

Course No.	CEL302	Open course(Y/N)	HM Course (Y/N)	Discontinued (Y/N)
Course Title	Transportation Engineering			
Course Coordinator	Dr. Anjan Patel			
Slot in which offered. If not offered write N	Odd	Even		
Structure	Lecture	Tutorial	Practical	Credits
	3	0	2	8
Prerequisite Course Codes As per proposed Course Numbers	Survey			
Prerequisite credits	-			
Equivalent Course Codes. As per proposed courses and old courses				
Overlap course codes As per proposed Course Numbers				
Text Book (Max. 2)	Title	Highway Engineering		
	Author	S.K.Khanna, C.E.G Jesto		
	Publisher	Nemi Chand Brithers Roorkee		
	Edition	Latest		
	Title	Traffic Engineering and transportation Planning		
	Author	DR.K.R.Kadiyali		
	Publisher	Khanna Publisher		
	Edition	Seventh edition		
	Title	Bridge Engg		
	Author	Bindra		
	Publisher	Dhanpat Rai		
Reference Books	Title	Highway Engineering		
	Author	Paul H. Wright and Karen Dixon		
	Publisher	John Willey & Sons		
	Edition			
	Title	Transportation Engineering & Planning (3 rd Edition)		
	Author	C.S Papacostas & P.D. Prevedouros		
	Publisher	John Willey & Sons		
	Edition	3 rd		
	Title	Traffic and Highway Engineering		
	Author	Garber N.J. & Lester A. Hoel		
	Publisher	West Publishing Co. New York		
	Edition			
	Title	Transport Planning and Traffic Engineering		
	Author	O' Flaherty & Coleman.A.		
	Publisher	Edward Arnold U.K.		
	Edition			

	Title	Principles of Highway Engineering and Traffic Analysis
	Author	Fred. L. Mannering, Walter P. Kilareski
	Publisher	John Willey & Sons
	Edition	
	Title	
	Author	
	Publisher	
	Edition	
Content	<p>Introduction: Fundamentals of Transportation System, spatial significance of transportation system, impact on life style, components of the system, Transportation Scenario in India, Five year plans, privatisation Efforts, Multilateral funding, Modern Transportation,</p> <p>Development & Planning : Road transport Characteristics, Classification of roads, development plans, network patterns, data collection & surveys, principles of alignment, evaluation of plan proposals; Traffic Engineering : 3E's of, traffic characteristics, Surveys, Intersection-types, layouts, design principles, Urban traffic, parking, lighting, Accidents, Traffic control Devices-marking, Signs, Signals, Regulations Motor Vehicle Act & Rules</p> <p>Materials: Subgrade Soil – AASHO Classification, group Index, Subgrade soil Stabilization. CBR, aggregate Physical and Mechanical properties & tests-Bituminous materials classification sources properties and tests. Cutback & Emulsions, modified Bitumen IRC/IS Standards, Introduction to Geotextiles; Construction & Maintenance: IRC, MOST specifications for quality & quantity of materials, techniques, tools and plant, for the Earthwork, sub base, base and wearing / surfacing course of flexible pavements with gravel, W.B.M., WMM, stabilized Bituminous & concrete as Construction material, Drainage, shoulders, maintenance & repairs</p> <p>Geometric Design : Road, road user & road vehicle characteristics, Factors affecting design standards. Cross Section elements, stopping & overtaking sight distance overtaking zones. Horizontal alignment-Curves, design of super elevation, widening, 'transition curves, vertical alignments, Design of summit and Valley Curves, I.R.C. standards for Geometric Design, Geometrics of Hill Roads; Pavement Design : Types of pavements & characteristic, Design parameters, Axle & Wheel load, tyre pressure, ESWL for dual Wheels, repetitions, Group Index & CBR method of flexible pavement design. Analysis of load & temperature stresses for rigid pavement, joints.</p> <p>Bridges: General : Components, classification and identification, Data Collection site selection, Economic Span; Hydrology: Estimation of flood, discharge, water way, scour depth, depth of foundation, Afflux, clearance and free board. Loads, Forces, Stresses: IRC Specification & code of practices, Critical combinations; Sub-Structure: (A)Types of foundations & their choice, estimation of BC of foundation strata, Open, Raft, Pile and well foundation, pneumatic Caissions, cofferdams. (B) Abutment, Piers & Wingwalls Their types, general design principles (empirical), Choice of Super Structure : Culverts, causeways, minor and major bridges, different structural forms and actions. suitability and choice, precast post tensioned and segmental construction. Launching, operation systems, Bearings, Aesthetics; Rating & Maintenance: Methods & Techniques of rating of existing bridges Inspection, Repairs, maintenance, corrosion-causes and prevention</p>	
Course No.		

