

**School of Planning and Architecture: Vijayawada**

(An institution of National Importance under the Ministry of Human Resource Development, Govt. of India)
Survey No.4/4, ITI Road, Vijayawada-520008, Andhra Pradesh, India

Department of Architecture - Landscape Architecture

Course: Geology, Hydrology and Geomorphology (MLAR114)

Instructors: Kapil Natawadkar

Contact Periods/ week: 03 periods.(50 min each)

Time Table: Thursday

Attendance: Min 75% **Min. Passing Marks:** 50% each in Internal & External Assessment, 50% in Aggregate

Class:

I st Yr M. Arch(LA) I Sem A.Y.

Internal Assessment: 50

External Theory Exam: 50

Total Marks: 100

Credits: 2

Objective: ● To develop an understanding of the geological pattern of the region and devise an approach to use the parameters in landscape design.

● To develop an understanding of the drainage pattern, watershed and usefulness of the hydrological principles in evolving a landscape design

Out Line of the Course:

Understand the basics of various geological factors used for reding the landscapes.

Appraise the connection between factors as geology, vegetation etc for impending landscape design pertaining to environmental problems.

Analyzing various patterns of surface and subsurface groundwater movement.

Understand the various processes of landform formation, causes and effects.

LECTURE PLAN

WEEK	DATE	TOPIC OF CLASS LECTURE & DISCUSSION	ASSIGNMENTS / REMARKS
Week-1	25-Jul-25	Overall introduction to subject and its relevance to course and curriculum. Earth in space, Early history of Earth, Life through the geologic ages, Natural hazards, seismic zones of India.	Presentation
Week-2	01-Aug-24	Types of rocks, Structural Geology, Stratigraphy, Glaciers of India, geothermal fields of India.	Presentation
Week-3	08-Aug-24	Application of geological information & Application of geologic principles to environmental problems	Assignment -1
Week-4	15-Aug-24	Holiday- Independence Day	Presentation
Week-5	22-Aug-24	Introduction to hydrology, water cycle and its component, movement of groundwater and surface water. Characteristics and management of drainage basins / watershed.	Presentation
Week-6	29-Aug-24	runoff characteristics, hydrograph, saltwater intrusions	Presentation
Week-7	05-Sep-24	Characteristics of Precipitation in India, natural drainage patterns,	Presentation
Week-8	12-Sep-24	Water efficient landscape designs, rainwater harvesting, artificial recharge and water pollution.	Presentation
Week-9	19-Sep-24	Mid- Sem	Mid Semester
Week-10	26-Sep-24	Introduction to geomorphology and morphogenic regions	Assignment -2
Week-11	03-Oct-24	Fluvial, Aeolian, Coastal, Karst, Glacial landforms	Presentation and Assignment -2 review
Week-12	10-10-2024	Major processes and associated landforms.	Presentation and Assignment -2 review

Week-13	17-Oct-24	Structural geomorphology, landforms developed on sedimentary sequences, volcanoes and volcanic landforms, pseudo structural landforms.	Presentation and Assignment -2 review
Week-14	24-Oct-24	landforms developed on sedimentary sequences, volcanoes and volcanic landforms, pseudo structural landforms	Presentation and Assignment -2 review
Week-15	31-Oct-24	Holiday- Diwali	Presentation and Assignment -2 review
Week-16	07-Oct-24	Geomorphological features of the Indian subcontinent	Presentation and Assignment -2 review

S. No.	Stages of Evaluation	Weightage
1	First stage: Assessment –1	15
2	Second stage: Mid-semester Examination	20
3	Third stage: Assessment –3	15

Reference Books:

1. Akhauri, S. (2015) Fundamentals of Hydrogeology, Zorba Books.
2. Babar, M.D. (2005) Hydro geomorphology: Fundamentals, Applications and Techniques, New India Publishing Agency.
3. Davie, T. (2017) Fundamentals of Hydrology, T&F/Routledge.
4. Dullo, W.-C. (2018) 'Environmental Geology', International journal of earth science, no. 531.
5. etal., J.A.Z. (2016) Geopedology: An Integration of Geomorphology and Pedology for Soil and Landscape Studies, Springer.
6. Gohau, G. (1990) A History of Geology, revised edition, Rutgers University Press.
7. Huggett, R.J. (2016) Fundamentals of Geomorphology, Taylor and Francis.
8. ISSS (2015) Soil Science: An Introduction, Indian Society of Soil Science (ISSS).
9. Robinson, H. (1969) Morphology and Landscape , 1st edition, University Tutorial Press.
10. Tilley, C. (2010) Interpreting Landscapes: Geologies, Topographics, Identities, 1st edition, Routledge.
14. Robinson, H. (1969) Morphology and Landscape , 1st edition, University Tutorial Press.
15. Tilley, C. (2010) Interpreting Landscapes: Geologies, Topographics, Identities, 1st edition, Routledge.
16. Walker, J.D. (2009) The Geoscience Handbook , Fourth Edition edition, AGI Data Sheets
17. Viessman ,Warren(1985), Water Management-Technology and Institutions, Harper & Row,
18. Bansil, P.C,(2004), Water Management in India, Concept Publishing

Course Instructors:

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Head of Department (I/C):