

# MASTERING ECONOMIC GEOLOGY

## ...AND YOUR FUTURE

Would you like to broaden your knowledge of mineral deposit geology while adding the world's most comprehensive postgraduate mineral exploration and mining geology degree to your CV? If so, then the Master of Economic Geology (MEconGeol) degree at the University of Tasmania could be just what you are looking for.

The MEconGeol is designed for working geoscientists and provides a thorough update on the latest developments in economic geology and mineral exploration, delivered by a team of highly qualified national and international presenters from both industry and academia. Through a series of intensive, two-week short courses, the program emphasises practical content, and includes research opportunities and field excursions to diverse locations – from the arid plateau of the Atacama Desert in Chile, to Amazon rainforest, the snow-capped heights of the Andes and the spectacular modern volcanic landforms of New Zealand.

### ENTRY REQUIREMENTS

A BSc (Hons), or a BSc (majoring in geoscience) with at least two years' industry experience.

Students from non-English speaking countries must meet University of Tasmania requirements for English language proficiency. Further information can be found at: [utas.edu.au/international](http://utas.edu.au/international)

International students who undertake the degree on a part-time basis do not need a Student Visa to enter Australia to attend coursework units.





## ABOUT THE PROGRAM

The coursework based Master of Economic Geology degree at the University of Tasmania (UTAS) forms part of the national Minerals Geoscience Masters (MGM) program. The UTAS program is run by CODES – The Australian Research Council Centre of Excellence in Ore Deposits. Partner institutions in the MGM are UTAS, the University of Western Australia (UWA), and James Cook University (JCU). Curtin University also teach coursework units available to MGM students, however it is not possible to enrol in the MGM through Curtin. In total, 20 coursework units are offered, either annually or biennially, between the four universities.

There are minor differences in the structure and entry requirements of the MGM programs at UTAS, JCU and UWA. CODES requires its students to complete the equivalent of eight coursework units, at least four of which must be at UTAS. Remaining units can be completed at the other partner institutions.

The degree is equivalent to two years' full-time study, but is designed with working geologists in mind – allowing them to pursue their careers while studying. The degree can be completed in as little as 18 months, but most part-time MEconGeol students complete the degree in three to five years.

## FLEXIBLE COMPLETION OPTIONS – IDEAL FOR INDUSTRY PARTICIPANTS

Participating universities offer four to six short courses, either annually (UWA, Curtin) or biennially (UTAS, JCU). There are two options for completing the degree at UTAS:

**Option 1** requires the completion of six coursework units (worth 75% of total credit points) and a research thesis (worth 25%). Four of the units must be completed at CODES, while the remainder may be completed at other participating universities. Duration: 18–24 months full-time; up to 36 months part-time (flexible in recognition of industry participants).

**Option 2** requires the completion of eight units of coursework, at least four of which must be undertaken at CODES. Duration: up to 36 months part-time (flexible in recognition of industry participants).

We realise that as a working geoscientist you are busy, so we endeavour to have all of the assessment tasks completed during the short courses. However, for the two field-based courses, some assessment tasks must be completed in the weeks before or after the short course. Some short courses require a little pre-course reading.

If you want to see what the courses are like before committing to further study, then you can participate as an industry geoscientist. All our courses are open to not-for-degree participants and count as continuing professional development. You can attend the whole short course or just the modules that particularly interest you. If you attend as a not-for-degree participant, but complete all the assessment tasks, we will keep your final results on file and, if you subsequently enrol in the Masters program, we will credit that unit to your degree. It is a way of trying before you buy.



# COURSES OFFERED BY CODES

## ABOUT CODES

Based at the University of Tasmania in Australia, CODES is the Australian Research Council Centre of Excellence in Ore Deposits. Formed in 1989, it has developed a reputation as a world leader in ore deposit research, with a track record for excellence in postgraduate training. It has over 40 research projects spread across six continents, and more than 100 postgraduate students. It has been successfully running its Master of Economic Geology program for over 25 years.

### GEOMETALLURGY

**October 2015 and 2017**

Geometallurgy involves a quantified and comprehensive approach to ore characterisation in terms of critical processing attributes: including blasting, crushing, grinding, liberation, recovery and environmental management. Key outcomes of improved geometallurgical knowledge are improved forecasting, reduced technical risk, enhanced economic optimisation of mineral production, and improved sustainability. The course introduces a range of techniques for 'early-stage' (e.g. exploration, pre-feasibility) collection of geological information that is relevant to mining engineers and metallurgists. The program includes lectures, practical exercises, a field trip to mineral processing plants in western Tasmania and a range of computer-based modelling exercises.

### VOLCANOLOGY AND MINERALISATION IN VOLCANIC TERRAINS

**March 2016 and 2018**

This course provides an introduction to the processes and products of different eruption styles, contrasts in scale and structure of volcanoes, identification of key volcanic facies associations and interpretation of facies variations. Mineralisation and alteration processes related to hydrothermal systems in subaerial and submarine volcanic environments and implications for mineral exploration are included. This course is a field-based unit with trips to the North Island of New Zealand to examine modern volcanic systems, plus a trip to the west coast of Tasmania to examine the well mineralised and altered Cambrian Mt Read Volcanics.

