



Yashoda Shikshan Prasarak Mandal's
YASHODA TECHNICAL CAMPUS, SATARA
An Autonomous Institute
FACULTY OF ENGINEERING
Department of Civil Engineering

Teaching Learning and Assessment Plan

Subject: Introduction to Engineering Geology (25AF1191MD306)

Name of Faculty: Mrs. V. P. Pawar

Semester: III

Class: SY [Civil]

Academic Year: 2026-27

Planned Duration: 24-08-2026 to 21-11-2026

Course outcome: After completing the course students will able to

- | | |
|----------------|---|
| MD306_1 | Analyze geomorphological processes and landforms relevant to civil engineering. |
| MD306_2 | Identify the mineralogical and petrological features suitable for types of foundations. |
| MD306_3 | Interpret structural features and groundwater characteristics to assess their significance in civil engineering project |
| MD306_4 | Apply geological and geophysical investigation methods, core logging, and rock property evaluation in site investigations. |
| MD306_5 | Analyze the influence of geological conditions on dams, tunnels, bridges and recommend suitable remedial measures. |

Text/Reference Books:

- A. Singh Prabin, 2009, "Engineering and General Geology", S. K. Katariya and sons, Delhi
- B. Gupta R. B., "A Text Book of Engineering Geology", Pune Vidyarthi Griha Prakashan, Pune
- C. Reddy Dr. D. V., 2017, "Engineering Geology for Civil Engineering", Oxford & IBH Publishing Co. Pvt. Ltd.

Module	Lecture No.	Lesson Plan	Duration	Planned Date	Conduction Date	TM	TA	AT	Reference Book	Mapping with Outcomes	
		Content Delivery								CO	PO
I	1	Module 1- Introduction and history of Engineering Geology and related branches	1 Hour	27/08/2026		LT	CB, PPT	CA MSE	A, B	MD306_1	1,2,6,11 PSO1,2,3

Vision of the Department

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

Mission of the Department

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		Content Delivery								CO	PO
	2	applications in Civil engineering. Interior of Earth	1 Hour	28/08/2026				ESE	A, B		
	3	Plate tectonics	1 Hour	2/09/2026					A, B		
	4	Earthquakes, seismic zones in India.	1 Hour	3/09/2026					A, B		
	5	Geomorphology: - basic principles and processes like denudation and types of weathering.	1 Hour	4/09/2026							
	6	Geological work of River: Processes and features of erosion, deposition and transportation, Civil Engineering Significance	1 Hour	9/98/2026							
	7	Geological work of wind: Processes and features of erosion, deposition and transportation, Civil Engineering Significance	1 Hour	10/09/2026					A, B		
	8	Geological work of Sea: Processes and features of erosion, deposition and transportation, Civil Engineering Significance	1 Hour	11/09/2026					A, B		

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		Content Delivery								CO	PO
II	9	Module 2 Mineralogy: - Study of physical properties of minerals and study of common rock-forming minerals	1 Hour	16/09/2026		LT	CB, PPT	CA MSE ESE	A, B	MD306 _2	1,2,3,4,6,8,9,1 1 PSO1,2,3
	10	Study of physical properties of minerals and study of common clay minerals	1 Hour	17/09/2026							
	11	Petrology: Definition, rock cycle, Igneous rocks: origin, textures	1 Hour	18/09/2026					A, B		
	12	structures, classification, concordant and dis-concordant intrusions, civil engineering significance	1 Hour	23/09/2026					A, B		
	13	Secondary rocks: formation, classification, residual deposits: soil, laterite and bauxite and their importance	1 Hour	24/09/2026					A, B		
	14	Sedimentary deposits: formation, textures, classification and structures, civil engineering significance.	1 Hour	25/09/2026					A, B		

