

COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3 32 CGPA Recognized under 2(f) & 12(B) of UGC Ad. 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G. DT., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF CIVIL ENGINEERING TEACHING PLAN

Course Code	Course Title		Semester	Branch	Contact Periods per Week	Academi Year	c co	Date of mmencem ent of Semester
23CE4T01	ENGINEERI GEOLOGY	2000	IV	CE	5	2024-2	5 10	5-12-2024
COURSE O	UTCOMES: St	udents	are able to	0				
1	Understand the significance of geological agents on Earth surface and its significance in Civil Engineering. (K2)							
2	Identify and understand the properties of Minerals and Rocks. (K2)							
3	Explain the concepts of Groundwater and its geophysical methods. (K2)							
4	Classify and measure the Earthquake prone areas, Landslides and subsidence to practice the hazard zonation. (K2)							sidence to
5	Investigate the for mega engin							te selection
UNIT	Out Comes / Bloom's Level	Topi No.		Topics/A	ctivity	Text Book / Reference	Con tact Hou r	Delivery Method
		Unit -		nes of Geol		T2,R1	1	
	CO1: Understand the significance of geological agents on Earth surface and its significance	1.2	Import	tance of Ge Engineering	ology in	T2,R1	1	
I		1.3	Weath rocks (Des: 1 change rocks a rocks)	ering: Weath How weath es the forma and factors	ering ation of affecting the	T2,R1	1	Chalk & Talk, Active Learning
		1.4		Geological agents in weathering of rocks		T2,R1	1	
	in Civil	1.5	weath	ering proce	ss of rock	T2,R1	1	
	Engineering. (K2)	1.6	develo	rmation of r	of rocks in iver beds and	T1, T2, R1	1	
		1.7		ent stages o	of river	T1, T2, R1	1	



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			mpuram, W.G.DT., Narsapur-5342	Total	anes	
	T	¥1.	nit-2 : MINERALOGY AND PE		, —	0.
						1
		2.1	Definitions of mineral and	T1,R1	1	
			rock	mi ni	-	1
		2.2	Different methods of study	T1,R1		
			of mineral and rock		1	
			(Des: Methods to identify			
			rock and its formation)			1
		2.3	The study of physical	T1,R1	1	
			properties of minerals			
		2.4	The study of physical	T1,R1	1	1
			properties of rocks		1	
		2.5	Common rock forming	T1,R1		1
			minerals like Feldspar, Quartz		1	
			Group, Olivine			
		2.6	Common rock forming	T1,R1		
			minerals like Augite,			
	CO2:		Hornblende, Mica Group,		1	١.
	Identify and		Asbestos, Talc, Chlorite,			1
II	understand	2.7	Kyanite, Garnet, Calcite			
	the properties	2.7	in in it is a second of the interest of the in	T1,R1		1
	of Minerals and Rocks. (K2)	1	Pyrite, Hematite, Magnetite,	-	1	
		2.8	Chlorite, Galena,			
		2.0	Pyrolusite, Graphite,	TI,R1		1
		1	Chromite, Magnetite and Bauxite.		1	
		2.9	Classification, structures,			
			textures and forms of Igneous	T1,R1		
			rocks		1	
		2.10	Classification, structures,			
			textures and forms of	T1,R1		
			Sedimentary rocks,		1	
		2.11	Metamorphic rocks and their	TIDI		
			megascopic study of granite	T1,R1		
			varieties, (pink, grav, green)			
			Pegmatite, Dolerite, Basalt		1	
			,Shale,			
		2.12	Study of sand stone, Lime	T1,R1		-
			stone, Laterite, Quartzite.	11,101		
			Gneiss	1	1	
		2.13	Study of Schist, Marble,	T1,R1	200	1
			Khondalite and Slate	,,,,,,	1	
	1	77		Total		1
		Unit-	III : STRUCTURAL GEOLOGY -	- GEO PHYS	ICS	
		3.1	Strike, Dip of common	T1,R1	30	1
			geological structures		1	



