



## MASTER OF ECONOMIC GEOLOGY UNIT

*via online delivery*

# Exploration in Brownfield Terrains

**Week 1: 28 October – 2 November 2024**

**Week 2: 18 – 22 November 2024**

Online content will be delivered via Zoom between 9am and 6pm AEDT (UTC+11)



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

CRICOS Provider Code 00586B

*Exploration in data-rich environments, close to existing mines, has become a preferred and successful method of increasing company resources. With this exploration philosophy in mind, CODES is proud to present a Masters-level two-week intensive training program designed to bring participants up to date with the approaches, tools and software needed for navigating, integrating and interpreting extensive multi-faceted, multi-generational geoscience data sets.*

*The course will cover cutting-edge technologies in geophysics, geochemistry, geodata analytics, hyperspectral reflectance and 3D visualisation, using real data from world-class mineralised districts. The program is presented by expert teaching staff from CODES and leading minerals industry professionals.*

## CONFIRMED PRESENTERS AND PANELLISTS

**Wessley Edgar** (MSc Mineral Econ., BSc Geology Hons) has been Chief Geologist (Aust.) for Agnico Eagle and its Australian predecessors Kirkland Lake Gold and Newmarket Gold since 2016. He has over 34 years' experience in various mine and exploration roles for RGC, Goldfields Ltd, Auriongold, Placer Dome Asia-Pacific, Iberian Resources, Castlemaine Goldfields, and Navarre Minerals. Maintaining input into exploration in the Northern Territory since the Cosmo-Lantern mine closed in 2020, his first mine experience was at the Pine Creek gold mine there in 1991.

**Kim Frankcombe** graduated from UTAS, prior to the creation of CODES, with a geology and geophysics double major. He started working life as an exploration geologist before transitioning to an exploration geophysicist. He has worked for international and national majors, global contractors and for over 25 years as a consultant within consulting groups. He provides everything from broad geoscience advice to single prospectors and juniors with low levels of technical expertise through to high level specialist geophysical advice to large company geophysicists and other consulting groups.

**Kate Hine** is the Principal Consultant for, and a Director of, Mitre Geophysics which has been advising the mining industry since 1980, and has worked on projects across the globe including both Antarctica and the Arctic. Kate has over 20 years experience working on a wide variety of commodities in a range of different geological settings, with some of the most interesting and exciting discoveries in Australia and worldwide. In Kate's portfolio of discoveries, several are more than 400m below surface with no surface indications. Her particular speciality is high quality EM processing and interpretation, but she also has unrivalled expertise in MMR methods, used to detect and define weakly conductive mineralisation. Kate is also active in research and publication and has won two 'Best Paper' awards from the Australian Society of Exploration Geophysicists. She is also regularly invited to speak at industry events. Kate graduated in 2002 from the University of Tasmania.

**Terry Hoschke** joined Geopeko in the 1980s exploring for a number of commodities including gold, uranium and base metals. This included conducting IP and magnetic surveys at North Parkes. He managed the Darwin exploration office for North Limited for 3 years from 1992 and subsequently worked on porphyry exploration for North in Indonesia. He worked for Normandy/Newmont from 2001 to 2013 during which time he completed an

MSc thesis on the geophysics of porphyry and epithermal systems. This was subsequently published by CODES. He is currently a geophysical consultant, based in Perth. He has worked on a number of projects in NSW including geophysics in the Cadia area for Newcrest.

**Ned Howard** is Principal Geologist, Technical at Evolution Mining. After graduating from UTAS with BSc Hons in 2004, Ned worked as an exploration geologist with Barrick and junior companies in Australia, Indonesia, PNG and Canada, before joining Evolution Mining in 2013. With Evolution, he has held geoscience and project generation roles supporting their near-mine and greenfields exploration efforts. He specializes in geochemical and spectral applications and has worked on a number of gold deposit styles, predominately Archean greenstone and epithermal.

**David Isles** is a semi-retired geophysicist. He provides consulting and training services through Southern Geoscience Consultants focused on interpretation of aeromagnetics, gravity and radiometrics in mineral exploration applications.

**Andrew McNeill** is Chief Government Geologist, Mineral Resources Tasmania. Andrew completed his PhD at CODES in 1998, has spent many years as an exploration geologist in both Tasmania and mainland Australia, six years at CODES working on VHMS and magmatic Ni, and has for the last 9 years worked at Mineral Resources Tasmania.

**Chris Muller** is Executive Vice President—Exploration for K92 Mining.

**Jo Whelan** is Manager, Basement Geoscience, Northern Territory Geological Survey.

**Tony Webster** is Principal Structural Geologist, GeoDiscovery Group. He specialises in the application of structural geology to problems in mining and exploration geology, and in unravelling the litho-structural architecture of complexly deformed ore deposits.

