



MASTER OF ECONOMIC GEOLOGY SHORT COURSE

Ores in Magmatic Arcs - Tasmania and the circum-Pacific

22 November – 3 December, 2021



CODES, Centre for Ore Deposit and Earth Sciences, University of Tasmania

CRICOS Provider Code 00586B

COURSE PRESENTERS

David Cooke is Professor of Ore Deposit Geochemistry and Director of CODES. He has extensive research expertise in hydrothermal fluid chemistry and ore-forming systems, specialising in porphyry and epithermal deposits.

Michael Baker is a Senior Research Fellow in Economic Geology at CODES. He has extensive research expertise in mineral chemistry and its applications to exploration for porphyry and epithermal deposits, and has worked extensively in South America.

Lejun Zhang is a Senior Research Fellow at CODES specialising in the application of alteration mineral chemistry for enhancing exploration in lithocap and green rock environments, and vectoring using SWIR and whole-rock geochemical data.

Indrani Mukherjee is a Postdoctoral Research Fellow at CODES who specialises in pyrite geochemistry and its implications for ocean and atmospheric evolution, and for the evolution of sediment-hosted base metal deposits.

Sebastien Meffre is the Head of Discipline of Earth Sciences at the University of Tasmania. Sebastien is a specialist in the tectonic evolution of the Southwest Pacific, including the Tasmanides.

Andrew McNeill is the Chief Government Geologist at Mineral Resources Tasmania. He has extensive experience in the geology of, and exploration for, VHMS deposits in the Mount Read Volcanics of western Tasmania.

Adi Maryono is currently VP Exploration and Director at J Resources and Sulawesi Cahaya Mineral. With 32 years of diverse experience in Au-Cu and Ni exploration, he has been involved in discoveries of world-class Cu-Au porphyry and Ni laterite deposits and other smaller Au deposits.

Jonathon Hoye is the Senior Geologist Orebody Knowledge at CMOC - Northparks Mines, responsible for exploration strategy, targeting, research and geometallurgy. He has been an exploration geologist for both junior and major mining companies, exploring for deposits in the magmatic-hydrothermal continuum, with a strong focus on alkalic porphyry and epithermal systems in the circum-Pacific region.

TRAVEL AND CLOTHING

All participants must have appropriate PPE for mine site visits (steel-capped boots, long-sleeved shirts, long sturdy trousers). CODES will provide hard hats, reflective vests and safety glasses if required. You will need sun cream, lip balm and moisturisers, and cold and wet weather gear.

REGISTRATION

Registration fees cover the cost of field trip lunches, ground transport and accommodation. Participants are responsible for all other meals, alcohol, air travel to/from Hobart, and accommodation in Hobart.

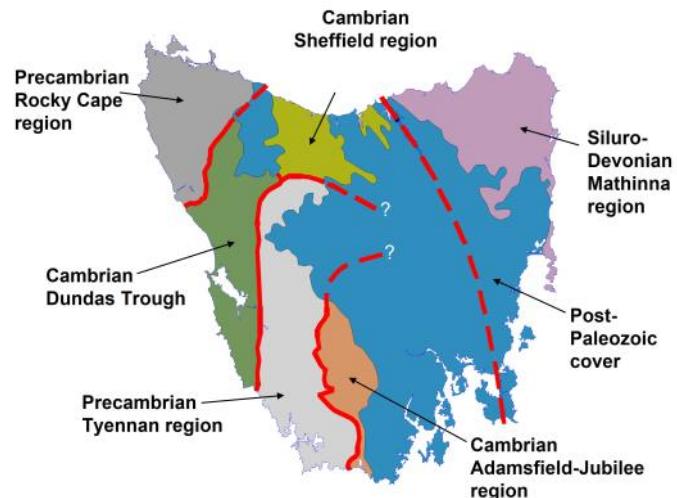
Please note that due to on-going Covid travel restrictions, this course is only available to be taken by participants resident in Australia. All participants travelling to Tasmania for the course are required to comply with state quarantine regulations throughout the period of the course, and we strongly urge all participants to be fully vaccinated against COVID-19.

