



CORSO DI DOTTORATO IN SCIENZE E TECNOLOGIE DELLA CHIMICA E DEI MATERIALI

SUMMARY OF THE EDUCATIONAL ACTIVITY

OPENING LECTURE (2025):

SPEAKER	UNIVERSITY/RESEARCH CENTER/COMPANY	TITLE/TOPIC	DATE	PROPOSER
Maurizio Prato	Centro de Investigación Cooperativa en Biomateriales (CIC) biomaGUNE, San Sebastián (E)	To be defined	February 14, 2025	L. Banfi

TYPE "A" COURSES – November 2024 – October 2025 (in update)

TEACHER	UNIVERSITY/RESEARCH CENTER/COMPANY	TITLE/TOPIC	DATE	PROPOSER
Andrea Dodero	Adolphe Merkle Institute, Fribourg (CH)	Block Copolymers: From Self-Assembly to Functional Materials	To be defined	D. Comoretto
Anja-Verena Mudring	Aarhus University (DK), University of Stockholm (S)	Liquid crystals, from synthesis to applications	To be defined	P. Manfrinetti
Nunzio Tuccitto	Università di Catania	Molecular Communication	To be defined	D. Peddis
Ester Canepa	Centre for BioNano Interactions, University College Dublin (IR)	Bridging biological and synthetic approaches in advancing RNA delivery design	To be defined	A. Relini
Marco Ciufolini	University of British Columbia, Vancouver (CA)	The Total Synthesis of Natural Products as an Engine of Progress	November 27 e 28, 2024	R. Riva
Marco Ranocchiari	Paul Scherrer Institut, Villigen (CH)	Synthesis, structure, and applications of metal-organic frameworks	To be defined	R. Riva

Note: the list of these courses includes only those already approved by the Doctoral Board and is periodically updated.

TYPE "B" COURSES – 2025

COURSE	CFU	TEACHERS	ENGLISH
Crystalline solids: electronic correlations, instabilities and order	2	S. Artyukhin (IIT)	YES
Design and synthesis of protein-kinase inhibitors as anticancer agents	2	S. Schenone (UniGe), M. Tonelli (UniGe)	YES
DNA nanotechnology	2	D. Garoli (IIT)	YES
Drug discovery: an introduction to the process leading to new small-molecule drugs	2	A. Armirotti (IIT), T. Bandiera (IIT), F. Bertozzi (IIT), M. De Vivo (IIT), S. Girotto (IIT), B. Grimaldi (IIT), D. Russo (IIT), R. Scarpelli (IIT), M. Veronesi (IIT)	YES
Elementary electronic structure of solids	3	L. Manna (IIT)	YES
INN and IUPAC nomenclature of organic drugs	2	G. Grossi (UniGe)	On request
Introduction to nanophotonics and nanofabrication	3	M. C. Giordano (UniGe)	YES
Molecular markers of food quality and genuineness	2	R. Boggia (UniGe), F. Turrini (UniGe)	On request
Multivariate analysis of chemical data	3	M. Casale (UniGe), C. Malegori (UniGe), P. Oliveri (UniGe)	On request
Patent and bibliographic databases searching in medicinal chemistry	2	C. Brullo (UniGe), A. Spallarossa (UniGe)	YES
Perspectives on bioinorganic chemistry	2	S. De Negri (UniGe)	YES
Polymeric nanocomposites	2	O. Monticelli (UniGe)	YES
Process intensification	3	A. Servida (UniGe)	YES
Science at Large Scale Facilities: Neutron and Synchrotron Light sources	2	A. Martinelli (CNR-SPIN)	YES
Single crystal diffraction at work	2	P. Solokha (UniGe)	YES
The Rietveld method: fundamentals and applications	2	C. Artini (UniGe)	On request
Water soluble nanoparticles	2	T. Pellegrino (IIT)	YES

TYPE "B" COURSES – 2026 (to be confirmed)

COURSE	CFU	TEACHERS	ENGLISH
Aspects of soft matter	2	A. Relini (UniGe)	On request
Atomic force microscopy, theory and practice	2	M. Salerno (UniGe)	YES
Catalysts and adsorbents	2.5	E. Finocchio (UniGe), G. Garbarino (UniGe)	YES
Design of magnetic nano-architecture	2	D. Peddis (UniGe)	On request
Experimental design	2	F. Ardini (UniGe), B. Benedetti (UniGe)	YES
Fundamentals of scanning electron microscopy	2	P. Riani (UniGe)	YES
Fundamentals of spectral imaging	2	C. Malegori (UniGe), P. Oliveri (UniGe)	YES
Innovative pharmaceutical dosage forms: preparation and control methods	2	S. Baldassari (UniGe), G. Caviglioli (UniGe), G. Zuccari (UniGe), E. Russo (UniGe)	YES
Instrumental techniques for trace elements determination in pharmaceuticals, inorganic nanomaterials, food products, environmental samples, and <i>in vivo</i> biokinetics evaluation	2	G. Drava (UniGe), V. Voliani (UniGe)	On request
Introduction to functional ceramic materials. Structure, properties, preparation and applications	2	V. Buscaglia (CNR)	YES
Introduction to polymer physical chemistry and characterisation techniques	2	N. Tirelli (IIT)	YES
Mathematical methods for chemistry	2	M. Ottonelli (UniGe)	Slides in English
Optical properties of materials	2	F. Bisio (UniGe), M. Canepa (UniGe), M. Magnozzi (UniGe)	YES
Organic materials for photonics	2	D. Comoretto (UniGe)	YES
Organic photochemistry	2	A. Basso (UniGe)	YES
Principal plants used in phytocosmetics and their constituents	2	A. Bisio (UniGe)	YES
Surface science	3	L. Vattuone (UniGe)	YES
The ideal synthesis nowadays: lessons from the synthetic chemist Nature	2	C. Lambruschini (UniGe), L. Moni (UniGe)	YES
Theory of crystalline solids	3	S. Artyukhin (IIT)	YES

TYPE "F" COURSES – (2025 and 2026). These courses are taken during the first year

COURSE	CFU	TEACHERS	ENGLISH
Materials characterization 1	1	M. Lorenzoni (IIT), L. Pasquale (IIT), S. Dante (IIT), L. Ceseracciu (IIT)	YES
Materials characterization 2	1	M. Prato (IIT), L. Pasquale (IIT), S. Dante (IIT), Dr. Luca Goldoni (IIT)	YES
Nanomaterials and nano heterostructures: colloidal synthesis and chemical transformations	1	L. De Trizio (IIT)	YES
Advanced electron microscopy for materials science	1	R. Brescia (IIT), G. Divitini (IIT), I. Ivanov (IIT)	YES