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Module	Lecture No.	Lesson Plan	Duration	Planned Date	Conduction Date	TM	TA	AT	Reference Book	Mapping with Outcomes	
		Content Delivery								CO	PO
	15	Metamorphic rocks: Agents and types of metamorphism,	1 Hour	30/09/2026							
	16	textures, and structures and their importance.	1 Hour	01/09/2026					A, B		
III	17	Module 3- Geological maps: - Geologic cross-section, Attitude of beds like outcrops, Unconformity-Types	1 Hour	26/09/2026		LT	CB, PPT	CA MSE ESE	A, B	MD306_3	1,2,3,4,6,8,9,1 1 PSO1,2,3
	18	Fold, origin, classification, diverse effects, and case studies.	1 Hour	14/10/2026					A, B		
	19	Fault:, origin, classification, diverse effects, and case studies.	1 Hour	15/10/2026					A, B		
	20	Joint: origin, classification, diverse effects, and case studies Unconformity-Types	1 Hour	16/10/2026					A, B		
	21	Groundwater: Sources of groundwater, water table	1 Hour	21/10/2026					A		
	22	zones of groundwater, porosity and permeability	1 Hour	22/10/2026					A		

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		Content Delivery								CO	PO
IV	23	Module 4- Preliminary geological survey, steps in geological investigations	1 Hour	23/10/2026		LT	CB	CA ESE	A	MD306 _4	1,2,3,4,6,7,10, 11 PSO1,2,3
	24	Exploratory drilling types and limitations	1 Hour	28/10/2026					A		
	25	Preservation of cores	1 Hour	29/10/2026					A, B		
	26	core logging, core recovery, Rock Quality Designation (RQD)	1 Hour	30/10/2026					A, B		
	27	Engineering properties of rocks like density, unit weight, porosity, strength, and index properties.	1 Hour	4/11/2026					A, B		
	28	Geophysical investigation applications in Civil engineering methods like electrical resistivity method, gravity method.	1 Hour	5/11/2026					A, B		
V	29	Module 5- Dams: - Influence of geological conditions on location, alignment, design, and type of a dam,	1 Hour	6/11/2026		LT	CB, PPT	CA ESE	A, B	MD306 _5	1,2,3,6,8,9,10, 11 PSO1,2,3

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		Content Delivery								CO	PO
	30	geological considerations in site selection for dams	1 Hour	11/11/2026					A, B		
	31	site improvement techniques e.g. grouting. .	1 Hour	12/11/2026					A, B		
	32	Tunnelling: - Types of tunnels, tunnelling in various conditions e.g. folded	1 Hour	13/11/2026					A, B		
	33	tunnelling in various conditions e.g. faulted region	1 Hour	18/11/2026					A, B		
	34	tunnelling in various conditions deccan trap or any other kind of rocks	1 Hour	19/11/2026					A, B		
	35	Bridges: - Types of bridges	1 Hour	20/11/2026					A, B		
	36	bridges on geological conditions	1 Hour	18/11/2026					A, B		

Note: TM-Teaching Method- Lecture (LT), Laboratory Visit (LV) TA-Teaching Aids Chalk Board (CB, PPT), Power Point Presentation (PPT), Models (MD) AT- Assessment Tool-Assignments (AS), Examinations (CA, MSE, ESE), Rubrics (RB)

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Mode of Assessment

Mode	Assessment Tool	Syllabus	CO Mapped	Marks Weightage	Remark
CA	Case study	Module 2,3	CO2, CO3	25 M	The maximum weightage shall be of 20 Marks as per University Structure
	Presentation	Module 5	CO5	25 M	
	Assignments	Module 1-5	CO1, CO2, CO3, CO4, CO5	25 M	
MSE	Written Exam	50% of Syllabus	CO1, CO2, CO3	20M	The maximum weightage shall be of 20 Marks as per University Structure
ESE	Written Exam	On entire syllabus of Engineering Geology (MD306)	CO1, CO2, CO3, CO4, CO5	60 M	The maximum weightage shall be of 60 Marks as per University Structure

Course Coordinator

Academic Coordinator

HOD- Civil

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