**Lesley Wyborn** is Honorary Professor, Australian National University. Her geoscience research focuses on improving the understanding of major Proterozoic Granite Systems and in developing the concepts for national to regional controls on major Mineral Systems.

**Participants will require a computer (ideally equipped with a mouse) that is capable of running Leapfrog Geo and iGas in order to facilitate 3D visualisation and analysis of exploration data. Training licences for these software packages will be available if required by participants.**

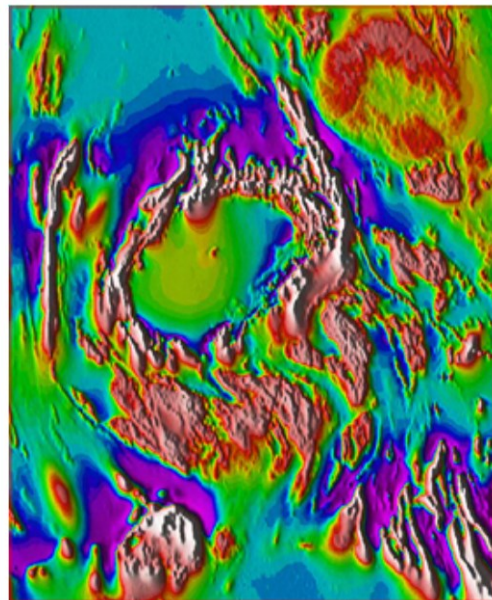
## CODES PRESENTERS

**Matthew Cracknell**, Senior Lecturer

**Michael Roach**, Adjunct Researcher

**Robert Scott**, Senior Lecturer and Masters Co-Ordinator

**Zebedee Zivkovic**, Research Fellow



## ***Exploration in Brownfield 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: 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 (but 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 units have additional costs. Costs will vary for units taught by other MGM partner institutions.

#### **Entry Requirements**

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

#### **Masters units offered by CODES**

- 28 October – 2 November & 18–22 November 2024:  
KEA710 Exploration in Brownfield Terrains #
- 9 – 22 March 2025:  
KEA707 Ores in Magmatic Arcs (Indonesia) ^
- April – May 2025:  
KEA716 Fundamentals of Economic Geology \*
- June – July 2025:  
KEA709 Ore Deposit Geochemistry, Hydrology and Geochronology #
- August – October 2025 (five-day live (interactive) intensive block in September):  
KEA713 Geodata Analytics \*
- October 2025:  
KEA711 Geometallurgy ^
- October – November 2025:  
KEA707 Ores in Magmatic Arcs (South America) ^
- February 2026:  
KEA718 Advanced Field Skills in Economic Geology ^
- March 2026:  
KEA708 Volcanology and Mineralisation in Volcanic Terrains (New Zealand, western Tasmania) ^
- April – May 2026:  
KEA716 Fundamentals of Economic Geology \*
- June – July 2026:  
KEA712 Ore Deposit Models and Exploration Strategies #

\* **online delivery**

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

^ **face to face delivery**

#### **For further information contact:**

Dr Robert Scott &/or CODES Info  
Masters Coordinator, CODES  
Private Bag 79, Hobart 7001, Australia  
Tel: +61 3 6226 2786  
Email: CODES.Info@utas.edu.au  
Robert.Scott@utas.edu.au  
Web: utas.edu.au/codes/masters-short-courses