This short course will provide participants with an introduction to the ore deposit styles that characterise arc-related geological environments. It will include reviews of the regional and local geology of selected magmatic arcs, along with detailed evaluations of ore deposit characteristics, mineralisation styles and genetic models. Exploration techniques for magmatic-hydrothermal ore deposits are discussed in detail and recent exploration results are evaluated in terms of various genetic models.

The first week of the course includes a one-week field excursion to western Tasmania to learn about Cambrian polymetallic VHMS and high sulfidation state mineralisation that formed in a back-arc setting, and Devonian-Carboniferous skarn, vein, and granite-related carbonate replacement-style Sn-W-Fe-Cu-Zn-Pb-Ag deposits that formed in a post-collisional orogenic belt..

The second week of the course will involve lectures and practical exercises at CODES, reviewing case studies of ores from magmatic arcs from South America (Chile, Peru), Indonesia, the Philippines, Papua New Guinea (Lihir, Porgera, Wafi-Golpu) and eastern Australia (Macquarie Arc), utilising our extensive sample and teaching collections that reside in the CODES archives.

Please note that mine site visits are dependent on COVID protocols at the time of travel and may be cancelled at the last minute. Alternate field and/or laboratory activities will be scheduled in response to covid disruptions.



Ores in Magmatic Arcs
is offered as a unit in the national Minerals Geoscience Masters program.

MASTER OF ECONOMIC GEOLOGY

THE MOST COMPREHENSIVE MASTER DEGREE IN MINERAL EXPLORATION AND MINING GEOLOGY ANYWHERE IN THE WORLD

This course work-based Masters program is aimed at geoscientists who want to gain a thorough up-date on advances across the spectrum of economic geology applied to mineral exploration. The Master of Economic Geology at UTAS is part of the national Minerals Geoscience Masters program, jointly offered by the University of Tasmania and the University of Western Australia, in conjunction with Curtin Business School at Curtin University.

Course structure

The Masters course can be completed in either of two ways:

Option 1: requires the completion of six coursework units and a minor research thesis. 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 30 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 30 months part-time (flexible in recognition of industry participants).

Masters units offered by CODES

- 18–23 October & 15–19 November 2021:
KEA711 Geometallurgy
- 21 November – 3 December 2021:
KEA707 Ores in Magmatic Arcs (Tasmania and the circum-Pacific) ^
- February 2022:
KEA718 Advanced Field Skills in Economic Geology ^
- April-May 2022:
KEA716 Fundamentals of Economic Geology
- June—July 2022:
KEA712 Ore Deposit Models and Exploration Strategies
- October 2022:
KEA710 Exploration in Brownfield Terrains
- August—October 2022:
KEA713 Geodata Analytics
- November 2022:
KEA708 Volcanology and Mineralisation in Volcanic Terrains (New Zealand, western Tasmania) ^
- February 2023:
KEA718 Advanced Field Skills in Economic Geology ^
- April—May 2023:
KEA716 Fundamentals of Economic Geology
- June 2023:
KEA709 Ore Deposit Geochemistry, Hydrology and Geochronology

[^] COVID-19 travel restrictions may impact the running of this unit

For further coursework Masters information contact:

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Email: CODES.Info@utas.edu.au
Robert.Scott@utas.edu.au
Website: <http://www.utas.edu.au/codes/masters-short-courses>

PROVISIONAL PROGRAM

WEEK 1: November 22—27

	Student literature review presentations	<i>AM: Hobart PM: Drive to western Tasmania</i>
Monday November 22	Introduction to the shortcourse, Geological evolution of the Tasmanides	PRESENTERS: David Cooke, Sebastien Meffre, Andrew McNeill, Masters students
Tuesday November 23	Cambrian volcanic-hosted massive sulfide deposits and the Mt Read volcanics	TRIP LEADERS: David Cooke, Lejun Zhang, Indrani Mukherjee
Wednesday November 24	Cambrian volcanic-hosted massive sulfide deposits and the Mt Read volcanics	
Thursday November 25	Devonian – Carboniferous Sn-W deposits, polymetallic carbonate replacement and vein deposits, and the Heemskirk – Pine Hill – Granite Tor batholith	
Friday November 26	Devonian – Carboniferous Sn-W deposits, polymetallic carbonate replacement and vein deposits, and the Heemskirk – Pine Hill – Granite Tor batholith	
Saturday November 27	Devonian – Carboniferous Sn-W deposits, polymetallic carbonate replacement and vein deposits, and the Meredith Granite	<i>AM: Western Tasmania PM: Drive to Hobart</i>

* Please note that mine site visits are dependent on Covid protocols at the time of travel and may be cancelled at the last minute. Alternate field and/or laboratory activities will be scheduled in response to covid disruptions.



