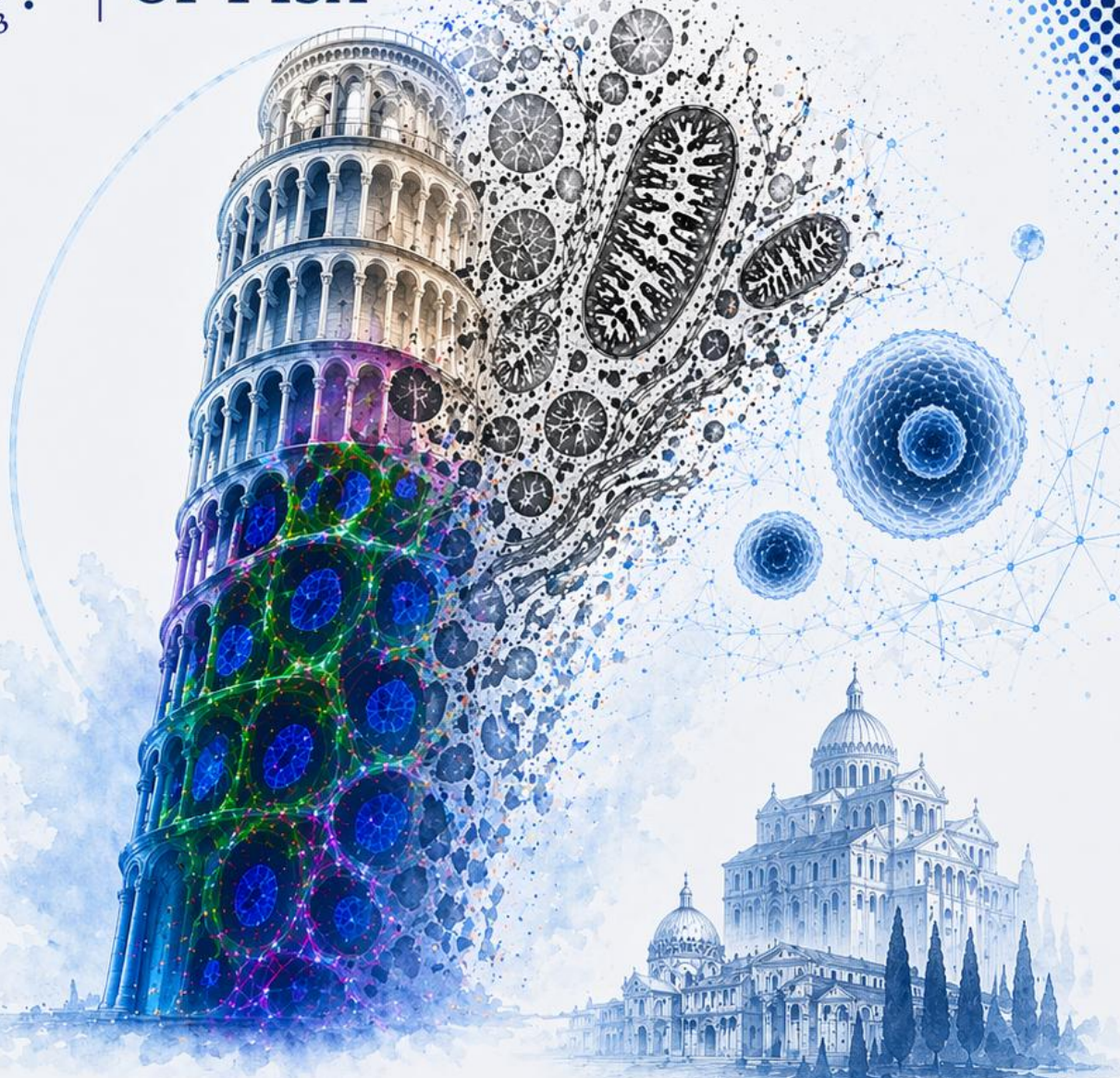




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# FROM TISSUES TO THE ORGANELLES

State of the Art in Morphological Studies  
by Optical and Transmission Electron Microscopy



## Friday, May 22<sup>nd</sup>, 2026

09:00–09:30 — Welcome to the course  
(*M. Ferrucci, F. Giorgi*)

09:30–10:45 — Introduction to the course: contents and perspectives  
(*M. Ferrucci*)

10:45–11:00 — Coffee break

11:00–12:30 — Technical procedures for sample processing and analysis in light microscopy  
(*M. Ferrucci*)

12:30–14:00 — Lunch

15:00–16:00 — Introduction to TEM  
(*P. Lenzi*)

