

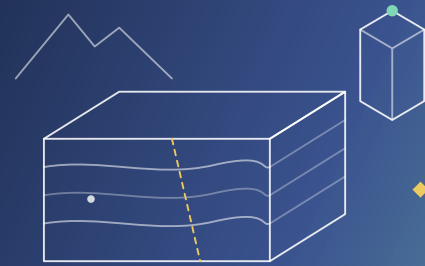
Module code

SPG-3409

Type of module

Undergraduate: Geosciences – Elective

Marine and Coastal Hydrogeology



Modular credits

4

Total student
engagement

56 hours

Prerequisite

SPG-1203 Introduction
to Geology

Anti-requisite

None

Aims

To provide an understanding of groundwater processes in coastal and marine environments, including seawater intrusion, submarine groundwater discharge, aquifer–seawater interactions, and impacts of climate and human activities. It emphasizes monitoring, modelling, and sustainable coastal groundwater management.

Module learning outcomes (MLO)

On successful completion of this module, a student will be expected to be able to:

MLO 1

Analyse the basic principles of marine and coastal hydrogeology and influencing factors.

MLO 2

Analyse the principles of sea level rise.

MLO 3

Apply and able to analyse data for Seawater Intrusion.

MLO 4

Analyse and understand Submarine Groundwater Discharge.

Module contents

Introduction to Marine and Coastal Hydrogeology

Tidal Effects

Submarine Groundwater Discharge

Hydrothermal Activities

Hydrochemistry

Principles of Variable Density Flow

Investigative Methods for Marine and Coastal Hydrogeology

Assessment

60% **40%**

Examination

Coursework

Examination
60%

20%

20%

■ Examination — 60%

■ Weekly practicals — 20%

■ Class tests — 20%

Formative assessment

Weekly practicals,
discussion and
feedback

Summative assessment

COMPONENT	WEIGHTING
Examination	60%
Coursework	40%
Individual	40%
Weekly practicals	20%
Class tests	20%

Graduate attributes and skills

Programme learning objectives (PLO) addressed

1

PLO 1 (Fundamental Theoretical Knowledge in Geosciences)

2

PLO 2 (Application of Scientific Methods and Data Analysis)

3

PLO 3 (Integrated Laboratory, Field, and Technical Skills)

4

PLO 4 (Critical Thinking and Problem-Solving Skills)

7

PLO 7 (Independent Learning and Professional Development)

Sustainability concept addressed

9

SDG 9 Industry, Innovation, and Infrastructure

11

SDG 11 Sustainable Cities and Communities

13

SDG 13 Climate Action

Digital skills/software used (not limited to)

■ Word processing software (e.g. Microsoft Word)

■ Data processing and spreadsheet software (e.g. Microsoft Excel)

■ Hydrogeological graphing software

Micro-credentialling option

No

Stackable towards GenBESTARI Undergraduate Degree Programme or other relevant Lifelong Learning Programmes

No

Document details

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