WEEK 2: November 29—December 3

Monday November 29	The Macquarie Arc, eastern Australia (case studies from Cadia, Northparkes, Cowal)	PRESENTERS: David Cooke, Jonathon Hoye
Tuesday November 30	Chilean magmatic arc (case studies from El Teniente, Rio Blanco, Chuquicamata, Cerro Casale and Collahuasi porphyry Cu-Mo and Cu-Au deposits, and Pascua-Lama HS epithermal deposits)	PRESENTERS: David Cooke, Lejun Zhang, Michael Baker
Wednesday December 1	Peruvian magmatic arc (case studies from Las Bambas Cu skarn, and Yanacocha, La Zanja and Colquijirca HS epithermal deposits)	PRESENTERS: David Cooke, Lejun Zhang
Thursday December 2	Philippines magmatic arcs (case studies from Mankayan, Baguio, Batong Buhay, Didipio and Boyongan porphyry and epithermal districts)	PRESENTERS: David Cooke, Lejun Zhang, Michael Baker
Friday December 3	Indonesian and Papua New Guinea magmatic arcs (case studies from Batu Hijau, Tujuh Bukit, Gosowong, Grasberg, Porgera, Lihir)	PRESENTERS: David Cooke, Lejun Zhang, Michael Baker, Adi Maryono

REGISTRATION FORM

Ores in Magmatic Arcs

22 November – 3 December 2021

Please complete and return to:

CODES

University of Tasmania, Private Bag 79

Hobart, Tasmania, Australia 7001

Ph: +61 3 6226 2472

Email: CODES.Info@utas.edu.au

PERSONAL DETAILS

Title—Please highlight (Prof / Dr / Mr / Mrs / Ms / Miss)

First Name: Last Name: (surname / family name):

Preferred Name (for use on name tag):

Position:

Company / University / Affiliation:.....

Address:

City: State: Postcode: Country:

Phone (work): Phone (home): Phone (mobile / cell):

Email:

Dietary requirements / allergies / other health issues:

Next of kin (name, relationship and email/phone contact):

REGISTRATION FEES

All fees are in Australian dollars (AUD) and include GST.

Please indicate

MGM Masters Students:

(Excludes airfares, meals, accommodation in Hobart and UTAS tuition fee)

Week 1 field trip: \$900

Industry Participants *:

(Excludes airfares, meals and accommodation in Hobart)

Full course (in person)- including Week 1 field trip: \$3,960

Week 2 lectures only (online– morning sessions): \$990

Other Students *:

(Excludes airfares, meals and accommodation in Hobart)

Full course (in person)- including Week 1 field trip: \$900

Week 2 lectures only (online– morning sessions): \$225

*Participant numbers for the field course are capped, with preference to enrolled MGM students. Other interested parties will be advised whether they have secured a place by the middle of November.

NB Full refunds of field costs payments will be provided in the event of cancellation, or inability to travel due to covid restrictions.

PAYMENT

Registrations and full payments are due by 15th of November, 2021.

Preferred payment method. Please indicate

Credit Card

Upon receipt of your registration from you will be provided with a payment reference number and web address for online payments. Please note: Credit card details cannot be accepted by email.

Cheque or Bank Draft

Please make cheques and bank drafts payable to “The University of Tasmania”. Bank drafts must be made out in Australian currency (AUD).

UTAS Purchase (for students with internal accounts only)

UTAS account number.....

Invoice

Name, address and email address for person responsible for payment of invoice:

Please retain a copy of this form from your records and email to CODES.Info@utas.edu.au