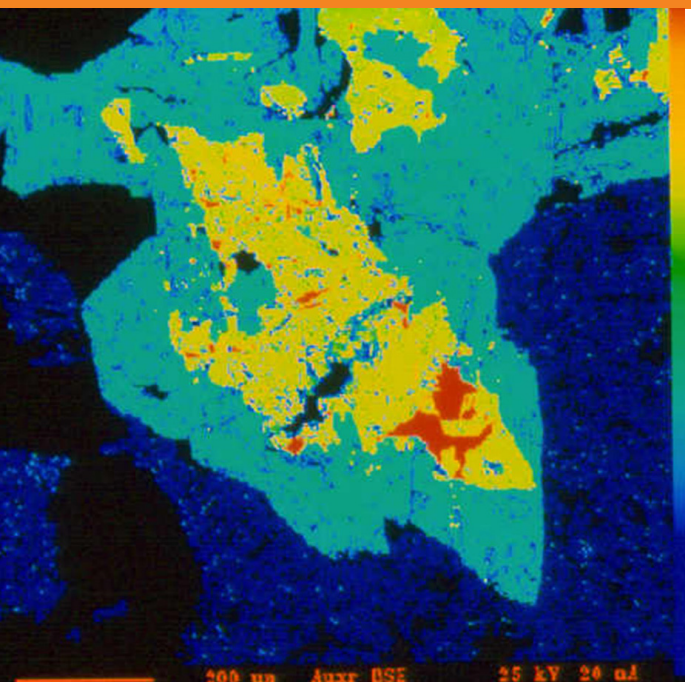
Structurally controlled Hydrothermal Alteration in Orogenic/Intrusion-related Gold Systems

AGATE PROJECT
Knowledge, Skills, Networks in Earth and Planetary Science

3-DAY PROFESSIONAL TRAINING COURSE
25-27 July 2026, Accra, Ghana



This three-day training course/workshop is designed for mine and exploration geologists.

It introduces a mineral systems approach for understanding orogenic and intrusion-related gold deposits. Emphasis is placed on structural controls, hydrothermal alteration and mineralisation, and fluid chemistry at epizonal, mesozonal, and hypozonal crustal levels.

The course combines lectures with hands-on exercises using selected rock samples, diamond drill core, thin and polished sections, micro-XRF (Tornado) images, and petrographic analysis from gold deposits in Western Australia, Guiana and Brazil. Strong emphasis is placed on exploration targeting in Archean granite–greenstone belt environments.

What You Will Learn

- Understand orogenic and intrusion-related gold deposits within a mineral system framework.
- Identify structural controls on gold mineralisation at camp and deposit scale.
- Recognise hydrothermal alteration styles, zones and mineral assemblages across shallow to deep crustal levels.
- Interpret mineral and textural relationships with respect to timing of shear zone deformation, hydrothermal alteration, and gold mineralisation events.
- Understand fluid chemistry and its role in hydrothermal alteration and gold precipitation.
- Apply 4D (space–time) controls to ore system evolution.
- Conduct a Mineral System Analysis (MSA) on an orogenic gold deposit.
- Translate an MSA into effective exploration targeting strategies.

Why Attend

- Industry-relevant training focused on real gold exploration and resource development.
- Hands-on work with diamond core and thin and polished sections from orogenic gold deposits.
- Case studies from the Yilgarn Craton and Guiana Shield.

Program

All practical sessions will use the University microscopes and participants' laptops. Please bring a hand lense and a scratcher.

Day	Course Elements
Day 1 Saturday 25/07 8:15am to 5pm	Overview: Gold Systems Mineral System Analyses 1: (Geotectonic setting, fluid/magma highways) Mineral System Analyses 2 : (Depositional Site Analyses I: Structural control at district, camp and deposit scale) Mineral System Analyses 3: (Depositional Site Analyses II: Hydrothermal alteration and geochemical footprint)
Day 2 Sunday 26/07 8:15am to 5pm	History of models for orogenic gold deposits (systems) *Group exercises 1: Epi, meso, hypozonal alteration and gold mineralisation* Intrusion-related and intrusion-hosted Au systems - what is the difference? Archean alkalic gold systems: new kid on the block? Orogenic gold deposits at the "bottom" of greenstone belts *Group exercises 2: Epi, meso, hypozonal alteration and gold mineralisation*
Day 3 Monday 27/07 8:15am to 5.30pm	Case Study: The Kalgoorlie Gold Camp in Western Australia: over 130 years of continuous mining and exploration. *Group exercises 2: Epi, meso, hypozonal alteration and gold mineralisation* Whole rock, trace element and mineral chemistry footprints *Group exercise 3: Hydrothermal alteration in Intrusion-related Au systems* Group presentations 3 Summary and open questions

Information

Course Leader: Steffen Hagemann

Steffen Hagemann is Professor of Economic Geology at The University of Western Australia. He has over 35 years of experience in structural geology, hydrothermal alteration, and ore systems, with a strong focus on gold, copper and iron ore mineralisation. His expertise lies in integrating field mapping, diamond core logging, and geophysical and geochemical datasets to understand ore body controls and mineral system evolution.

Date:

25 to 27 July 2026 - This training course includes a Saturday and a Sunday.

Duration:

3 days

Venue:

The University of Ghana, Accra - Earth Science Department - Botanical Gardens Road, Legon 489 Ghana.

Time:

From 8:15am to 5:30pm (exact schedule may vary by day).

Language:

English

Registration Fees:

USD 1,650 per attendee. The fee includes morning and afternoon tea, lunches. Payment must be completed before the start of the training. Any applicable country withholding taxes will be added to ensure the net amount received is USD 1,650.

Registration deadline:

30 April 2026

Certificate of participation:

Participants will receive a certifcat of participation upon completionof the training course.

Enquiries:

Agate Project - info@agate-project.org

Visa:

Please check whether you require a visa to attend the course. If you do, let us know so we can provide a letter of invitation to support your application.

Registration

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25 to 27 July 2026 - Accra, Ghana
Registration deadline 30 April 2026

Please complete this form and email it to: Corinne.Debat@agate-project.org

Company Information

Company .....

Address .....

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Entity to invoice .....

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Administrative Email contact .....

Participants

Total number of Participants .....

Attendee Name + email.(First name and surname)

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Attendee Name + email.(First name and surname)

.....

Attendee Name + email(first name and surname)

.....

Attendee Name + email(first name and surname)

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Fees and Currency

	US$	
Base registration Fee	1,650	

Withholding Tax if applicable	%

The organisers reserve the right to cancel the training if the minimum requirement of 12 participants is not met.