the University Website.
3. The Assistant Registrar, (Secreacy), M.D. University, Rohtak.
4. The Assistant Registrar, (R-III), M.D. University, Rohtak.

CS
21/8

Shweta
19/8/13
Superintendent (Academic)

MAHARSHI DAYANAND UNIVERSITY, ROHTAK
SCHEME OF STUDIES & EXAMINATIONS
B.Tech. 3rd YEAR CIVIL ENGINEERING, SEMESTER- V
Proposed "F" Scheme effective from 2011-12

Subject Code	Subject Name	L	T	P	Total	Sessional Marks	Theory Marks	Sem Practical Marks	Total Marks
CE-301-F	Design of Steel Structure- I	3	1	-	4	50	100	0	150
CE-303-F	Transportation Engg.-I	3	1	0	4	50	100	0	150
CE-305-F	Water Supply-Treatment	3	1	0	4	50	100	0	150
CE-307-F	Soil Mechanics	3	1	0	4	50	100	0	150
CE-309-F	Numerical Methods And Computing Techniques	3	1	0	4	50	100	0	150
CE-311-F	Hydrology	3	1	0	4	50	100	0	150
CE-313 F	DSS-Drg.Lab	2	0	3	5	25	-	25	50
CE-315-F	Soil Mechanics Lab	0	0	2	2	25	0	25	50
CE-317 F	Transportation Lab-I	0	0	2	2	25	0	25	50
CE-319-F	Survey Camp	0	0	0	0	50	0	0	50
CE-321-F	Auto Cad Lab	0	0	2	2	25	0	25	50
	Total	20	6	9	35	450	600	100	1150

Note:

- 1) Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.
- 2) Assessment of Practical Training-I, undergone at the end of IV semester, will be based on seminar, viva-voce, report and certificate of practical training obtained by the student from the industry. According to performance letter grades A, B, C, F are to be awarded. A student who is awarded 'F' grade is required to repeat Practical Training.

✓ CE-303-F

~~CE-310~~ F TRANSPORTATION ENGINEERING- I

L T P

3 1 -

Sessional: 50 Marks

Theory : 100 Marks -

Total : 150 Marks

Duration of exam: 3 Hrs.

Note: Examiner will set 9 questions in total, two questions from each section and one question covering all sections which will be Q.1. This Q.1 is compulsory and of short answers type. Each question carries equal marks (20 marks). Students have to attempt 5 questions in total at least one question from each section.

SECTION-A

UNIT-I

Highway Plans, Highway Alignment and Surveys

Main features of 20 years road development plans in India. Requirement of an ideal high way alignment. Factors affecting alignment, Surveys for high way alignments.

Classifications of roads. Objectives of highway planning. surveys Saturation system of planning.

UNIT -II

Cross section elements and sight distance considerations.-Cross section elements, friction, carriage way, formation width, land width, camber,IRC recommended values. Types of terrain design speed, sight distance ,stopping sight distance, overtaking sight distance ,overtaking zones, intermediate sight distance ,sight distance at inter sections, head light sight distance, set back distance.Critical locations for sight distance.

SECTION-B

UNIT -III

Design of horizontal and vertical alignments-

Effects of centrifugal force. Design of super elevation. Providing super elevation in the field.Radiuos of circular curves. Extra widening. Type and length of transition curves.Gradiednt, types, values.Smmit curves and valley curves, their design criterions. Grade compensation on curves.

UNIT-IV

Traffic characteristics and traffic surveys, road user and vehicular characteristics .Traffic studies such as volume, speed and O & D studies. Parking and accident studies. Fundamental diagram of traffic flows. Level of service.PCU.Capacity for non urban roads. Causes and preventing measures for road accidents.

SECTION-B

UNIT -V

High way materials

Sub grade soil evaluation, CBR test, plate bearing test, desirable properties of aggregatesa, various testes ,testing procedures and IRC/IS specifications for suitability of aggregates

Types of Bituminous materials.

Bitumen, tar, Cut back, emulsions. Various tests, testing procedures and IRS/IS specifications for stability of bituminous materials in road construction. Bituminous mix, desirable properties. Marshall method of mix design. Basic concept of use of polymers and rubber modified bitumen in bituminous mixes.

SECTION-C

UNIT -VI

Rail way Transport

System of rail ways, permanent ways, components, requirements of gauge, gauge, types of gauges, rails, function of rails, composition, types of rails, length of rail, rail joints, type of rail joints, coning and wheel, tilting, failure of rails, creeps, wearing, buckling, welding, Sleepers, Types of sleepers Functions, Requirements, Ballasts, Functions, Types of ballast size and sections, and quantities, fixture and fastening, function, type of fastening, requirements, spikes, types of spikes, bolts, keys,.

SECTION-D

UNIT-VII

Track geometries, gradients, types of gradients, curves, types of curves, super elevations, relation super elevation with gauge, speed and radius of curves, pointing crossing, technical terms, turn out, switches, type of switches, crossings, type of crossing, junction, type of junction, plating, method of plating, relaying of track, method of relaying of track, railway station, purpose, site selection, requirements, classification of stations, yards, classification of yards, necessity of equipments, level crossing, signals, classification of signals, interlocking, method of inter locking, Maintenance and drainage, classification of maintenance.

UNIT -VIII

Tunnels-Necessity of tunnels, classification of tunnels, shape of tunnels, cross section of tunnels, surveying of tunnels, shafts, purpose of shafts, construction of shafts, lining of tunnels, types of lining, construction of lining and methods of lining. Maintenance and drainage of tunnels.

Books Recommended:

1. Highway Engg by S.K.Khanna & C.E.G. Justo, Nem Chand Bros., Roorkee.
2. Principles and Practice of Highway Engg. by L.R.Kadiyali, Khanna Publishers, Delhi.
3. Principles of Pavement Design by Yoder, E.J & Witczak, M.W., John Wiley and Sons, USA.
4. Tunnel Engineering by S.C.Saxena, Dhanpat Rai Publications, N.Delhi.
5. A text book of Tunnel, Bridges and Railway Engg. by S.P.Bindra, Dhanpat Rai Delhi.
6. Railway Engineering by N.L.Arora