

UNIVERSITÀ DI PISA

DIPARTIMENTO DI RICERCA TRASLAZIONALE E DELLE NUOVE TECNOLOGIE IN MEDICINA
E CHIRURGIA

DIPARTIMENTO DI MEDICINA CLINICA E SPERIMENTALE

DIPARTIMENTO DI BIOLOGIA

CENTRO INTERDIPARTIMENTALE DI MICROSCOPIA ELETTRONICA CIME



Winter School (8th Edition)

Pisa 2024 19th - 27th January

FRIDAY 19/01/2024

ES1 classroom Via Volta 4Bis

9:00-9:45

Welcome to the course (P. Lenzi)

9:45-10:30

Lesson: A spotlight on volumeEM investigation in biological sample (P. Grianti)

10:30-11:00

Coffee break

11:00-12:00

Lesson: Introduction to transmission electron microscopy (TEM) (A. Falleni)

Break

14:00-16:00

Lesson: Introduction to scanning electron microscopy (SEM) and sample processing for SEM analysis (L. Modeo)

16:15-17:30

Lesson: Sample processing for TEM analysis (P. Lenzi)

SATURDAY 20/01/2024

Baccelli classroom Medicine School Via Roma 55

9:30-10:30

Lesson: Scanning microscopy and its application to study parasites (F. Macchioni)

Coffee break

10:45-12:00

Lesson: Sample processing for TEM: Advanced specimens preparation (P. Lenzi)

MONDAY 22/01/2024

8:15 -11:00

Lesson/Practice: Trimming of the blocks and cut of semithin sections with the ultramicrotome (A. Falleni, P. Lucchesi) ES1 classroom Via Volta 4Bis

11:00-11:30

Practice: Fixation of samples for TEM (A. Salvetti, P. Lucchesi, G. Gambino) Lab Via Volta 4

11:30-11:40

Coffee break

11:45-13:00

Lesson: Morphological and ultrastructural studies in different experimental conditions: personal research experience (P. Lenzi) ES1 classroom Via Volta 4 Bis

Break

14:00-17:30 **Practice:** Sample processing for TEM I (dehydration and infiltration with epoxy resin) (A. Salvetti, P. Lucchesi, G. Gambino) Lab Via Volta 4

TUESDAY 23/01/2024

9:00-9:30 **Practice:** Sample processing for TEM II (infiltration with 100% epoxy resin) (A. Salvetti, P. Lucchesi, G. Gambino) Lab Via Volta 4

9:30-10:30 **Practice:** Sample processing for SEM I (Fixation and dehydration) (L. Modeo) Lab Via Volta 4

10:30-11:00 Coffee break

11:00-13:00 **Practice:** Sample processing for SEM II (Critical Point/Covering) (L. Modeo) Lab Via Volta 4

Break

15:00-16:00 **Practice:** Sample preparation for TEM III (final embedding in epoxy resin) (A. Salvetti, G. Gambino) Lab Via Volta 4

WEDNESDAY 24/01/2024

9-10:30 **Lesson:** The role of electron microscopy in nanoparticles characterization and cellular uptake (G. Frenzilli) ES1 classroom Via Volta 4 Bis

10:30-11:00 Coffee break

11:00-13:00 **Practice:** Sample observation at scanning electron microscope (L. Modeo) Lab Via Volta 4

Break

15:00-16:00 **Lesson:** The contribution of TEM to solving issues in the reproductive biology of lower invertebrates (A. Falleni) ES1 classroom Via Volta 4 Bis

16:00-17:30 **Lesson:** "Role of Electron Microscopy in the Modern Diagnostic" (V. De Tata) ES1 classroom Via Volta 4Bis

THURSDAY 25/01/2024

9:00-11:00 **Lesson/Practice:** The electron beam and image formation in electron microscopy (P. Lucchesi) ES1 classroom Via Volta 4 Bis

11:00-11:15 Coffee break

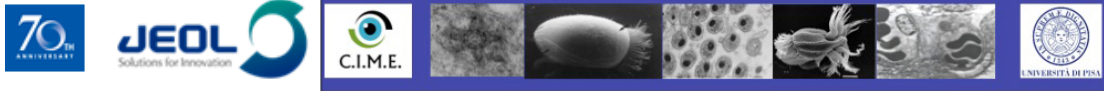
11:15-13:00	Lesson/Practice: Cut of ultrathin sections with the ultramicrotome equipped with a diamond knife and section collection on copper grids. Staining of ultrathin sections (A. Falleni, P. Lucchesi) ES1 Classroom, Lab Via Volta 4
	Break
15:00-17:00	Practice: Sample observation at transmission electron microscope (P. Lenzi, A. Salvetti) Lab Via Volta 4
17:00-17:30	Practice: Immunolabelling experiment I (P. Lenzi, M. Scotto) Lab Via Volta 4

FRIDAY 26/01/2024

9:30-10:30	Practice: Immunolabelling experiment II (P. Lenzi, M. Scotto) Lab Via Volta 4
10:30-11:00	Coffee break
11:00-13:00	Lesson: Dissecting cell-clearing systems in neurodegeneration through transmission electron microscopy. (P. Lenzi) ES1 classroom Via Volta 4 Bis
	Break
14.30-15.30	Lesson: The use of SEM in paleopathology: the museal experience (V. Giuffra, G. Natale, S. Bertozzi) ES1 classroom Via Volta 4 Bis.
	Farewell buffet
	Guided tour of the Anatomy museum " Filippo Civinini" (G. Natale, S. Bertozzi)

SATURDAY 27/01/2024

9:30-10:30	Final evaluation test Record of credits
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