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		_	Marsapur-5342	BU, (Andria	Pladesi	1)
		3.2	Outcrop study of common geological structures	T1,R1	1	
		3.3	Folds associating with the rocks (Des: Identification of different folds and faults in the formation of rocks)	TI,RI	1	
	CO3:	3.4	Joints associating with the rocks (Des: Identification of different faults in the formation of rocks)	T1,R1	1	
ш	Explain the concepts of Groundwater and its geophysical	3.5	Unconformities associating with the rocks (Des: Identification of different folds and faults in the formation of rocks)	T1,R1	1	Chalk&
	methods. (K2)		Types of folds and their importance	T1,R1	1	talk, PPT, Active
		3.7	Types of faults in rocks and their importance	T1,R1	1	learning
		3.8	Mechanism and importance in civil engineering	T1,R1	1	
		3.9	Importance of Geophysical methods	T1,R1	1	
		3.10	Classification of Geophysical methods	T1,R1	1	
		3.11	Principles of Geophysical study by Gravity method (Des: Different methods to study geophysical nature of rocks and their formation)	TI, RI	1	
		3.12	Principles of Geophysical study by Magnetic method	T1,R1	1	No.
		3.13	Electrical methods	T1, R1	1	1.0
		3.14	Seismic methods	T1,R1	1	
		3.15	Radiometric method (Des: Different methods to study geophysical nature of rocks and their formation)	T1,R1	1	
		3.16	Electrical resistivity (Des: Different methods to study geophysical nature of rocks and their formation)	T1,R1	1	
		3.17	Seismic refraction methods	T1,R1	1	1
	3.18	Engineering properties of rocks	T1, R1	1		



