

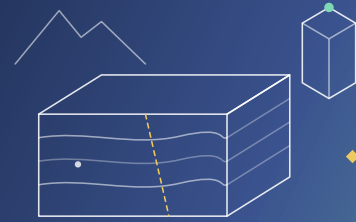
Module code

SPG-3302

Type of module

Undergraduate: Geosciences – Major Option

Petroleum Geology



Modular credits

4

Total student
engagement

56 hours

Prerequisite

SPG-1203 Introduction
to Geology

Anti-requisite

None

Aims

To provide an understanding of hydrocarbon origin, migration, and accumulation in sedimentary basins. It covers petroleum system elements—source, reservoir, seal, and trap—and applies geological and geophysical data for exploration and evaluation, emphasizing practical skills in basin and reservoir analysis.

Module learning outcomes (MLO):

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

MLO 1

Analyse the fundamental processes of hydrocarbon generation, migration, and accumulation.

MLO 2

Characterise source, reservoir, seal, and trap elements of petroleum systems.

MLO 3

Evaluate reservoir properties and construct petroleum system models.

MLO 4

Integrate geological, geochemical, and geophysical data for exploration.

MLO 5

Assess exploration risk and apply petroleum geology to real-world case studies.

Module contents

Fundamentals of petroleum
geology and system elements

Source rocks and hydrocarbon
generation

Migration and accumulation
processes

Reservoir properties and quality
controls

Seals, traps, and entrapment
mechanisms

Drilling, mud, core basic well
logging

Assessment

60%

Examination

40%

Coursework

Examination
60%

Class tests
30%

10%

■ Examination — 60% ■ Class tests — 30% ■ Assignment — 10%

Formative assessment

Weekly discussion
and feedback

Summative assessment

COMPONENT	WEIGHTING
Examination	60%
Coursework	40%
Individual	40%
Class tests	30%
Assignment	10%

Graduate attributes and skills

Programme learning objectives (PLO) addressed

1

PLO 1 (Fundamental Theoretical Knowledge in Geosciences)

3

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

7

PLO 7 (Independent Learning and Professional Development)

2

PLO 2 (Application of Scientific Methods and Data Analysis)

4

PLO 4 (Critical Thinking and Problem-Solving Skills)

Sustainability concept addressed

4

SDG 4 Quality Education

7

SDG 7 Affordable and Clean Energy

9

SDG 9 Industry, Innovation, and Infrastructure

Digital skills/software used (not limited to)

- Word processing software (e.g. Microsoft Word)
- Data processing and spreadsheet software (e.g. Microsoft Excel)
- Modelling Software (Petromod)
- Learning management system (Canvas)

Micro-credentialling option

No

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

No

Document details

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