

MASTER OF ECONOMIC GEOLOGY FIELD UNIT

Volcanology and Mineralisation in Volcanic Terrains

1 – 14 March 2024



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

CRICOS Provider Code 00586B

This is a highly practical, field-based unit in which participants gain first-hand experience in the recognition, classification and interpretation of modern and ancient volcanic rocks. The unit begins with studying well preserved modern and recent volcanic landforms, volcanic deposits and associated hydrothermal systems on the North Island of New Zealand (NZ). By visiting a range of spectacular field locations, participants gain insights into the processes and products of different eruption styles, contrasts in scale and structure of volcanoes, and the identification, description, logging and interpretation of key volcanic facies associations. Armed with an understanding of volcanic products and processes based on the inspection of NZ examples, where primary textural and compositional features are well preserved, participants travel to western Tasmania to inspect deformed and altered ancient (~500 m.y. old) volcanic successions of the Mount Read Volcanics and associated mineral deposits.

This unit has a strong focus on field observations and hands-on practical skills, supported by an understanding of theoretical aspects. The unit presenters have detailed knowledge of the areas and deposits visited and are uniquely equipped to deliver the skills and insights needed by participants.

A valid passport is required for entry into NZ and Australia, and it is the responsibility of each participant to determine whether they require a visa, and to obtain that visa before travel.

COURSE PRESENTERS

Rebecca Carey is a Associate Professor in Earth Sciences/CODES, University of Tasmania. Rebecca's research is associated with modern volcanic architectures, magma ascent eruption processes during subaerial and submarine eruptions. Rebecca uses field studies, microtextural and volatile analysis of pyroclasts to understand the drivers of eruptions. She uses the studies of modern submarine volcanic architectures and hydrothermal systems to enable strategies for more efficient ore deposit discoveries. This research is being conducted with various industry partners, the Australian Research Council and CODES researchers.

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

Robert Scott is Master of Economic Geology coordinator and Senior Lecturer in Earth Sciences/CODES, University of Tasmania. He has expertise in structural geology, geological mapping, sediment-hosted and structurally-controlled ore deposits.

Lejun Zhang is a Senior Lecturer in Economic Geology in Earth Sciences/CODES, University of Tasmania. His research focuses on magmatic-hydrothermal ore deposits, with expertise in utilising spectral data, whole-rock geochemistry, and alteration mineral chemistry to enhance exploration efforts, especially in lithocap environments.

Martin Jutzeler is a Senior Lecturer in Earth Sciences/CODES, University of Tasmania, with specialisation in volcanology and sedimentology.

Andrew McNeill is Chief Government Geologist at Mineral Resources Tasmania. He is a geologist with extensive experience in industry, academia and government. He worked as an exploration geologist in the Mount Read Volcanics for many years.

TRAVEL AND CLOTHING

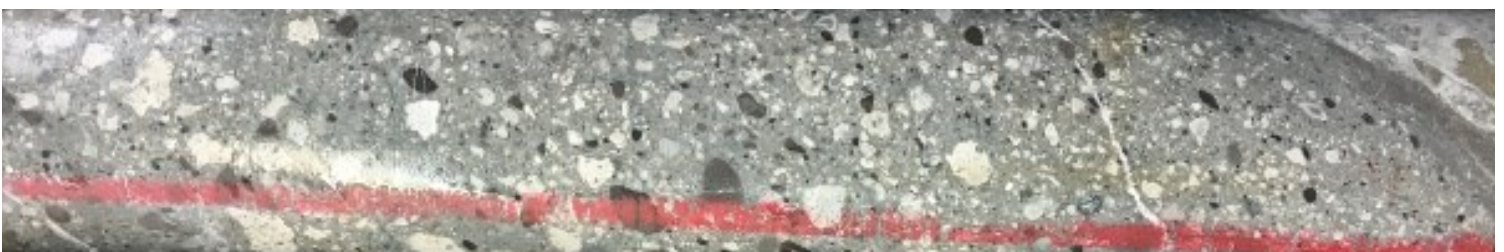
All participants must carry their own PPE (steel-capped boots , long-sleeved shirts, long sturdy trousers, hard hats, reflective vests, safety glasses, gloves and hearing protection). You will need cold and wet weather gear, as weather and conditions can be unpredictable. Good hiking boots are highly recommended.

REGISTRATION/FIELD FEES INCLUSIONS

- Accommodation 1st—13th March inclusive except night of 10th March (Hobart). Please note most student accommodation will be shared (students may request single rooms for additional cost)
- Ground transport
- Entry fees, course notes and field guide
- Breakfasts, lunches and some group dinners

EXCLUSIONS

- Travel to and from NZ and Australia (e.g. flights, accommodation in transit, visa fees etc.)
- Accommodation in Hobart
- Most dinners
- Alcohol



Volcanology and Mineralisation in Volcanic Terrains
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 (MGM) 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 (research pathway): requires the completion of six coursework units (worth 75% of total credit points) and a minor research thesis (worth 25%). Five of the units must be completed at CODES including thesis units KEA724 and KEA725, core units KEA712, KEA716 and at least one field-based unit, 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 (professional pathway): requires the completion of eight units of coursework, at least five of which must be undertaken at CODES including core units KEA712, KEA716 and

at least one field-based unit. Duration: up to 36 months part-time (flexible in recognition of constraints on industry participants).

