

Summer school 2025

Tuesday 1/7	
9:30-10:00	Introduction to the course (G. Frenzilli)
10:00-10:30	Coffee break
10:30-11:30	Lesson: Introduction to in situ hybridization technique (A. Salvetti)
11:30-12:00	Practice: Correct use of basic laboratory equipment (P. Iacopetti)
12:00-12:30	Practice: Fixation of specimens for whole mount in situ hybridization (A. Salvetti; G. Gambino)
12:30-14:00	Lunch
14:00-14:30	Practice: Fixation of specimens for whole mount in situ hybridization (A. Salvetti; C. Bertini)
14:30-16:30	Lesson: Transmission electron microscopy in life science. Sample preparation for TEM (A. Falleni)
Wednesday 2/7	
9:15-10:00	Practice: Sample processing for TEM (fixation I) (A. Falleni; P. Iacopetti, P. Lucchesi)
10:00-11:00	Lesson: In situ hybridization protocol and applications (A. Salvetti)
11:00-11:30	Coffee break
11:30-12:45	Practice: Sample processing for TEM (fixation II) (A. Falleni; P. Iacopetti, P. Lucchesi)
12:45-14:00	Lunch
14:00-16:30	Practice: Sample processing for TEM (dehydration and infiltration with epoxy resin) (A. Falleni, P. Iacopetti, P. Lucchesi)
Thursday 3/7	

9:00-10:00	Practice: Sample processing for TEM (infiltration with 100% epoxy resin) (A. Falleni; P. Iacopetti, P. Lucchesi)
10:00-10:25	Coffe break
10:25-11:45	Lesson/practice: The electron beam and image formation in electron microscopy (P. Lucchesi)
11:45-13:00	Practice: Sample preparation for TEM (final embedding in epoxy resin) (A. Falleni; P. Iacopetti, P. Lucchesi)
13:00-14:00	Lunch
14:00-15:30	Lesson: Immunolabeling techniques in transmission electron microscopy (P. Lenzi)
16:00	Guided tour of the Anatomy museum "Filippo Civinini" (G. Natale)
FRIDAY 4/7	
9:00-10:45	Practice: whole mount in situ hybridization I (pre-hybridization treatments) (A. Salvetti, G. Gambino)
10:45-11:15	Coffee break
11:15-13:00	Practice: whole mount in situ hybridization I (pre-hybridization treatments) (A. Salvetti, C. Bertini)
13:00-14:00	Lunch
14:00-16:00	Practice: whole mount in situ hybridization II (hybridization) (A. Salvetti, C. Bertini)
MONDAY 7/7	
9:00-10:00	Lesson: Comet assay, principles and applications (G. Frenzilli)
10:00-11:30	Practice: Preparation of solutions and slides for Comet assay (G. Frenzilli; P. Guidi; M. Palumbo)
11:30-12:00	Coffee break
12:00-13:30	Practice: Whole mount in situ hybridization III (post-hybridization washes and immunodetection probes) (A. Salvetti, C. Bertini)
13:30-14:30	Lunch

14:30-17:30	Practice/Lesson: Trimming of the epoxy resin blocks, cut of semithin sections with the ultramicrotome equipped with a glass knife (A. Falleni; P. Lucchesi)
TUESDAY 8/7	
9:00-10:30	Practice: Whole mount in situ hybridization IV (colorimetric reaction) (A. Salvetti, G. Gambino)
10:30-11:00	Coffee break
11:00-13:00	Practice: Comet assay with human blood samples (G. Frenzilli; P. Guidi; M. Palumbo)
13:00-14:00	Lunch
14:00-16:00	Practice: Diffusion assay. Slide preparation and scoring (G. Frenzilli; P. Guidi; M. Palumbo)
16:00-17:00	Practice: Analysis of in situ hybridization experiments (A. Salvetti; C. Bertini)
WEDNESDAY 9/7	
9:00-11:00	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)
11:00-11:30	Coffee break
11:30-13:00	Practice: Electrophoresis for Comet assay (G. Frenzilli; P. Guidi; M. Palumbo)
13:00-14:00	Lunch
14:00-16:30	Practice: Microscope scoring of Comet assay (G. Frenzilli; P. Guidi; M. Palumbo)
THURSDAY 10/7	
9:00-10:00	Lesson: Micronucleus test and cytome assay, principles and applications (G. Frenzilli)
10:00-11:20	Lesson/Practice: Sample observation at transmission electron microscope (A. Falleni, P. Lucchesi) and ImageJ Fuji software introduction (P. Iacopetti)
11:20-11:35	Coffee break
11:35-13:30	Lesson/practice: Micronucleus test and cytome assay, principles and applications (G. Frenzilli; P. Guidi; M. Palumbo)

<i>13:30-14:30</i>	Lunch
<i>14:30-16:00</i>	Lesson/practise: Sample observation at transmission electron microscope (A. Falleni, P. Lucchesi)
FRIDAY 11/7	
<i>9:00-10:00</i>	Final evaluation test
<i>10:30-11:00</i>	Record of credits