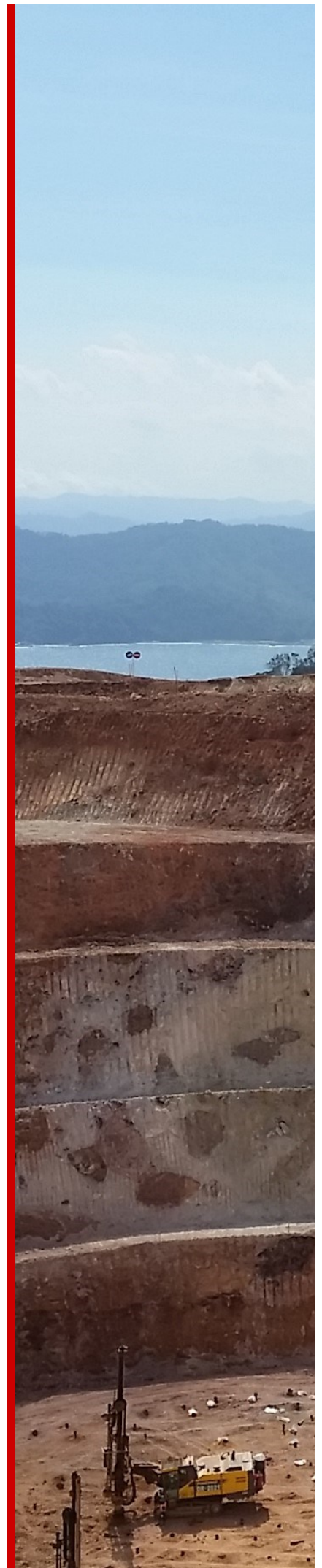
# PRELIMINARY PROGRAM

---

	<b>(am) Introduction to Brownfields Exploration: Perspectives and Case Histories</b> (Robert Scott, Ned Howard, Chris Muller)
Monday 28 October	<b>Panel 1: Brownfield Philosophies: Past, Present and Future</b> (Ned Howard, Chris Muller, TBC) <b>(pm) Database Management</b> <b>Panel 2: Working with Old Data: Challenges and Opportunities</b> (Tony Webster, Andrew McNeill, TBC) <b>Database practical</b>
Tuesday 29 October	<b>Brownfields Exploration: Geophysics</b> (Michael Roach)
Wednesday 30 October	<b>Panel 3: Geophysical Brownfields Exploration</b> (Terry Hoschke, Kate Hine, Kim Frankcombe) <b>Brownfields Exploration: Geophysics cont.</b> (Michael Roach)
Thursday 31 October	<b>Brownfields Exploration: Geochemistry</b> (Matthew Cracknell, Zebedee Zivkovic) <b>Hellyer practical exercise</b> (Matthew Cracknell, Zebedee Zivkovic)
Friday 1 November	<b>Hellyer practical exercise cont.</b> (Matthew Cracknell, Zebedee Zivkovic)
Saturday 2 November	<b>3D Modelling—Leapfrog cont.</b> (Robert Scott)
Monday 18 November	<b>Panel 4: An Introduction to the Pine Creek Inlier, Northern Territory</b> (David Isles, Lesley Wyborn, Wess Edgar, Jo Whelan) <b>Brownfields exploration in Proterozoic Au Districts</b> (Robert Scott, Matthew Cracknell)
Tuesday 19 November	<b>Brownfields Exploration in Proterozoic Au Districts</b> (Robert Scott, Matthew Cracknell)
Wednesday 20 November	<b>Brownfields exploration in Proterozoic Au Districts cont.</b> (Robert Scott, Matthew Cracknell)
Thursday 21 November	<b>Brownfields exploration in Proterozoic Au Districts cont.</b> (Robert Scott, Matthew Cracknell)
Friday 22 November	<b>Student Presentations and Wrap-Up</b>

---

\*\* An option to register for just the Panel sessions is available.



# REGISTRATION FORM

## Exploration in Brownfield Terrains

Week 1: 28 October – 2 November, 2024

Week 2: 18 – 22 November, 2024

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 / Affiliation: .....

Address: .....

City: ..... State: ..... Postcode: ..... Country: .....

Email: ..... Phone (mobile / cell): .....

Dial-in Location (ie City): ..... Dial-in Timezone (e.g. UTC+10): .....

### REGISTRATION FEES

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

Please indicate

#### Minerals Geoscience Masters Program (MGM) Students:

(Excludes UTAS tuition fee)

Full course (free)- University of Tasmania enrolled

Full course (free)- University of Western Australia enrolled

#### Industry Participants:

Full unit (\$3,600) virtual attendance

\_\_\_ days at \$650/day virtual (max charge \$3,600, circle days below)

#### Other Full-time Students (must provide proof of student status):

A limited number of discount places may be available for full-time students from other institutions. Please contact [CODES.Info@utas.edu.au](mailto:CODES.Info@utas.edu.au) to inquire about availability, together with proof of current full-time enrolment.

#### Panel Sessions only:

All Panels (\$700)

\_\_\_ Panels (\$200/panel) (circle selected panels: 1 2 3 4 )

#### PLEASE NOTE:

Participants *NOT* attending entire course, please circle selected days

Week 1: 28 29 30 3 1 2 October—November

Week 2: 18 19 20 21 22 November

### PAYMENT

Registrations are due by the 16th October, 2024. Full payment must be received by the 23rd of October, 2024.

Preferred payment method. Please indicate

#### Credit Card via Payment Portal

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 (the payment portal will provide you with a tax invoice/receipt upon payment). 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:.....

**Please retain a copy of this form for your records and email or post original to [CODES.Info@utas.edu.au](mailto:CODES.Info@utas.edu.au)**

**MGM STUDENTS: THIS FORM DOES NOT CONSTITUTE AN OFFICIAL UNIVERSITY ENROLMENT – YOU MUST ALSO ENROL VIA ESTUDENT BY THE INTERNAL DEADLINE (this may be different to the date above)**