

Syllabus for Even Semester For Session 2010-11

Department :

Course No.	CEL202	Open Course (Y/N)	HM Course (Y/N)	Discontinued (Y/N)	
Course Title	Hydraulics Engineering				
Course Coordinator	Dr. A.D. Vasudeo				
Slot in which offered. If not offered write N	Odd		Even		
			B		
Structure	Lecture	Tutorial	Practical	Credits	
	3	0	2	8	
Prerequisite Course Codes As per proposed Course Numbers					
Prerequisite credits					
Equivalent Course Codes. As per proposed courses and old courses	Fluid Mechanics I and Fluid Mechanics II				
Overlap course codes As per proposed Course Numbers					
Text Book (Max. 2)	Title	Engineering Fluid Mechanics			
	Author	Garde R.J. and Mirajgaokar A.G.;			
	Publisher	Scitech Publication			
	Edition	2003			
	Title	Theory and Applications of Fluid Mechanics			
	Author	Subramanya K.			
	Publisher	Tata McGraw Hill Publication			
	Edition	1996			
Reference Books	Title	Fluid Mechanics,;			
	Author	Streeter V.L. and Wyle E.B.;			
	Publisher	International Students Edition			
	Edition	1986			
	Title				
	Author				
	Publisher				
	Edition				
	Title				
	Author				
	Publisher				
	Edition				

	Title	
	Author	
	Publisher	
	Edition	
	Title	
	Author	
	Publisher	
	Edition	
Content	<p>Fluid Properties and measurement of pressure – manometers and gauges, Hydrostatics- Total pressure and centre of pressure, pressure forces on vertical and inclined laminae, pressure on curved surfaces, Buoyancy and floatation – Centre of buoyancy, body immersed in two different fluids, metacentre, metacentric height, stable, unstable and neutral equilibrium</p> <p>Types of fluid flows and flow lines, Methods of describing fluid motion, Flownet, Fundamental equations of fluid flow, Venturimeter, Orifice and mouthpiece, Notches and weirs</p> <p>Elements of flow through pipes: Darcy Weisbach formula, Hydraulic Gradient Line, Total Energy Line, Minor losses, series and parallel connections</p> <p>Introduction to open channel flow: Manning’s and Chezy’s formula, Most economical section of channel, Uniform flow and Critical flow, Hydraulic jump elements</p> <p>Types of hydraulic turbines, Working principles of Centrifugal and Reciprocating pumps</p> <p>Practicals :</p> <p>Experiments on Ship model, triangular notch, rectangular notch, orifice, mouthpiece, manometers and pressure gauges, pitot tube, friction factor of pipeline, Chezy’s and Manning’s constant for a channel, venturimeter</p>	
Course No.	CEL202	

Course Content Proforma				
Department: Civil Engineering				
Course No.:	CEL206	Open Course (Y/N)	HM Course (Y/N)	Discontinued (Y/N)
Course Title: Engineering Geology				
Course Coordinator: Dr. Y. B. Katpatal				
Slot in which offered, if not offered write N		Odd		Even
		D		
Structure		Lecture	Tutorial	Practical
		3	0	2
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	Principles of Engineering Geology		
	Author	KVGK Gokhale		
	Publisher	BS Publications		
	Edition			
	Title	Fundamentals of Engineering Geology		
	Author	F.G.Bell		
	Publisher	BS Publications		
	Edition	2005		
Reference Books	Title	Engineering Geology		
	Author	Parbin Singh		
	Publisher	S K Katariya & Sons		
	Edition	Sixth Edition		
	Title	Principles of Physical Geology		
	Author	Homes Arthur and Homles Doris		
	Publisher	EIBS Publications		
	Edition	1987		