### EXPLORATION IN BROWNFIELD TERRAINS

**June 2016 and 2018**

The compilation and analysis of large data sets typical in areas of significant previous exploration can present a challenge for any geologist. This lab-based unit looks at exploration in data-rich environments in and around mine sites. The course covers GIS applications, and the interpretation of geochemical and geophysical data at various scales. Theory is enhanced by practical exercises involving the integration of multiple data sets from world-class mineralised districts.

### ORE DEPOSIT MODELS AND EXPLORATION STRATEGIES

**October 2016 and 2018**

This short course provides an up-to-date review of key ore deposit types and their characteristics and is presented by a range of Australian and international experts. Each deposit type receives a full day of lectures and practical exercises, addressing their characteristics, location and tectonic setting, genesis and exploration strategies. Deposit types covered include porphyry, epithermal, volcanic-hosted massive sulfide and seafloor hydrothermal, SEDEX Zn-Pb-Ag, sediment-hosted Cu, Fe-oxide Cu-Au, orogenic and Carlin-type Au, Archean palaeoplacer (e.g. Witwatersrand) Au, magmatic Ni, roll-front and unconformity U.

### ORE DEPOSITS OF SOUTH AMERICA (CHILE, PERU)

**March 2017 and 2019**

An exciting field-based course in the Andes covering the major ore deposit styles of South America, with deposit types including porphyry Cu-Mo, high sulfidation epithermal gold and iron-oxide Cu-Au. Mines visited include El Teniente (the world's largest underground mine) and Chuquicamata (the world's largest open pit). A series of presentations by researchers and exploration geologists working in South America address the geology, tectonic-setting and important exploration criteria for each deposit style.

### ORE DEPOSIT GEOCHEMISTRY, HYDROLOGY AND GEOCHRONOLOGY

**June 2017 and 2019**

This course covers a variety of geochemical and geochronological techniques used to interpret environments of ore formation and processes of ore genesis, and discusses the implications of these data sets for mineral exploration. Topics include Ar-Ar, U-Pb and Re-Os geochronology, whole rock and trace element chemistry of igneous rocks, sulfide trace element chemistry, stable and radiogenic isotopes, fluid inclusions and hydrothermal geochemistry.





## COURSES OFFERED BY OTHER UNIVERSITIES IN THE MGM PROGRAM

### The University of Western Australia

- Advanced Ore Deposits
- Exploration Targeting
- Mineral Exploration Data Analysis
- Ore Deposit Field Excursion – South Africa
- Applied Structural Geology
- Multiscale Tectonic Systems

For further information contact:

Email: Haley.Newberry@uwa.edu.au

Tel: +61 (0) 8 6488 6794

### James Cook University

- Advanced Techniques in Mining and Exploration Geology
- Advanced Field Training
- Business and Financial Management in the Minerals Industry
- Integrated Spatial Analysis and Remote Sensing of Mineral Exploration Targets

For further information contact:

Email: mgm@jcu.edu.au

Tel: +61 (0) 7 4781 4726

### Curtin University

- Natural Resource Economics
- Mineral Finance and Project Evaluation
- Resource Cost and Capital Investment
- Resource Sector Finance

For further information contact:

Email: r.mcginley@curtin.edu.au

Tel: +61 (0) 8 9266 1393

## COURSE COSTS

The total cost of the degree varies depending on which units are taken. For UTAS campus-based courses, students only pay the university tuition fee, which is approximately \$2,200 per unit for domestic students (Commonwealth supported) and \$6,000 per unit for international students. Please consult the UTAS website for more information on the current fees ([utas.edu.au/courses/set/courses/s7w-master-of-economic-geology](http://utas.edu.au/courses/set/courses/s7w-master-of-economic-geology)). The field-based courses have additional costs to cover travel and accommodation. As a guide, Ore Deposits of South America had an additional fee of \$8,000 in 2015, and in 2014 the Volcanology and Mineralisation in Volcanic Terrains course cost an extra \$4,200 on top of the tuition fee. Please note that the cost of travel to the various partner institutions and/or to overseas venues must also be paid by the student (not included in fees).

## TAKING THE NEXT STEP – ENROLMENT

Domestic students can choose between CODES, UWA, or JCU as their home institution. International students have the choice of CODES or UWA. The choice should be based on which institution offers the most units of interest to you, and is best equipped to supervise your research thesis (if applicable). Please note that Curtin University also offers courses that may be taken for credit towards the Master of Economic Geology degree, but students cannot enrol via this university.

For domestic students (including New Zealand citizens) online applications for admission can be made here: [utas.edu.au/admissions](http://utas.edu.au/admissions)

The code for the program is S7W.

For international students (excluding New Zealand citizens) online applications for admission can be made here: [utas.edu.au/international](http://utas.edu.au/international)

## FOR FURTHER INFORMATION CONTACT:

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[utas.edu.au/codes/masters-short-courses](http://utas.edu.au/codes/masters-short-courses)

**CRICOS Provider Code: 00586B**

## CODES

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