

Teaching Plan 41°Cycle a.y. 2025/2026

Course	Teacher(s)	SSD	hrs	credits	Educational form	Type of activity	Chosen/ Mandatory
Science: Observation and Prejudice	Eduardo Garzanti	GEO/02	8	1	Lecture	Intercurricular	Chosen activity
Communication of Climate Change	Claudia Pasquero	GEO/12	8	1	Lecture	Intercurricular	Chosen activity
The Climatic Role of Atmospheric Aerosol in the Arctic	Luca Ferrero	CHIM/12	8	1	Lecture	Intercurricular	Chosen activity
Ice Core Science	Barbara Delmonte	GEO/04	8	1	Lecture	Intercurricular	Chosen activity
Advanced Techniques for Sample Preparation	Veronica Termopoli, Fabio Gosetti	CHIM/01	16	2	Lecture	Intercurricular	Chosen activity
Scanning and Transmission Electron Microscopy, Principles and Applications	Giancarlo Capitani, Paride Mantecca, Giovanni Maria Vanacore	GEO/06	28	3	Lecture & laboratory training	Intercurricular	Chosen activity
Raman Spectroscopy: A Flexible Tool for an Integrated Research Approach	Sergio Andò, Maria Luce Frezzotti + didattica seminariale	GEO/02	16	2	Lecture	Intercurricular	Chosen activity
Scanning Microscopy and Spectroscopy: Principles, Applications, Image Handling	Marcello Campione, Valerio Cerantola	FIS/01	20	2	Laboratory training	Intercurricular	Chosen activity

Sustainable Chemical Processing Technologies	Heiko Lange, Luca Zoia	CHIM/06	16	2	Lecture	Intercurricular	Chosen activity
New Lignin-Based Sustainable Materials: Science and Technological Aspects	Luca Zoia, Ruggero Barni	CHIM/06	8	1	Lecture	Intercurricular	Chosen activity
Carbon and noble gases systematics in the Earth's interior	Andrea Luca Rizzo	GEO/08	8	1	Lecture	Intercurricular	Chosen activity
Ecological Baseline and Conservation Paleobiology	Daniela Basso, Valentina Bracchi	GEO/01	16	2	Lecture	Intercurricular	Chosen activity
Machine Learning for Multivariate Data Analysis	Davide Ballabio	CHIM/01	20	2	Lecture & laboratory training	Intercurricular	Chosen activity
Open-Source Software for Spatial Data Analysis	Micol Rossini	GEO/04	16	2	Lecture	Intercurricular	Chosen activity
Spatial Variability of Environmental Characteristics and Mapping Methodologies	Chiara Ferrè	AGR/14	16	2	Lecture	Intercurricular	Chosen activity
Time Series Analysis of Environmental Data	Tullia Bonomi + didattica seminariale	GEO/05	20	2	Lecture & laboratory training	Intercurricular	Chosen activity
UAV/ROV and Immersive Virtual Reality for Research in Earth Sciences	Fabio Luca Bonali, Luca Fallati	GEO/03	18	2	Lecture & Field activity	Intercurricular	Chosen activity

NMR spectroscopy applications to ligand-receptor studies	Cristina Airoidi	CHIM/06	20	2	Lecture & laboratory training	Chemistry Curricular	Chosen activity
Computational approaches for Structure-Based Drug Design	Stefano Motta	CHIM/02	16	2	Lecture	Chemistry Curricular	Chosen activity
Crystallography and Laboratory of X-ray powder diffraction	Chiara Ferrara, Riccardo Ruffo	CHIM/03	20	2	Lecture & laboratory training	Chemistry Curricular	Chosen activity
Introduction to photochemistry	Luca Bertini, Claudio Greco, Antonio Papagni	CHIM/03	24	3	Lecture	Chemistry Curricular	Chosen activity
Enhancement of Fragile Cultural Heritage	Ezio Bolzacchini, Chiara Rostagno, Luca Ferrero	CHIM/12	20	2	Lecture & laboratory training	Chemistry Curricular	Chosen activity
Detrital geochronology and thermochronology	Marco G. Malusà + didattica seminariale	GEO/02	16	2	Lecture	Geology Curricular	Chosen activity
Provenance analysis: how to integrate single grain and bulk techniques	Sergio Andò, Alberto Resentini	GEO/02	16	2	Lecture	Geology Curricular	Chosen activity
Monte Carlo Approach to Geophysical Inverse Problem: An Introduction	Nicola Piana Agostinetti	GEO/11	20	2	Lecture & Laboratory training	Geology Curricular	Chosen activity

Introduction to geodynamic and landscape evolution numerical modeling	Pietro Sternai	GEO/03	20	2	Lecture, computer work	Geology Curricular	Chosen activity
Advanced Numerical Modelling Towards Digital Twins for Geomaterials	Giovanni Battista Crosta, Riccardo Castellanza, Bianca Di Blasio	GEO/03	36	3	Lecture	Geology Curricular	Chosen activity
Advanced Field and Remote- Sensed Characterization of Rock Fractures in Outcrops	Federico Agliardi, Andrea Bistacchi	GEO/05	18	2	Lecture & Laboratory training	Geology Curricular	Chosen activity
Non-Animal Testing and Research: Ethical Issues and Scientific Applications	Chiara Urani	BIO/06	8	1	Lecture	Environment Curricular	Chosen activity
Next Generation Sequencing and Bioinformatic Tools for Ecological Studies	Andrea Franzetti, Isabella Gandolfi	BIO/19	20	2	Lecture & Laboratory training	Environment Curricular	Chosen activity
Ecosystem Services	Emilio Padoa-Schioppa + didattica seminariale	BIO/07	16	2	Lecture	Environment Curricular	Chosen activity
Isotopes as Environmental Tracers	Barbara Leoni, Marco Rotiroti	BIO/07	20	2	Lecture & laboratory training	Environment Curricular	Chosen activity
Native Plant Assemblages to Restore Degraded Lands	Sandra Citterio, Rodolfo Gentili	BIO/01	8	1	Lecture	Environment Curricular	Chosen activity
Acoustics Applied to the Environment: Soundscape as Environmental Quality Index	Giovanni Zambon	FIS/07	12	1	Laboratory training	Environment Curricular	Chosen activity
TOT. 34			560	62			

Other Activities

Course	Type of activity	SSD	hrs	credits	Educational form		
"Non Solo Ambiente ma Dialoghi di Scienza"	Seminari didattici obbligatori durante i quali i dottorandi del secondo anno presentano argomenti scientifici agli studenti della scuola secondaria di secondo grado. L'attività è finalizzata a favorire il confronto interdisciplinare tra i dottorandi e a esercitare la capacità di esporre temi scientifici ad un pubblico di non esperti (secondo anno di dottorato: 12 ore)		12		Seminar		
Giornata del Dottorato (PhD Day SCGA)	Evento a cadenza annuale organizzato dai dottorandi in collaborazione con la Giunta di Dottorato, che prevede seminari con relatori di calibro internazionale, tra cui i membri stranieri del Collegio dei Docenti, sessioni poster e presentazioni orali a cura dei dottorandi (8 ore).		8				