

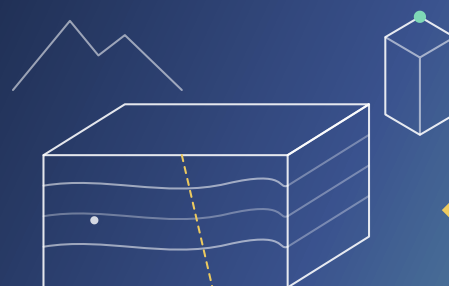
Module code

SPG-3202

Type of module

Undergraduate: Geosciences – Major Core

Field and Laboratory Skills in Geosciences



Modular credits

4

Total student
engagement

56 hours

Prerequisite

None

Anti-requisite

None

Aims

To equip students with essential field and laboratory skills for geoscientific investigation, covering geological mapping, stratigraphic logging, sedimentology, palaeontology, structural measurements, rock and mineral identification, sample preparation, microscopy, and hydrogeological and geochemical analysis for reporting.

Module learning outcomes (MLO)

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

MLO 1

Apply practical skills in field mapping, stratigraphic logging, and structural data collection.

MLO 2

Prepare, describe, and interpret hand specimens and thin sections using petrological and geochemical techniques.

MLO 3

Integrate and analyse field and laboratory data to reconstruct geological history.

MLO 4

Produce professional-quality field notebooks, maps, and laboratory reports.

MLO 5

Evaluate and manage uncertainty in data while working independently and collaboratively on geoscientific projects.

Module contents

Geological field methods: mapping, notebook preparation, stratigraphic logs

Structural measurements: strike, dip, stereonet plotting

Petrography: thin-section preparation, optical mineralogy, rock textures

Geochemistry: XRF, ICP-MS, stable isotopes (introductory)

Sedimentology: grain-size analysis, palaeocurrent analysis

Paleontology: fossil sampling, paleoenvironmental reconstruction

Hydrogeological mapping skills

Data integration: cross-sections, stratigraphic correlations

Scientific writing: field reports, lab reports, data presentation

Assessment

50%

Examination

50%

Coursework

Examination
50%

20%

Fieldwork report
30%

■ Examination — 50%

■ Field assignment — 20%

■ Fieldwork report — 30%

Formative assessment

Weekly discussion and feedback

Summative assessment

COMPONENT

WEIGHTING

Examination

50%

Coursework

50%

Individual

20%

Field assignment

20%

Group

30%

Fieldwork report

30%

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)	7	PLO 7 (Independent Learning and Professional Development)

Sustainability concept addressed

4	SDG 4 Quality Education
11	SDG 11 Sustainable Cities and Communities
13	SDG 13 Climate Action

Digital skills/software used (not limited to)

- Field data acquisition apps (e.g. Collector for ArcGIS, FieldMove Clino)
- GIS software (ArcGIS, QGIS)
- Statistical software (R, SPSS)
- Microsoft Office, Google Docs, Sheets

Micro-credentialling option

No

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

No

Document details

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