Participating universities offer up to seven units annually or in rotation over a two-year period. Most units are of two weeks duration.

Fees

UTAS tuition fees are approximately \$2,237 per unit (8 in total) for domestic students (2024 rate for Commonwealth Supported Places) and \$9,313 (AUD) per unit for full-fee paying overseas students (FFPOS) (2024 rate). Field-based courses have additional costs. Costs will vary for units taught by other MGM partner institutions.

Entry Requirements

A BSc (Hons), a BSc (majoring in geoscience) with at least two years industry experience, or a Graduate Certificate of Economic Geology (K5F). International students should be aware that English language proficiency requirements also apply.

Masters units offered by CODES

- 4 – 17 February 2024:
KEA718 Advanced Field Skills in Economic Geology [^]
- 1 – 14 March 2024:
KEA708 Volcanology and Mineralisation in Volcanic Terrains (New Zealand, western Tasmania) [^]
- 8 – 13 April & 6 – 10 May 2024:
KEA716 Fundamentals of Economic Geology ^{*}
- 3 – 8 June & 8 – 12 July 2024:
KEA712 Ore Deposit Models and Exploration Strategies [#]
- August – October 2024 (Intensive Part 2: September):
KEA713 Geodata Analytics ^{*}
- 28 October – 2 November & 18 – 22 November 2024:
KEA710 Exploration in Brownfield Terrains [#]
- March 2025:
KEA707 Ores in Magmatic Arcs (Indonesia) [^]
- June – July 2025:
KEA709 Ore Deposit Geochemistry, Hydrology and Geochronology [#]
- September – October 2025:
KEA707 Ores in Magmatic Arcs (South America) [^]
- October 2025:
KEA711 Geometallurgy [#]

^{*} *online delivery*

[#] *blended delivery (face to face and online)*

[^] *face to face delivery*

For further information contact:

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Robert.Scott@utas.edu.au
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PRELIMINARY PROGRAM

LEADERS: REBECCA CAREY, DAVID COOKE, LEJUN ZHANG, ROBERT SCOTT, MARTIN JUTZELER, ANDREW McNEILL

	Date	Field location	Accommodation location
PART 1: NEW ZEALAND (1—10 March 2023)	Friday March 1	Arrive in Auckland (AM arrival for afternoon/evening lectures)	Auckland
	Saturday March 2	Rangitoto Island	Auckland
	Sunday March 3	Waihi/Waiotapu	Rotorua
	Monday March 4	Tarawera volcano	Rotorua
	Tuesday March 5	Tongariro traverse	Taupo
	Wednesday March 6	Taupo caldera	Taupo
	Thursday March 7	Ruapehu	Taupo
	Friday March 8	Outflow deposits Taupo caldera	Auckland
	Saturday March 9	Bethells and Campbells Beaches	Auckland
	Sunday March 10	Travel to Tasmania	Hobart
PART 2: W. TASMANIA (11—14 March 2023)	Monday March 11	Lectures at CODES (UTAS), travel to western Tasmania	Queenstown
	Tuesday March 12	Rosebery mine and surrounds	Queenstown
	Wednesday March 13	Hellyer mine and surrounds	Queenstown
	Thursday March 14	1/2 field day, travel to Hobart (arrive PM, departing flights should not be booked for earlier than late afternoon/early evening departure)	Hobart



REGISTRATION FORM

Volcanology and Mineralisation in Volcanic Terrains 1–14 March, 2023

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:

Position:

Company / University:

Address:

City: State: Postcode: Country:

Email: Phone (mobile / cell):

Dietary requirements / allergies / other health issues:

.....Approx. weight (dressed).....

Emergency contact (name, email & phone contact):

Passport (Nationality/number/expiry):.....

REGISTRATION FEES (estimated– TBC late January)

All fees are in Australian dollars (AUD) and include GST for the Australian part of the course. Please indicate

MGM Masters Students (UTAS or UWA):

Total field fee \$4,500 (Excludes airfares and UTAS tuition fee)

- Deposit (incl GST): \$1,500
 Balance (GST free): \$3,000

Industry Participants:

Whole trip registration fee \$9,000 (Excludes airfares)

- Deposit (incl GST): \$3,000
 Balance (GST free): \$6,000

New Zealand only \$6,000 (Excludes airfares)

- Deposit (GST free): \$3,000
 Balance (GST free): \$3,000

Tasmania only (accommodation and transport required)

- Total (incl GST): \$3,000

Tasmania only (accommodation and transport NOT required)

- Total (incl GST): \$2,300

Other Students:

Whole trip field fee \$4,500 (Excludes airfares)

- Deposit (incl GST): \$1,500
 Balance (GST free): \$3,000

New Zealand only (Excludes airfares)

- Total (GST free): \$3,000

Tasmania only

- Total (incl GST): \$1,500

NB. Preference will be given to enrolled MGM students.

PAYMENT

Registrations are due by 2nd January, 2024. Deposit payments are due by the 14th January, 2024[#]. Full payment must be received by 4th February, 2024.

Preferred payment method. Please indicate

Credit Card

Upon receipt of your registration form and confirmation of your place, 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.

Invoice (payment can be made by credit card or bank transfer)

Invoice to (name/company):.....

Attention to (optional):

Reference (e.g. order number (optional)):

Address:

.....

.....

Email address:

#NB due to the high level of interest in this field-based unit, and the limit on group size, places are not secured until deposit payments have been received.

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