



Course Outline (Higher Education)

School:	School of Engineering, Information Technology and Physical Sciences
Course Title:	ECONOMIC GEOLOGY
Course ID:	SCGEO2105
Credit Points:	15.00
Prerequisite(s):	(SCGEO1102 or SCGEO1103 or SX511 or SX521)
Co-requisite(s):	Nil
Exclusion(s):	(SX627)
ASCED:	010703

Description of the Course :

This course aims to provide students with a solid grounding in the fundamental concepts and skills they will need to put their work in the minerals industry into its geological context. The course describes the formation and occurrence of the major ore deposit styles in both space and time, and gives students the opportunity to improve their rock and mineral identification skills through observing samples from a range of world-class deposits. Students will also work in a multidisciplinary team to examine an important ore deposit.

Grade Scheme: Graded (HD, D, C, etc.)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:

This course aims to provide students with a solid grounding in the fundamental concepts and skills they will need to work effectively in the minerals industry. The course describes the formation and occurrence of the major ore deposit styles in both space and time, and gives students the opportunity to improve their rock and mineral identification skills through observing samples from a range of world-class deposits. At the completion of this course, student will be able to:

Knowledge:

- K1.** Describe common ore deposit models and appreciate their significance in mineral exploration
- K2.** Describe the variety of ore minerals and textures
- K3.** Define the relationship between plate tectonics and the distribution of mineral deposits in space and time
- K4.** Categorise and compare a range of world-class deposits and explain their importance to humans

Skills:

- S1.** Review a mineral deposit and mining operation with integration of financial, mining, metallurgical and geological components
- S2.** Identify and differentiate a range of key minerals and describe associated ore deposit styles
- S3.** Demonstrate research and communication skills

Application of knowledge and skills:

- A1.** Identify and describe mineral and rock samples from a range of ore deposit styles
- A2.** Interpret likely ore deposit styles based on lithological and tectonic relationships
- A3.** Collaborate with others in a multi-disciplinary team and report the findings of an investigation

Course Content:

Topics may include:

- Mineral economics
- Plate tectonics and metallogeny
- Research techniques in economic geology
- Ore deposit types including rock suites, grade characteristics and mining methods
- Exploration practice
- Mining legislation, native title and environmental practice

Values:

- V1.** Comprehend the legal and ethical requirements of the minerals industry
- V2.** Appreciate and explain the role other minerals industry professionals in the minerals industry
- V3.** Explain the role and importance of the JORC code in the Australian minerals industry
- V4.** Recognise and describe the importance of sustainable and environmentally responsible management of earth resources

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the Higher Education Graduate Attributes Policy (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program

progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		Development and acquisition of GAs in the course			
		Learning Outcomes (KSA)	Code A. Direct B. Indirect N/A Not addressed	Assessment task (AT#)	Code A. Certain B. Likely C. Possible N/A Not likely
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K1-K4, S1, S2, A1, A2, V1-V3	A	1,2,3,4,5	A
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	A2, A3	B	4,5	B
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	V1-V4	A	3,4,5	A
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	S1 - S3, A3, V3, V4	A	2,3,4	A
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	S1, A3, V1, V3, V4	A	3,4	A

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1-K4, S2, A1-A2, V1, V2, V4	Students will examine a range of mineral deposits as examples of those studied in class, examine samples from those deposits, and answer questions relating to their formation, geological setting, alteration, and mineralogy	Practical assignment(s)	20-30%
K2, S2, A1-A2,	Students will be tested on their ability to identify rock and mineral samples using traditional methods, based on those samples observed in practicals, and in the mineral test set	Rock and Mineral Test(s)	15%
K1, K4, S1, S3, A3, V2-V4	Students will work in groups to research and report back on a particular commodity of economic value, using a specific nominated deposit as a case study	Team Based Commodity Study	20-30%
A3, V1, V3, V4	Students will role play a controversial proposed development application from a range of stakeholder perspectives to gain an appreciation of the range of perspectives involved	Rights and Responsibilities	5%

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1-K4, S3, A2, V3,V4	Students will be tested on their comprehension of the key concepts explored during the semester	Theory Test(s)	30-40%

Adopted Reference Style:

APA