	Title	A geology for Engineers
	Author	F.G. H. Blyth & M.H. de Freitas
	Publisher	Elsevier
	Edition	Seventh Edition
Content	<p>General Geology : Scope of Engineering Geology, internal structure of the earth. Continental drift and Plate Tectonics; Isostasy and diastrophism.</p> <p>Mineralogy: Definition and classification of Minerals, Structure, Chemical and physical characters of Mineral Groups; Silica, Felspar, Olivine, Pyroxene, Amphibole, Mica and Clay.</p> <p>Petrology: Rock Cycle; Igneous rocks: Genesis of Igneous rocks; Textures, structures and forms of Igneous rocks, Tabular classification. Sedimentary Rocks: Genesis of sedimentary rocks, classification textures and structures of sedimentary deposits. Metamorphic Rocks: Metamorphism, agents and kinds of metamorphism, textures, structure and classification of metamorphic rocks.</p> <p>Structural Geology: Rock Deformation; Attitude of rocks, Mechanism of formation, nomenclature classification and field identification of Folds, Joints, Faults. Problems on Strike, Dip, thickness and depth of strata.</p> <p>Geomorphology: Definition & Scope; Basic concepts; internal and external processes; Geomorphological classification, weathering and erosion</p> <p>Stratigraphy: Definition, scope & principles of Stratigraphy, Unconformities, stratigraphic units; Physiographic and tectonic divisions of India; Review of Indian Stratigraphy.</p> <p>Civil Engineering Applications: Geomechanical properties and Classification of rocks and basement characteristics; construction material, road metal etc.</p> <p>Surface and subsurface geological investigations; Geological, geophysical and remote sensing studies; Site investigations for design & construction of Dams, Bridges, Tunnels, buildings.</p> <p>Engineering Seismology: Causes and effects of earthquakes; Seismic waves, energy release, magnitude, intensity, seismic zoning & seismic Zones of India; Characteristics of strong ground motion, aseismic structures.</p> <p>Geohydrology: Occurrence, availability & movement of Groundwater; Rocks as aquifers, Groundwater investigations, groundwater development and management; Techniques of groundwater recharge.</p> <p>Stability of Slopes & Landslides: Causes and prevention</p> <p>Environmental aspects of Geology.</p>	
Practical	<p>Megascopic study of Minerals and Rocks</p> <p>Geological maps and Profiles</p> <p>Three point and Dip Strike problems</p> <p>Electrical Resistivity Survey</p> <p>Ground Penetration Radar Survey</p>	
Course No.		

Course No.	CEL203	Open Course (Y/N)	HM Course (Y/N)	Discontinued (Y/N)		
Course Title	Environmental Engineering I					
Course Coordinator	Dr. A. R. Tembhurkar					
Slot in which offered. If not offered write N	Odd		Even			
			A			
Structure	Lecture	Tutorial	Practical	Credits		
	3	0	2	8		
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	Water Supply Engineering –				
	Author	B.C. Punmia				
	Publisher					
	Edition					
	Title	Environmental Engineering –				
	Author	S.K. Garg				
	Publisher					
	Edition					
	Reference Books	Title	Metcalf, Eddy, “Wastewater Engineering”-			
		Author	McGraw Hill Publication			
Publisher						
Edition						
Title		M.J. Macghee, “Water Supply & Sewage –				
Author		McGraw Hill Publication				
Publisher						
Edition						
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Content	<p>Importance and necessity of water supply scheme; planning of WSS; design period; population forecasting; water demand; sources of surface water, ground water, intake structure; conveyance of water, types of pipe joints and fitting; hydraulic design of pipes, rising main; pumps; water quality, standards of drinking water, Theory and application of water treatment unit operation and processes, aeration, coagulation, flocculation, sedimentation, filtration, disinfection; Selection of site and processes of water treatment, treatment flowsheet,; Distribution system, appurtenances, detection and prevention of leakage, storage reservoir for treated water. Introduction to solid waste management.</p>	
Course No.		