Course No.:	CEL303	Open Course (Y/N)	HM Course (Y/N)	Discontinued (Y/N)
Course Title: Environmental Engineering-II				
Course Coordinator: Dr. V.A. Mhaisalkar				
Slot in which offered, if not offered write N	Odd		Even	
	A			
Structure	Lecture	Tutorial	Practical	Credits
	3	0	0	6
Prerequisite Course Codes As per proposed Course numbers				
Prerequisite Credits				
Equivalent Course Course Codes. As per proposed Courses & old courses				
Overlap Course Codes As per proposed Course numbers				
Text Book (Max. 2)	Title	Air Pollution		
	Author	M.N. Rao and H.V. N Rao		
	Publisher	Tata Mc-Graw Hill Publishing Co. New Delhi, 1992		
	Edition	Third		
	Title	Solid Waste Management, Collection, Processing and Disposal		
	Author	A.D. Bhide and B.B. Sundaresan		
	Publisher	Mudra Offset Printers, Bajaj Nagar Nagpur		
	Edition	2001		
Reference Books	Title	Air Pollution Control Engineerg		
	Author	N.D.Nevers		
	Publisher	McGraw Hill International Editions Civil Engineering series		
	Edition	1995		
	Title	Environmental Pollution Control Engg.		
	Author	C.S. Rao		
	Publisher	New Age International Pvt. Ltd. Publishers		
	Edition	2002		
	Title	Integrated Solid Waste Management Engineering Principles and Management Issues		
	Author	G. Techobanoglous, H. Theisen , S.A. Vigil		
	Publisher	Tata McGraw Hill International Editions Civil Engg. Series		
	Edition	1993		

	<table border="1"> <tr> <td>Title</td> <td>A Textbook of Air Pollution and Control Technologies</td> </tr> <tr> <td>Author</td> <td>Y. Anjaneyulu</td> </tr> <tr> <td>Publisher</td> <td>Allied Publishers, Nagpur</td> </tr> <tr> <td>Edition</td> <td>2002</td> </tr> </table>	Title	A Textbook of Air Pollution and Control Technologies	Author	Y. Anjaneyulu	Publisher	Allied Publishers, Nagpur	Edition	2002
Title	A Textbook of Air Pollution and Control Technologies								
Author	Y. Anjaneyulu								
Publisher	Allied Publishers, Nagpur								
Edition	2002								
Content	<p>Introduction to Environment, atmosphere, Air Pollution: Definition, Classification and sources of air pollutants, Meteorology and Air Pollution: Meteorological parameters affecting air pollution (primary and secondary), Atmospheric stability, inversion types, plume behaviours, Air pollution dispersion models. Effects of air pollutants on man, animals, plants and materials. Air Sampling and Measurement: Ambient air sampling and stack sampling, collection of particulate and gaseous pollutants, methods of estimation. Air pollution control methods and equipments: Principle of control methods for particulate and gaseous pollutants, settling chambers, filters, electrostatic precipitators, cyclones, wet scrubbers. Automobile Exhaust: Pollution due to diesel and petrol engines, exhaust treatment and abatement. Noise pollution, ill effects and control measures. Green house effect, photochemical smog, acid rains.</p> <p>Introduction to solid waste management, Sources, quantity and quality, Sources of solid waste, classification and components, physical and chemical characteristics, per capita contribution, sampling and analysis. Collection and transportation of solid waste, Collection systems, equipments used for collection and transportation, transfer station. Solid Waste Processing, Methods of processing, choice of method, merits and demerits of various methods. Composting of Waste: Principles of composting, factors affecting composting and methods of composting used in India. Sanitary land filling, site requirements, methods, leachate management. Incineration: Principles, types of incinerators, advantages and disadvantages.</p>								
Course No.									

