



## UNSW Course Outline

# GEOS3141 Mineral and Energy Resources - 2024

Published on the 03 Sep 2024

## General Course Information

**Course Code :** GEOS3141

**Year :** 2024

**Term :** Term 3

**Teaching Period :** T3

**Is a multi-term course? :** No

**Faculty :** Faculty of Science

**Academic Unit :** School of Biological, Earth and Environmental Sciences

**Delivery Mode :** In Person

**Delivery Format :** Standard

**Delivery Location :** Kensington

**Campus :** Sydney

**Study Level :** Undergraduate

**Units of Credit :** 6

### Useful Links

[Handbook Class Timetable](#)

## Course Details & Outcomes

### Course Description

The course provides an introduction to the nature and formation of mineral resources. It is designed for those students wishing to work in the future as professional geologists, resource engineers and in other fields of geoscience. It covers: the geological setting, characteristics and

genesis of major categories of metallic resources, including critical element mineralization and deposit types. Laboratory study of hand specimens and polished sections is the main focus of the laboratory component. Exploration and development methods are described within the lectures.

## Course Aims

The course provides students an introduction to the fundamental concepts and processes relating to the genesis, geological characteristics and exploration for some archetypical ore deposits. Laboratory work will provide practical skills in identifying the key features of samples from some important ore deposits and to place these samples within the geological framework of the genesis of those deposits. The course also emphasises the development of report writing skills and group work

## Relationship to Other Courses

This course follows on from earlier geology-focussed Earth Science courses within the School of BEES, including GEOS2181 'Earth Materials' and GEOS1111 'Fundamentals of Geology'.

# Course Learning Outcomes

Course Learning Outcomes
CLO1 : Explain the fundamentals of ore-forming processes for a range of different ore deposit types.
CLO2 : Assess and identify the textural relationships between ore minerals, alteration assemblages and host rock lithologies in relation to ore-forming processes.
CLO3 : Apply basic skills in mathematics and computer processing to interpret current and future trends in global commodity prices.
CLO4 : Communicate geological knowledge on a chosen ore deposit to a broad audience through an audio visual presentation.

Course Learning Outcomes	Assessment Item
CLO1 : Explain the fundamentals of ore-forming processes for a range of different ore deposit types.	<ul style="list-style-type: none"><li>• Seminar</li><li>• Ore Suites</li><li>• Lab test</li></ul>
CLO2 : Assess and identify the textural relationships between ore minerals, alteration assemblages and host rock lithologies in relation to ore-forming processes.	<ul style="list-style-type: none"><li>• Ore Suites</li><li>• Lab test</li></ul>
CLO3 : Apply basic skills in mathematics and computer processing to interpret current and future trends in global commodity prices.	<ul style="list-style-type: none"><li>• Mineral Economics Exercise</li></ul>
CLO4 : Communicate geological knowledge on a chosen ore deposit to a broad audience through an audio visual presentation.	<ul style="list-style-type: none"><li>• Seminar</li></ul>

## Learning and Teaching Technologies

Moodle - Learning Management System

# Assessments

## Assessment Structure

Assessment Item	Weight	Relevant Dates
Seminar Assessment Format: Individual Short Extension: Yes (7 days)	15%	Start Date: 11/11/2024 12:00 PM
Ore Suites Assessment Format: Individual Short Extension: Yes (7 days)	50%	Start Date: 20/09/2024 05:00 PM Due Date: 08/11/2024 05:00 PM
Mineral Economics Exercise Assessment Format: Individual Short Extension: Yes (7 days)	10%	Start Date: 25/09/2024 11:00 AM Due Date: 11/10/2024 05:00 PM
Lab test Assessment Format: Individual	25%	Start Date: Not Applicable Due Date: Not Applicable

## Assessment Details

### Seminar

#### Assessment Overview

You will deliver a 12 minute powerpoint presentation on the key geological aspects of a chosen ore deposit based on a range of scientific articles on the deposit that you have researched. A large list of deposits will be given in week 2 for you to choose your deposit from and the seminars will be held during week 10. Feedback will be provided to individual students based on request.

#### Course Learning Outcomes

- CLO1 : Explain the fundamentals of ore-forming processes for a range of different ore deposit types.
- CLO4 : Communicate geological knowledge on a chosen ore deposit to a broad audience through an audio visual presentation.

