

Department of Geology
Value Added Course 2021-22

Report

Department of Geology conducted value-added “Certificate course on groundwater exploration” (Hydrogeology) in session 2021-22 dated 1st April 2022 to 30th April 2022 for duration of One Month and total of 20 students participated in this course and 15 completed successfully. In course was in towards making students aware about introductory requirement to understand ground water exploration and its related problems. This course covered building-block contains to understand groundwater and its integral relationship with geology. After completion of course students are able to understand groundwater conditions in various lithological units and expected behaviour groundwater in varied litho-stratigraphic unit in relation to various geological structure. Students learned about importance of groundwater in changing societies and why sustainable use of groundwater is necessary. Course also enriched students on groundwater conditions in various parts of Maharashtra and surrounding area.

Course Out-Come: -

- 1) Students were able to understand and analyze various components and interrelationship of hydrological cycle.
- 2) Understanding of Occurrences and distribution of groundwater and better Understand about interrelationship between groundwater and surface water.
- 3) Learning, understanding of theories governing groundwater and its application in understanding flow of water beneath Earth surface and gained applicable knowledge of different rock types to understand their water holding capacities.
- 4) Broad Understanding of groundwater provinces of India and better understand of groundwater conditions in various parts of Maharashtra.

Course schedule, Course contents & teaching plan: -

Detailed time-wise course session plan:

Week	Day	Syllabus	Hours	Credits
Week 1	1	Unit 1 Groundwater hydrology , Groundwater hydrology relation to other sciences	Theory 40 min + Summary 10 min	1 credits
	2	Hydrological cycle	Theory 40 min + Summary 10 min	
	3	Occurrences of groundwater	Theory 40 min + Summary 10 min	

	4	Distribution of groundwater	Theory 40 min + Summary 10 min	
	5	Practical	Practical 40 min + Summary 10 min	
	6	Practical & Discussion	Practical 40 min + Summary 10 min+ Discussion 2hr	
	7	Test & Assignment	Test 1 hr + Assignment 1.30 min	
Week 2	8	Water table and water table maps, Piezometric surface	Theory 40 min + Summary 10 min	1 credits
	9	Influent and effluent seepage	Theory 40 min + Summary 10 min	
	10	Theory of groundwater flow, Darcy's law and its limitation for groundwater flow	Theory 40 min + Summary 10 min	
	11	Aquifer and their types	Theory 40 min + Summary 10 min	
	12	Practical	Practical 40 min + Summary 10 min	
	13	Practical & Discussion	Practical 40 min + Summary 10 min+ Discussion 2hr	
	14	Test, Assignment	Test 1 hr + Assignment 1.30 min	
Week 3	15	Hydrological properties of rock and their definition	Theory 40 min + Summary 10 min	1 credits
	16	Porosity and permeability	Theory 40 min + Summary 10 min	
	17	Specific yield and specific retention	Theory 40 min + Summary 10 min	
	18	Methods of determination	Theory 40 min + Summary 10 min	
	19	Practical	Practical 40 min + Summary 10 min	
	20	Practical & Discussion	Practical 40 min + Summary 10 min+ Discussion 2hr	

	21	Test, Assignment	Test 1 hr + Assignment 1.30 min	
Week 4	22	Occurrences of groundwater in different rock – Igneous rock	Theory 40 min + Summary 10 min	1 credits
	23	Sedimentary rock & Metamorphic rock	Theory 40 min + Summary 10 min	
	24	Lithological, structural and stratigraphic control of groundwater occurrences	Theory 40 min + Summary 10 min	
	25	Groundwater provinces of India	Theory 40 min + Summary 10 min	
	26	Groundwater conditions in different parts of Maharashtra	Practical 40 min + Summary 10 min	
	27	Practical & Discussion	Practical 40 min + Summary 10 min+ Discussion 2hr	
		Final Test	2 hr	
		Total	40 hr	