Course No.	AML3xx	Open course (Y/N)	HM course (Y/N)	Discontinued (Y/N)	
Course Title	Structural Analysis				
Course Coordinator	MMM				
Slot in which offered. If not offered write N	Odd		Even		
	C				
Structure	Lecture	Tutorial	Practical	Credits	
Prerequisite Course Codes As per proposed Course Numbers					
Prerequisite credits					
Equivalent Course Codes. As per proposed courses and old courses					
Overlap course codes As per proposed Course Numbers					
Text Book (Max. 2)	Title				
	Author				
	Publisher				
	Edition				
	Title				
	Author				
	Publisher				
	Edition				
Reference Books	Title				
	Author				
	Publisher				
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	Author	
	Publisher	
	Edition	
	Title	
	Author	
	Publisher	
	Edition	
Content		
Course No.		

Course No.	CEL304	Open course (Y/N)	HM Course (Y/N)	Discontinued (Y/N)	
Course Title	<u>Concrete Engineering</u>				
Course Coordinator	Dr. A. D. Pofale / A.G. Tawalare				
Slot in which offered. If not offered write N	Odd		Even		
	G				
Structure	Lecture	Tutorial	Practical	Credits	
	3	0	2	8	
Prerequisite Course Codes As per proposed Course Numbers	CEL2*** Strength of Materials				
Prerequisite credits					
Equivalent Course Codes. As per proposed courses and old courses	CEL267 Concrete Engineering				
Overlap course codes As per proposed Course Numbers	CEL267 Concrete Engineering				
Text Book (Max. 2)	Title	Concrete Technology			
	Author	Gambhir M.L			
	Publisher	Tata McGraw Hill			
	Edition	Second, 1995			
	Title	RCC Theory and Design.,			
	Author	Shah M.G. ,Kale.C.M.			
	Publisher	Macmillan India Ltd.			
	Edition	1987			
Reference Books	Title	Prestressed Concrete			
	Author	N. Krishnaraju;			
	Publisher	Tata McGraw Hill			
	Edition	(Third Edition) 1981			
	Title	Concrete Technology			
	Author	M.S.Shetty			
	Publisher	S.Chand & Company New Delhi			
	Edition	2005			
	Title	Concrete Technology -Vol I.			
	Author	Orchard D.F.			
	Publisher	Applied Science Publishers			
	Edition	(Fourth Edition) 1979.			
	Title	Properties of Concrete,			
	Author	Neville A.M & J.J.Brook;			
Publisher	Addison Wesley				
Edition	1999				

	Title	Design of prestressed concrete structures.
	Author	Lin T.Y,Burns N.H.;
	Publisher	John Wiley & sons
	Edition	.(Third Edition).1982
	Title	Reinforced Concrete Design
	Author	S. Ramamurtham
	Publisher	Dhanpat Rai Publications
	Edition	2009
Content	<p>Concrete Technology</p> <ol style="list-style-type: none"> 1. Portland cement: Types and properties, Tests on Portland cements, Aggregates: classification function, and types. Properties and Tests on aggregates. Water: its quality and recommendations. Production of concrete: mixing, casting, compacting and curing of Concrete, workability concept, tests, workability factors, Admixtures: Purpose, use and Types 2. Hardened concrete: Tests on concrete, properties and factors affecting properties of concrete,, Non destructive tests on concrete, Concrete mix design and methods of mix design Concepts of durability, Types of concrete 3. Concepts of Prestressed concrete: Materials, their properties, advantage and disadvantages, methods of prestressing & prestressing systems, Losses in prestress, <p>Design of R. C.C. and Prestressed Concrete (W.S.M)</p> <ol style="list-style-type: none"> 4. Reinforced concrete: Design concept, I.S.456-2000 for working stress method, Working stress method: Flexural behaviour of beam under load, Analysis and design of singly reinforced, doubly reinforced rectangular beam sections and “T” and “L” beam sections, Shear and bond stress 5. Design of simply supported and cantilever beams, Lintels, one-way slab, and cantilever canopy. Design of axially loaded columns and axially loaded isolated footing. 6. Prestressed concrete: Analysis by Homogeneous beam concept, load-balancing concept, pressure Line. Design of simple rectangular sections like slab and beam 	
Course No.		