



**Doctoral Course in Civil, Environmental and Mechanical Engineering  
Manifesto of studies a.y. 2023- 2024**

Period	Lecturers	Course	Location	Hours	Credits
November 6 -16, 2023	Anna M. Pandolfi	An introduction to nonlinear solid mechanics	Politecnico di Milano and online	28	5
December 2023 - January 2024	Giuseppe Formetta, Riccardo Rigon	GEOframe Winter School GWS2023	DICAM	64	8
15-26 January 2024	Vincenzo Casulli	Winter School part I - Advanced numerical methods for free-surface hydrodynamics	DICAM	30	4
January 29 – February 2, 2024	Michael Dumbser, Laura Del Rio	Winter School part II - Advanced numerical methods for hyperbolic equations	DICAM	40	5
January 29 - February 9, 2024 (to be confirmed)	Henk Dijkstra	Tipping Behavior in the Climate System	DICAM	18	2
After February 2024	Luca Deseri	Multiscale nonlinear continuum mechanics of solids undergoing disarrangements (the course held by prof. Pandolfi is a prerequisite for this class)	online	20	4
March 2024	Alberto Valli, Ana Maria Alonso Rodriguez	Mathematical Methods for Engineering	DICAM	50	6



11-15 March 2024	Paolo Zatelli, Alfonso Vitti, Marco Ciolli	Environmental data management and analysis with GIS	DICAM	40	5
4-8 March 2024	Maria F. Pantano	Microelectromechanical systems: from established engineering applications to research platforms	DICAM	20	2,5
April - May 2024	Paolo Scardi	X-ray Diffraction applied to the study of polycrystalline materials: theory and practice	DICAM	36	4,5
April 2024	Andrea Pompigna (Engineer, Assistant Freelancer)	Models and Applications for Transportation Systems Analysis	DICAM	18	2
second half of April 2024	Rossano Albatici, Simone Torresin	Soundscape in the built environment: theory, methods, and application to the field of building ventilation	DICAM	16	2
3 editions February 2024, May 2024, summer 2024	HIT - Hub Innovazione Trentino - Fondazione	Research to business: a technology transfer approach	DICAM	24	3
8 - 10 May 2024	O. S. Bursi, F. Dal Corso, V. Dal Poggetto A. Massa e G. Oliveri	Waves in metamaterials and periodic structures	DICAM	16	2
May 2024	Gianluca Maracchini	Life Cycle Assessment for the built environment: theory, methods, and applications	DICAM	16	2
10-14 June 2024 (to be confirmed)	Glenn Tootle (University of Alabama), Giuseppe Formetta	Hydro Climatology and Paleohydrology	DICAM	30	4



June 2024	Marco Tubino, Francesco Dal Corso, Niccolò Ragno	Perturbation methods: theory and applications (River Morphodynamics and Structural Mechanics)	DICAM	32	4
1 or 2 weeks in June 2024	Guido Zolezzi, Walter Bertoldi, David Vetsch (ETH Zurich), Annunziato Siviglia	Integrated river morphodynamics	DICAM	32 or 64	4 or 8
beginning of June 2024 (to be confirmed)	Marco Toffolon, Dino Zardi, Luigi Fraccarollo Sebastiano Piccolroaz, Lorenzo Giovannini, Nadia Vendrame, Dhaouadi Firas	Turbulence in environmental flows (course offered for the LM Ingegneria per l'Ambiente e il Territorio)	DICAM	60	3
22-26 July 2024	Alfonso Vitti	Advanced geomatics and Earth observation for environment	DICAM	20	2,5
1-12 July 2024	Simona Bordoni, Lorenzo Giovannini	Numerical Modelling of Weather and Climate	DICAM	36	4,5
July 2024	Sara Favargiotti, Camilla Pezzica (Cardiff University, UK), Giovanna A. Massari, Chiara Chioni	Collaborative approaches for the digital documentation, representation and design of territories and landscapes	DICAM	16	2
Summer or autumn 2024	Paolo Scardi	Molecular Dynamics: a primer with elements of statistical mechanics	DICAM	16	2
to be defined	Marco Salucci, Paolo Rocca	Artificial intelligence and Machine Learning Methods for Environmental Applications (course offered for the LM Ingegneria per l'Ambiente e il Territorio)	DICAM	60	3



to be defined	to be defined	Ground Penetrating Radar for Civil and Environmental Inspections	DICAM	32	4
to be defined	to be defined	Machine Learning & AI Methods - Theory, techniques, and Advanced Engineering Applications	DICAM	32	4
to be defined	to be defined	Quantum Electromagnetics	DICAM	32	4
to be defined	to be defined	Surface Electromagnetics for Wireless Communications and Sensing	DICAM	32	4
2 -13 September 2024	Sara Favargiotti, Giuseppe Formetta, Lorenzo Giovannini, Alessandra Marzadri	On water. Designing climate-responsive landscape and infrastructure	DICAM	32	4

The didactic offer of the Honours Programmes has to be defined yet, therefore also the PhD Courses that will be part of the HP will be confirmed later on. All courses of the Honour Programme "Modelling & Simulation" will be part of the educational offer a.y. 2023-2024, if confirmed.