

# 3rd Intensive Training Course on Soil Micromorphology

**COURSE**

2019-2020

**PRE-REGISTRATION**

21/02/19 fins al 25/09/19

**REGISTRATION PERIOD**

21/02/19 fins al 25/09/19

**TUITION**

400 €

**MAXIMUM OF STUDENTS**

30

**TYPE**

Curs d'especialització

**CATEGORY**

Agronomia, Forest, Medi Ambient

**CREDITS**

4.35 ECTS

**TRAINING MODALITY**

Presencial

**COORDINATION**

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**ORGANIZATION**

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## PRESENTATION

Micromorphology is a study technique in earth sciences that describes, interprets, and measures the components, features, and fabrics of soils, regolith materials, and cultural components at the microscopic and submicroscopic levels. Undisturbed samples are required to see the arrangement and relationship of individual soil particles or components as they occur in nature, therefore thin sections, observed through polarising microscopes are normally used.

This course will comprise lectures, exercises with thin sections provided by the lecturers and also with material brought by the participants and visits to a thin section lab. Both analogic and digital polarising microscopes will be available, with a maximum of 2 participants per microscope, as well as facilities to work with them during extra time and to discuss the participants own thin sections with lecturers and colleagues. A certificate issued by the University of Lleida, under the auspices of the International Soil Science Society and the Institut Cartogràfic i Geològic de Catalunya will be handled to the participants who attend a minimum hours of lectures.

The contents of the course are:

- ? Principles of mineralogy and petrography, optical mineralogy
- ? Micromorphology sampling and making thin sections
- ? Guidelines for the description of thin sections of soils and regoliths, plant components.
- ? Micromorphology of soil materials and identification of soil formation processes: carbonate-, gypsum- , and salt affected soils, volcanic soils, clay accumulation, hydromorphic soils, tropical and highly weathered soils, glacial and periglacial processes, organic materials and faunal activity.
- ? Micromorphometry and image processing.
- ? Soil genesis and classification
- ? Geomorphology
- ? Paleosols
- ? Archaeology

An optional weekend excursion around the Tremp basin, to discuss on geology, Mediterranean soils and soil genesis is also offered.

The lecturers are experienced professors and researchers from the Universities of Lleida, Ghent, Barcelona, Stellenbosch and La Laguna.

## SCHEDULE

### Intensive Training Course on Soil Micromorphology

- Introduction, sampling techniques, thin section preparation
- Optical mineralogy, mineral identification in thin sections
- Thin section description: microstructure, components, pedofeatures
- Systematics of description of thin sections
- Argillic, spodic, oxic and vertic materials. Freeze-thaw and hydromorphic features
- Applications in geomorphology and paleopedology, faunal excrements
- Plant components
- Mediterranean and arid soils: carbonates and gypsum
- Archaeological applications
- Introduction to micromorphometry
- Humus layers and organic material

- **DATES AND HOURS**

30-sep 9:00-10:00 Reception of participants 10:00-11:00 Introduction and sampling techniques 11:30-12:30 Thin section preparation 12:30-13:00 Sampling techniques 15:00-17:00 Plant components 01-oct 9:00-11:00 Optical mineralogy 11:30-13:30 Optical mineralogy 15:00-17:00 Identification of minerals in thin sections 02-oct 9:00-9:30 Introduction to the use of the digital microscopes 9:30-11:00 Thin section description: 3D/2D, fabric concepts 11:30-13:30 Microstructure 15:00-17:00 Mineral and organic components 03-oct 9:00-11:00 Microstructure 11:30-13:30 Mineral weathering 15:00-17:00 Groundmass and b-fabric 04-oct 9:00-11:00 Pedofeatures 11:30-13:30 Pedofeatures 15:00-17:00 Exercises and questions about the Guidelines 07-oct 9:00-11:00 Systematics of description of thin sections 11:30-13:30 Argillic, Spodic, oxic and vertic materials 15:00-16:30 Freeze / thaw and hydromorphic features 16:30-18:00 Personal work 08-oct 9:00-11:00 Mediterranean and arid soils: carbonates 11:30-13:30 Personal work 15:00-16:30 Mediterranean and arid soils: gypsum 16:30-18:00 Personal work 09-oct 9:00-11:00 Applications in geomorphology and paleopedology 11:30-12:30 Personal work 12:30-13:30 Humus layers and organic material 15:00-16:00 Faunal excrements 16:00-18:00 Personal work 10-oct 9:00-11:00 Site formation processes 11:30-13:30 Personal work 15:00-16:30 Anthropogenic features 16:30-18:00 Personal work 11-oct 9:00-11:00 Introduction to micromorphometry 11:30-13:30 Evaluation

## LECTURERS

Canals Sabaté, Àngels  
 de Melo Marcelino, Vera  
 Mallol, Carolina  
 Poch Claret, Rosa M  
 Recasens, Inmaculada  
 Scarciglia, Fabio  
 Stoops, Georges  
 Tauler, Esperança

## OTHER INFORMATION

### ADMISSION REQUIREMENTS

The course is directed to students or graduates in agronomy, archeology, geology, environmental sciences, forestry, or any degree including soil science or geoarcheology in its curriculum.

### PROCEDURE SELECTION

The admission to the course will follow the order of inscription. In case of excess of demand, criteria as the interest of the applicant, the need for micromorphology training for his/her work will be taken into account. Special criteria will be applied for particular cases.

### TEACHING PERIOD

**Fecha inicio 30/09/19 - Fecha finalización 11/10/19**

Tremp. ICGC. CST Pirineus (Tremp) <http://www.ajuntamentdetremp.cat/en/coneixer-tremp/geologia/centre-de-suport-igc>

### DATES AND HOURS

The course will take place during the period 30 september - 11 october 2019

First week 9:00-13:30 and 15:00-17:00

Second week 9:00-13:30 and 15:00-18:00

### COMPLEMENTARY INFORMATION

[imatges](#)

### Enlace Web

<http://www.icgc.cat/>