16:15–17:30 — Sample processing for TEM  
(*P. Lenzi*)

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**Saturday, May 23<sup>rd</sup>, 2026**

09:30–11:00 — Technical procedures for sample staining in light microscopy  
(*M. Ferrucci*)

11:00–11:15 — Coffee break

11:15–12:45 — From past to present: the renaissance of classical histochemical methods in contemporary research (*G. Natale*)

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## Monday, May 25<sup>th</sup>, 2026

09:00–11:00 — Sample processing for TEM: Advances in specimens preparation. Morphological and ultrastructural studies in different experimental conditions: personal research experience

*(P. Lenzi)*

11:00–11:15 — Coffee break

11:15–13:30 — Practice: Sample processing for TEM: from fixation to final embedding in epoxy resin

*(M. Scotto, A. Giambelluca)*

13:30–14:30 — Lunch

14:30–16:00 — Practice: Trimming of the blocks and cut of semithin sections with the ultramicrotome

*(M. Scotto)*

16:00–17:30 — Neurodegeneration: the key role of morphological analysis

*(F. Fornai)*

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**Tuesday, May 26<sup>th</sup>, 2026**

09:00–10:15 — Technical procedures for cell culture preparation and their application in research studies  
(*G. Lazzeri*)

10:15–10:30 — Coffee break

10:30–13:00 — Practice: Cell culture preparation  
(*G. Lazzeri*)

13:00–14:30 — Lunch

14:30–16:00 — Biomaterials for advanced cell cultures  
(*S. Danti*)

16:00–17:30 — Practice: Histochemical and immunohistochemical staining in light microscopy  
(*M. Ferrucci, G. Lazzeri*)

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## Wednesday, May 27<sup>th</sup>, 2026

09:00–10:30 — Basics of optical microscopy and confocal microscopy (*F. Fuso*)

10:30–10:45 — Coffee break

10:45–12:00 — Kidney morphology and pathology of the glomerular filtration barrier (*G. N. Fanelli*)

12:00–13:15 — Storage diseases: morphology as a reflection of metabolism (*C. Scatena*)

13:15–14:30 — Lunch

14:30–15:30 — Practice: Cut of ultrathin sections with the ultramicrotome equipped with a diamond knife and section collection on copper grids. Staining of ultrathin sections (*M. Scotto*)

15:30–17:00 — Practice: Sample observation at transmission electron microscope” JEOL F200 E JEOL S100X (*P. Lenzi, M. Scotto*)

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**Thursday, May 28<sup>th</sup>, 2026**

09:00–11:00 — The electron beam and image formation in electron microscopy  
(*P. Lucchesi*)

11:00–11:15 — Coffee break

11:15–13:00 — Principles and examples of applications of Unbiased stereology  
(*A. Galgani*)

13:00–14:30 — Lunch

14:30–16:30 — Introduction to quantitative histological imaging analysis by Open-Source softwares  
(*A. Galgani, M. Scotto*)

16:30–17:30 — Applications of morphological analysis to neuroinflammation and BBB integrity analysis  
(*F.S. Giorgi*)

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## Friday, May 29<sup>th</sup>, 2026

09:00–11:00 — Practice: Analysis of samples by light microscopy  
(*M. Ferrucci, G. Lazzeri*)

11:00–11:15 — Coffee break

11:15–12:45 — Identifying motor neurons: markers in light  
microscopy (*M. Ferrucci*)

12:45–14:00 — Lunch

14:00–15:30 — Types and regional distribution of morphological  
alterations in experimental models of selected neurological  
diseases (*F.S. Giorgi*)

16:00–17:00 — Morphological approaches to paleopathology  
(*R. Gaeta, G. Natale*)

### Evening

Farewell buffet

A brief history (and potential visit) of the  
Anatomy museum "Filippo Civinini" specimens  
(*G. Natale*)

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**Saturday, May 30<sup>th</sup>, 2026**

09:30–10:30 — Final evaluation test and credits assignment

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## Organizers

Prof. Michela Ferrucci  
Prof. Filippo Sean Giorgi

## Lecturers

Serena Danti  
Giuseppe Nicolò Fanelli  
Francesco Fornai  
Francesco Fuso  
Raffaele Gaeta  
Alessandro Galgani  
Anita Giambelluca  
Gloria Lazzeri  
Paola Lenzi  
Paolo Lucchesi  
Gianfranco Natale  
Cristian Scatena  
Marco Scotto

## Course Information

<https://www.unipi.it/didattica/corsi/summer-schools/from-tissues-to-organelles/>

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