Course No.	CEL205	Open Course (N)	HM Course (N)	Discontinued (N)
Course Title	Building Design and Drawing			
Course Coordinator	S.R.Dongre			
Slot in which offered. If not offered write N	Odd		Even	
			F	
Structure	Lecture	Tutorial	Practical	Credits
	2	0	2	6
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	Building Drawing		
	Author	Shah, Kale & Patki		
	Publisher	TMH publication		
	Edition	Fourth Edition		
	Title	A course in Civil Engineering Drawing		
	Author	Sikka V.B		
	Publisher	S.K. Kataria & Sons publication, 1997		
	Edition			
Reference Books	Title	IS: 1256-1958 (IS Code of building byelaws)		
	Author	Indian Standard		
	Publisher	-		
	Edition	-		
	Title	Time Saver Standard		
	Author	Dodge F. W.		
	Publisher	F. W. Dodge Corp.		
	Edition	3 rd		
	Title			
	Author			
	Publisher			
	Edition			
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	Title	
	Author	
	Publisher	
	Edition	
Content		<p>Theory:</p> <ol style="list-style-type: none"> 1. Importance of Building drawing as Engineer's Language in construction & costing. 2. Selection of scales for various drawings, thickness of lines, dimensioning, Combined First angle and Third angle method of projection, abbreviations and conventional representations as per IS: 962, 1967. Free hand dimensioned sketches of various building elements and its importance in Civil Engineering. 3. Developing working drawing to scale as per I.S. 962, from the given sketch. Design and general specifications for different components of the building including terraced and pitched roofs. Developing submission drawings to scale with location plan, site plan and block plan. 4. Study of building bye-laws and Principals of planning. Planning of residential and public buildings, recommendations of CBRI, Roorkee. 5. Graph paper drawing (line plans) based on various requirements for Residential, Public, Educational, Industrial Buildings and Interior aspects as well. 6. Two point perspective of Residential building neglecting small elements of building such as plinth offset, Chajja projections etc. <p>Practical:</p> <ol style="list-style-type: none"> 1. Working drawing of single storied residential building of terrace and pitched roofs with foundation plan of load bearing structure. (Two assignment) 2. Submission drawing of single storied residential building (framed structure) with access to terrace including all details and statements as per the local bye-laws. (One assignment A1 sheet) 3. Working drawing of multistoried Public / Educational/ Health / Community / Industrial building including structural details and layout of services. (One assignments) 4. Two point perspective of the single storied

		<p>Residential building neglecting small building elements. (Two assignments – pitched & terrace roof)</p> <p>5. Minimum 30 free hand self-explanatory dimensioned sketches of various building elements in sketch book.</p> <p>6. Line plans of various types of buildings e.g. Public / Educational / Industrial / Hospital / Community on graph papers (04 assignments)</p> <p>7. One compulsory field exercise.</p>

COURSE CONTENT PROFORMA

Course No.	CEL306	Open Course (Y/N)	HM Course (Y/N)	Discontinued (Y/N)		
Course Title	Surveying-II					
Course Coordinator	Dr. Anjan Patel					
Slot in which Offered	ODD		EVEN			
			G			
Structure	Lecture	Tutorial	Practical	Credits		
	3	0	2	8		
Prerequisite Course Codes						
Prerequisite Credits						
Equivalent course Codes						
Overlap Course Codes						
Text Books	Title	Surveying II				
	Author	B. C. Punmia				
	Publisher	Standard Book-House				
	Edition	Latest				
	Title	Surveying Volume II				
	Author	S. K Duggal				
	Publisher	Tata McGraw Hill				
	Edition	Latest				
Reference Books	Title	Higher Surveying				
	Author	A M Chandra				
	Publisher	New Age International Publication				
	Edition	Latest				
	Title	Surveing & Levelling-Part II				
	Author	T. P. Kanetkar & S. V. Kulkarni				
	Publisher	Pune Vidhyarthi Griha Prakashan, Pune				
	Edition	Latest				
	Title	Surveying				
	Author	Arthur Bannister, Stanley Raymond, Raymond Baker				
	Publisher	Person Education				
	Edition					
	Title					
Author						
Publisher						

	Edition	
Content	<p>Theory:</p> <ol style="list-style-type: none"> 1. Curves: Types, Elements, Methods & Setting out curves 2. Geodetic Surveying: Triangulation, classifications, reconnaissance, base line measurements 3. Triangulation: Laws of weights, errors & adjustments 4. Field Astronomy: Spherical trigonometry, Latitude & Longitude, Astronomy Terms, Co-ordinate System, Corrections. 5. Photographic Surveying: Photo-theodolite, terrestrial photogrammetry, stereo photogrammetry, aerial surveying. 6. Hydrographic Surveying: Shore-line survey, soundings, methods, reductions plots, tides. <p>Practicals:</p> <ol style="list-style-type: none"> 1. Base Line Measurement 2. Study and Application of Auto Level 3. Study and Application of Total Station 4. Setting out of simple curves – linear methods 5. Setting out of simple curves – angular method 6. Setting out of transition curve 7. Computation of geodetic position 8. Correction of geodetic quadrilateral 9. Triangulation Adjustments 10. Determination of Azimuth <p>Field Visit: 3 days Survey Camp will be conducted as a part of course curriculum</p>	
Course No.		