#### Assignment submission Turnitin type

This is not a Turnitin assignment

#### Generative AI Permission Level

### No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

## Ore Suites

### Assessment Overview

You will be required to analyse and describe a wide range of ore suite specimens from a range of different ore deposit types and relate these to ore deposit architecture and formation processes. For this, you will be required to submit 10 ore suite sheets and these will all require a critical review of the literature on each deposit. This is the main assessment task for this course and will run from week 1 to week 8. You will be expected to submit your final 10 ore suite summaries at the end of week 9. You will be given the chance to submit the first draft of your first ore summary sheet at the end of week 2. Feedback will be given on your draft, though it will not be assessed. Feedback on your final submission will be provided on an individual basis after during the exam period upon request.

### Course Learning Outcomes

- CLO1 : Explain the fundamentals of ore-forming processes for a range of different ore deposit types.
- CLO2 : Assess and identify the textural relationships between ore minerals, alteration assemblages and host rock lithologies in relation to ore-forming processes.

### Assignment submission Turnitin type

This is not a Turnitin assignment

### Generative AI Permission Level

#### No Assistance

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## Mineral Economics Exercise

### Assessment Overview

You will be expected to use your basic knowledge of mathematics and Excel to analyse commodity trends and calculate mine profitability. This will be based on a compulsory tutorial held during a lab class during which you will be given the assignment and taken through what is required of the task. You will have 2 weeks after the lecture on Mineral Economics to complete

this assignment and submit it online. Feedback will be provided 2 weeks after submission online.

### **Course Learning Outcomes**

- CLO3 : Apply basic skills in mathematics and computer processing to interpret current and future trends in global commodity prices.

### **Generative AI Permission Level**

#### **No Assistance**

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### **Lab test**

#### **Assessment Overview**

You will be expected to correctly identify and name 1) economic and related minerals in hand-specimen; and 2) ore minerals under the reflected light microscope. You will also be expected to examine and interpret ore samples from a wide range of deposit types in terms of their mineralogy, structure, conditions of formation and type of deposit from where they came. This is based on all the laboratory classes and will be held during the lab class at the end of week 9 . Feedback will be provided on an individual basis immediately after the lab test. The marked sheets will be returned in the week following the lab skills test.

#### **Course Learning Outcomes**

- CLO1 : Explain the fundamentals of ore-forming processes for a range of different ore deposit types.
- CLO2 : Assess and identify the textural relationships between ore minerals, alteration assemblages and host rock lithologies in relation to ore-forming processes.

### **Assignment submission Turnitin type**

This is not a Turnitin assignment

### **Generative AI Permission Level**

#### **No Assistance**

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# General Assessment Information

## Grading Basis

Standard

## Requirements to pass course

Overall mark greater than 50%.

# Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 9 September - 15 September	Blended	
Week 2 : 16 September - 22 September	Blended	
Week 3 : 23 September - 29 September	Blended	
Week 4 : 30 September - 6 October	Blended	
Week 5 : 7 October - 13 October	Blended	
Week 6 : 14 October - 20 October	Other	
Week 7 : 21 October - 27 October	Blended	
Week 8 : 28 October - 3 November	Blended	
Week 9 : 4 November - 10 November	Blended	
Week 10 : 11 November - 17 November	Blended	

## Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

# Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Ian Graham		Building F25, room 131		Contact via email	No	Yes

# Other Useful Information

## Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.

- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the [UNSW Student Code of Conduct Website](#).

## Academic Honesty and Plagiarism

**Referencing** is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

**Academic integrity** is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The [Current Students site](#),
- The [ELISE training site](#), and
- The [Use of AI for assessments](#) site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>

## Submission of Assessment Tasks

### Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and

- no permitted variation.

***Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.***

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

### **Special Consideration**

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: <https://student.unsw.edu.au/special-consideration>

**Important note:** UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

### **Faculty-specific Information**

#### **Additional support for students**

- [The Current Students Gateway](#)
- [Student Support](#)
- [Academic Skills and Support](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [UNSW IT Service Centre](#)
- Science EDI Student [Initiatives](#), [Offerings](#) and [Guidelines](#)