

# 2n Intensive Training Course on Soil Micromorphology

**COURSE**

2017-2018

**PREINSCRIPTION**

27/03/17 fins al 22/09/17

**PERIOD OF MATRICULATION**

27/03/17 fins al 22/09/17

**TUITION**

400 €

**MAXIMUM OF STUDENTS**

30

**TYPE**

Curs d'especialització

**CATEGORY**

Agronomia, Forest, Medi Ambient

**CREDITS**

4.1 ECTS

**TRAINING MODALITY**

Presencial

**COORDINATION**

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**ORGANIZACIÓN**

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## PRESENTATION

The 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. There will be a maximum of 2 participants per microscope, as well as facilities to work with the microscopes 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 handed to the participants who attend a minimum hours of lectures.

The approximate programme of the course is the following:

- ? Principles of mineralogy and petrography, optical mineralogy
  - ? Micromorphology sampling and making thin sections
  - ? Guidelines for the description of thin sections of soils and regoliths
  - ? 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.
  - ? Micromorphometry and image processing.
  - ? Soil genesis and classification
  - ? Geomorphology
  - ? Paleosols
  - ? Archaeology
- ? Optional weekend excursion around the Tremp basin: Geology, Mediterranean soils, soil genesis, sampling techniques, archaeology (roman village of Isona).
- Personal work: Thin section study, exercises on thin section description

The lecturers are experienced professors and researchers from the Universities of Lleida, Ghent, Barcelona, Politécnica de Madrid 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

- Mediterranean and arid soils: salts
- Mediterranean and arid soils: carbonates and gypsum
- Archaeological applications
- Introduction to micromorphometry
- **DATES AND HOURS**

25-sep 9:00-10:00 Reception of participants 10:00-11:00 Introduction and sampling techniques 11:30-12:30 Thin section preparation 12:30-14:00 Sampling techniques: field demonstration 16:35 Bus from Lleida to Tremp (around 7?) 26-sep 9:00-11:00 Optical mineralogy 11:30-13:30 Optical mineralogy 15:00-17:00 Identification of minerals in thin sections 27-sep 9:00-11:00 Thin section description: 3D/2D, fabric concepts 11:30-13:30 Microstructure 15:00-17:00 Mineral and organic components 28-sep 9:00-11:00 Microstructure 11:30-13:30 Mineral weathering 15:00-17:00 Groundmass and b-fabric 29-sep 9:00-11:00 Pedofeatures 11:30-13:30 Pedofeatures 15:00-17:00 Exercises and questions about the Guidelines 30 sept Optional excursion 02-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 03-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 04-oct 9:00-11:00 Applications in geomorphology and paleopedology 11:30-13:30 Personal work 15:00-16:30 Mediterranean and arid soils: salts 16:30-18:00 Personal work 05-oct 9:00-11:00 Archaeological applications I 11:30-13:30 Personal work 15:00-16:30 Archaeological applications II 16:30-18:00 Personal work 06-oct 9:00-11:00 Introduction to micromorphometry 11:30-13:30 Personal work 15:00-16:30 Evaluation

## PROFESSORATE

Canals Sabaté, Àngels  
 de Melo Marcelino, Vera  
 Mallol, Carolina  
 Poch Claret, Rosa M  
 Rodríguez Ochoa, Rafael  
 Roquero, Elvira  
 Stoops, Georges

## 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 25/09/17 - Fecha finalización 06/10/17**

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 25 september - 6 october 2017

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

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