SWARNANDHE

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UNIT-IV: GROUND WATER- AND LAND SLIDES 4.1 Concept of ground water, water table 4.2 Concept of cone of depression 4.3 Ground water exploration techniques. (Des: Water table identification, groundwater alteration reasons) 4.4 Geological controls of ground water water Movement 4.5 Earthquakes and Land Slides: terminology, Classification, (Des: Earth quake reasons based on geological factors) 4.6 Causes and effects of earth quaker alteration reasons) 4.7 Shield areas and Seismic bells 4.8 Richter scale intensity 4.9 Precautions of building constructions in seismic areas 4.10 Classification of landslides, (Des: Landslides, (Des: Landslides) 4.11 Causes and effects of landslides, (Des: Landslides) 4.12 Measures to be taken prevent their occurrence at Landslides 4.12 Measures to be taken prevent site for mega/mini m					Total	Prade
4.1 Concept of ground water, water table 4.2 Concept of cone of depression 4.3 Ground water exploration techniques. (Des: Water table identification, groundwater alteration reasons) 4.4 Geological controls of ground water water Movement 4.5 Earthquakes and Land Slides: terminology, Classification, (Des: Earth quake reasons based on geological factors) 4.6 Causes and effects of earth quaker alteration reasons) 4.7 Shield areas and Seismic bells 4.8 Richter scale intensity 4.10 Classification of landslides, (Des: Landslides, (Des: Landslides, (Des: Landslides, (Des: Landslides, (Des: Landslides) 4.11 Causes and effects of landslides, (Des: Landslides) 4.12 Measures to be taken prevent their occurrence at Landslides 4.12 Measures to be taken prevent site for mega/mini			UNIT-	IV : GROUND WATER- 1	Total EARTHOUA	30
Value table			7 41 4 47 1	LAND SLIDES		IKES
CO4: CC9: CC9: CC9: CC9: CC9: CC9: CC9: CC					T1,R1	1
CO4: Classify and measure the Earthquake prone areas, and aubsidence to practice the hazard zonation, (K2) CO5: Investigate Investigate Investigate Investigate Investigate Investigate Investigate the projects and engineering engineering projects and site selection for mega minic civil company, and civil				Concept of cone of depression	T1,R1	1
IV Classify and water Movement 1 1 1 1 1 1 1 1 1		CO4:	4.3	techniques. (Des: Water table	TI,RI	
Landslides and subsidence to practice the hazard zonation. (K2) 4.6 Causes and effects of earth quakes 4.7 Shield areas and Seismic bells 4.8 Richter scale intensity 4.9 Precautions of building constructions in seismic areas 4.10 Classification of landslides, (Des: Landslides reasons, few preventation measures) 4.11 Causes and effects of landslides, (Des: Landslides reasons, few preventation measures) 4.12 Measures to be taken prevent their occurrence at Landslides 4.12 Measures to be taken prevent their occurrence at Landslides 4.11 Causes and effects of landslides 4.12 Measures to be taken prevent their occurrence at Landslides 4.13 Types of Dams 5.1 Types of Dams 5.2 Purpose of Dams 5.3 Tipes of Dams 5.4 Geological considerations in the selection of a Dam site (Des: Dam site selection of a Dam site (Des: Dam site selection of a Dam site (Des: Dam site selection of a Dam site (Des: Dam site selection of a Dam site (Des: Dam site selection of a Dam site selec	***	Classify and measure the Earthquake	0.000	alteration reasons) Geological controls of ground water Movement		1
And Tunneling engineering projects and solutions of Dams, Reservoirs And Dams, Reservoirs And Dams, Reservoirs	IV	Landslides and subsidence to		(Des: Earth quake reasons based on geological factors)	T1,R1	1
4.9 Precautions of building constructions in seismic areas 4.10 Classification of landslides, (Des: Landslides reasons, few preventation measures) 4.11 Causes and effects of landslides 4.12 Measures to be taken prevent their occurrence at Landslides 4.12 Measures to be taken prevent their occurrence at Landslides 4.11 Types of Dams Investigate the project site for site for gengineering engineering projects and for mega For mega engineering projects like projects like Dams, Dams, Dams, Dams, Passervoirs For mega engineering projects like Dams, Reservoirs For mega engineering projects like Dams, Reservoirs For mega engineering projects like Dams, Reservoirs For mega engineering projects like Dams, Engineering Projects like Selection of a Dam site Selection of a Dam site Projects Ity Projects		hazard	4.7	_ quakes	T1,R1	1
4.9 Precautions of building constructions in seismic areas 4.10 Classification of landslides, (Des: Landslides reasons, few preventation measures) 4.11 Causes and effects of landslides 4.12 Measures to be taken prevent their occurrence at Landslides 4.12 Measures to be taken prevent their occurrence at Landslides T1,R1 1 CO5: Investigate the project site for site for gengineering engineering projects and site selection for mega engineering engineering engineering projects like Dams, Dams, Dams, Dams, Reservoirs Precautions of building T1,R1 1 Classification of landslides, (Des: Landslides T1,R1 1 T1,R2 1 Total Types of Dams T1,R2 1 Types of Dams T1,R2 1 Types of Dams ite selection of a Dam site (Des: Dam site selection based on geological structure) T1,R2 1 T1,R1 1 T1,			4.8	Richter seels in Seismic bells	T1,R1	1
CO5: Investigate the project site for mega/mini civil engineering projects and projects and projects and for mega engineering projects like Dams, Reservoirs Cost		3885	4.9	Precautions of the	T1, R1	
CO5: Investigate the project site for engineering projects and projects and for mega engineering projects like pro			4.10	Constructions in seigni-	T1,R1	
4.12 Measures to be taken prevent their occurrence at Landslides CO5: Investigate Investigate the project site for mega/mini civil engineering projects and site selection for mega engineering projects like Dams, Reservoirs A.12 Measures to be taken prevent their occurrence at Landslides Total Total AND TUNNELS 5.1 Types of Dams 5.2 Purpose of Dams Geological considerations in the selection of a Dam site (Des: Dam site selection based on geological structure) 5.4 Geological considerations in the selection of a Dam site (Des: Dam site selection based on geological structure) 5.5 Life of Reservoirs T1, R2 1			4.11	preventation measures)	T1,R1	1
CO5: Investigate the project site for mega/mini civil projects and site selection for mega engineering projects like projects like Dams, Reservoirs CO5: UNIT-V : GEOLOGY OF DAMS, RESERVOIRS AND TUNNELS 5.1 Types of Dams T1, R2 1 Geological considerations in the selection of a Dam site (Des: Dam site selection based on geological structure) 5.4 Geological considerations in the selection of a Dam site T1, R2 1 Geological considerations in the selection of a Dam site T1, R2 1			4.12	landslides		1
site for site for mega/mini civil site selection for mega engineering projects and site selection for mega engineering projects like Dams, Reservoirs 5.1 Types of Dams 5.2 Purpose of Dams T1, R2 1 Geological considerations in the selection of a Dam site selection based on geological structure) 5.3 Geological considerations in the selection of a Dam site T1, R2 1				decentrence at Landslides		
site for site for mega/mini civil site selection for mega engineering projects and site selection for mega engineering projects like Dams, Reservoirs 5.1 Types of Dams 5.2 Purpose of Dams T1, R2 1 Geological considerations in the selection of a Dam site selection based on geological structure) 5.3 Geological considerations in the selection of a Dam site T1, R2 1			UNIT.	V : GEOLOGY OF PARTY	Total	
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mega/mini civil engineering projects and site selection for mega engineering projects like Dams, Reservoirs 5.2 Purpose of Dams Geological considerations in the selection of a Dam site (Des: Dam site selection based on geological structure) 5.4 Geological considerations in the selection of a Dam site 5.5 Life of Reservoirs 5.6 Purpose of Tunneling T1, R2 1		the project	5.1	Types of Dams		
Geological considerations in the selection of a Dam site (Des: Dam site selection based on geological structure) 5.4 Geological considerations in the selection of a Dam site selection for mega engineering projects like Dams, Reservoirs 5.5 Life of Reservoirs 5.6 Purpose of Tunneling 5.7 Tunneling effects 5.8 Lining of Tunnels			3.2	Purpose of Dams		1
engineering projects and site selection for mega engineering projects like Dams, Reservoirs 5.3 Comparison of a Dam site selection based on geological structure) T1, R2 1				Geological consideration	11, R2	1
for mega engineering projects like Dams, Reservoirs S.4 Sconogical considerations in the selection of a Dam site 5.5 Life of Reservoirs T1, R2 1		engineering projects and		(Des: Dam site selection based on geological street	T1, R2	1
Dams, S.6 Purpose of Tunneling T1, R2 1		for mega engineering		the selection of a Dam site		1
Reservoirs 5.7 Tunneling effects T1, R2 1 5.8 Lining of Tunnels		projects like	5.6	Purpose of Tunneling	T1, R2	1
5.8 Lining of Tunnels		Dams, Reservoire				1
		- TOOL VOILS	5.8	Lining of Tunnels	T1, R2 T1, R2	1

