

# CTG Short Course 2024: EBSD applied to structural geology and petrology

Online, free Canadian Tectonics Group short course,  
April 2-4, 2024.

**Course description and objectives:** The goal of this short course is to provide basic training and a range of example applications to students and researchers interested in incorporating electron backscatter diffraction (EBSD) analyses into their own research, through a series of online, interactive lectures.

## Instructors:

- Matthew Polivchuk, Geological Survey of Canada
- Riccardo Graziani, Geological Survey of Canada
- Rellie Goddard, Lakehead University
- Tarryn Cawood, Geological Survey of Canada
- Jamie Kirkpatrick, McGill University
- Renelle Dubosq, Max Planck Institut für Eisenforschung
- Nicolas Piette-Lauziere, University of British Columbia
- Laura Nania, Geological Survey of Canada



## Who can participate:

Graduate students and researchers working in the fields of structural geology, metamorphic petrology, geochronology and tectonics. You must be able to commit to attending all lectures and are expected to actively participate in online exercises and discussion.

## Course requirements:

Participants should have access to Matlab and attempt to have MTEX installed as per instructions to be provided to registered participants, to participate in the hands-on exercises.

## To register:

Send an email expressing your interest to Dawn Kellett ([dawn.kellett@nrcan.gc.ca](mailto:dawn.kellett@nrcan.gc.ca)) by **March 15, 2024**.

## Syllabus:

### April 2, 2024

#### Part 1: EBSD fundamentals, 12:00-1:30 pm ET

- Theory, instrumentation, study design, data acquisition and simple processing - *Matthew Polivchuk, GSC (40 min)*
- Pattern indexing - *Renelle Dubosq, MPIE (40 min)*

#### Part 2: Intro to EBSD data processing, 2:00-3:30 pm ET

- Data processing, data interpretation approaches, hands-on exercise – *Riccardo Graziani, GSC (90 min)*

**April 3, 2024****Part 1: Applications in structural geology, 12:00-1:30 pm ET**

- Pole figures and Inverse pole figures: methods for identifying crystallographic inheritance across the coesite-quartz transition – *Rellie Goddard, Lakehead U (40 min)*
- Crystallographic vorticity axes – *Nicolas Piette-Lauziere, UBC (40 min)*

**Part 2: Applications in petrophysics and geochronology, 2:00-3:30 pm ET**

- Deformation fabrics and rock physical properties of mantle xenoliths– *Jamie Kirkpatrick, McGill U (40 min)*
- EBSD applied to geochronology - *Laura Nania, GSC (40 min)*

**April 4, 2024****Part 1: Applications in ore systems, Recap, Q/A, 12:00-1:30 pm ET**

- Sulphide deformation and remobilization – *Tarryn Cawood, GSC (40 min)*
- Q/A recap, other common applications not covered above (e.g. piezometry) – *All instructors (40 min)*

**Part 2: Follow up on hands-on exercises, 2:00-3:30 pm ET**

- Follow up of hands-on exercises from Day 1, Part 2 – *Riccardo Graziani, GSC (90 min)*