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,	v and Tunnels. (K3)		(Des: Tunnels and their formation and purpose of tunnels)			Chalk & talk, PPT,	
		5.9	Lining of Tunnels	T1, R2	1	Active	
		5.10	Influence of Geology for successful Tunneling	T1, R2	1	Learning	
				Total		10	
			CUMULATIVE PROPOSED	PERIODS		60	
Text B	Books:						
S.No.	AUTHORS, BOOK		EDITION, PUBLISHER, YEAR O				
1	N. Chennakesavulu / "Text book of Engineering Geology"/ Laxmi Publications Pvt Ltd. / 2018						
2	Parbin Singh/ Engineering Geology and general geology/8thEdition/ Katson educational series 2023						
Refere	nce Books:						
S. No.	AUTHORS, BOOK	TITLE, I	EDITION, PUBLISHER, YEAR O	F PUBLICAT	ION		
1	D. Venkata Reddy / 'E	ngineeri	ng Geology'/ Vikas Publishing House	Pvt. Ltd/ 201	3	10010	
2	Alan E Kehew / 'Geole	ogy for E	Engineers and Environmental Society	/ Pearson pu	blicat	ions./ 2013	
-	Subinoy Gangopadhay / Engineering Geology'/ Oxford University press / 2014						
3	Subinoy Gangopadhay	/ Engine	ering Geology'/ Oxford University p	ress / 2014		-	
3	Subinoy Gangopadhay etails						
3	Subinoy Gangopadhay ctails https://www.youtube.co	om/wate	h?v=aTVDiRtRook&list=PLDF5162				
	Subinoy Gangopadhay etails https://www.youtube.cc https://nptel.ac.in/cours	om/wate	h?v=aTVDiRtRook&list=PLDF5162 05106/3	B475DD915F			
3 Web De	Subinoy Gangopadhay etails https://www.youtube.cc https://nptel.ac.in/cours	om/watc ses/10510 om/watcl	h?v=aTVDiRtRook&list=PLDF5162 05106/3 h?v=sTYao4RZck&list=PLDF5162B	B475DD915F		=4	

		Name	Signature with Date
i.	Faculty	Dr M.S.V.K.V. Prasad	200 Total
ii.	Course Coordinator	Dr M.S.V.K.V. Prasad	90000
	Module Coordinator	Dr M.S.V.K.V. Prasad	me
	Programme Coordinator	Prof. G.V.L.N. Murthy	lue

Principal

Faculty Member

with Date :