

DOCTORAL COURSES OFFERED BY THE PhD@DICAM PROGRAMME IN THE 2026 SPRING TERM

Course title	Hours	Doctoral Credits	Course description	Teachers and period
<i>CFD modeling for process industry</i>	15	3	<i>The course aims at providing students with practical skills for application of CFD modeling in the context of research and development activities in the field process industry. The course recalls the basics of the finite volume approach, discretization schemes and computational grid, and expands to the aspects of turbulence modelling, correct definition of boundary conditions, grid independence, pre and post processing, reactive flows and User Defined Functions. It will include the presentation of relevant case studies.</i>	ICHI-01/C [ING-IND/26] Reference person: Giordano Scarponi Period: February 2026 28/01 - 14:00-17:00 lab. LADI (plesso Terracini) 30/01 - 14:00-17:00 lab. LADI (plesso Terracini) 02/02 - 14:00-17:00 lab. LADI (plesso Terracini) 04/02 - 14:00-17:00 lab. LADI (plesso Terracini) 06/02 - 14:00-17:00 lab. LADI (plesso Terracini)
<i>Advanced quantitative risk assessment for process industry</i>	15	3	<i>The course aims at introducing the main approaches and methods applicable to advanced studies on the topic of quantitative risk assessment for process industry. The lessons will focus on frontier issues like dynamic risk assessment, risk from natural hazard triggering industrial accidents (NaTech), security risk assessment, risk recomposition techniques, etc. Lessons include practice in modeling, with use of different approaches and software, and presentation of case studies of consequence simulation and risk assessment.</i>	ICHI-02/A [ING-IND/25] Reference person: Valerio Cozzani (Guest Teachers: Federica Ricci, Matteo Iaiani) Period: March 2026 Thursday 5/3, 14.30 - 18.45 (F. Ricci) - sala Consiglio, 1-030 (plesso Terracini) Thursday 12/3, 14.30 - 18.45 (F. Ricci) - sala Consiglio, 1-030 (plesso Terracini) Thursday 19/3, 14.30 - 18.45 (M. Iaiani) - sala Consiglio, 1-030 (plesso Terracini)

				Thursday 26/3, 14.30 - 18.45 (M. Iaiani) - sala Consiglio, 1-030 (plesso Terracini)
<i>Engineering for green energy transition: methods and tools</i>	15	3	<i>The course aims at introducing key methods and tools applicable to engineering activities in the field of green energy transition and circular economy. The lessons will start from the presentation of life cycle thinking and sustainability perspective applied to system analysis and then focus on the indicators used to assess environmental sustainability, the decarbonization of the energy and industrial systems, the implementation of sustainability in the design of new processes, the sustainability and safety implications of the use of innovative fuels in the sustainable energy perspective. Lessons will also introduce case studies and examples of application.</i>	<p>ICHI-02/A [ING-IND/25]</p> <p>Reference person:</p> <p>Alessandro Dal Pozzo</p> <p>Alessandro Tugnoli</p> <p>Ernesto Salzano</p> <p>Period:</p> <p>February 2026</p> <p>Fri 06/02 9.30 - 12.30 Life cycle thinking in system analysis (A. Dal Pozzo) – lab. LADI (plesso Terracini)</p> <p>Mon 09/02 9.30 - 12.30 Indicators for environmental sustainability (A. Dal Pozzo) – lab. LADI (plesso Terracini)</p> <p>Tue 10/02 9.30 - 12.30 Practical case study of process-based LCA (A. Dal Pozzo) – lab. LADI (plesso Terracini)</p> <p>Wed 11/02 9.30 - 12.30 Innovative fuels for the sustainable energy production (E. Salzano) – sala Consiglio, 1-030 (plesso Terracini)</p> <p>Thu 12/02 9.30 - 12.30 Implementing sustainability in the design of new processes (A. Tugnoli) – sala Consiglio, 1-030 (plesso Terracini)</p>

<p>Road infrastructure for sustainable mobility</p>	<p>15</p>	<p>3</p>	<p><i>The course aims at introducing key elements of infrastructure, focusing on traffic calming techniques, design and materials for cycling paths, and technologies and materials to lower the environmental impact of pavements in urban area.</i></p> <p><i>Lessons will also introduce case studies and examples of application.</i></p>	<p>CEAR.03/A [ICAR/04]</p> <p>Reference person:</p> <p>Claudio Lantieri</p> <p>Margherita Pazzini</p> <p>Period:</p> <p>March-April 2026</p> <p>24 March 2026 PIT Lab (Imola) 09-13 (4h) Road safety advances from a safe system approach prospective (Guest Teacher prof. Paolo Intini UNISAL)</p> <p>26 March 2026 PIT Lab (Imola) 09-12 (3h) Assessing Human Performance in driving through innovative technologies</p> <p>31 March 2026 PIT Lab (Imola) 09-13 (4h) Driving and Bicycle Simulator Studies</p> <p>2 April 2026 PIT Lab (Imola) 09-13 (4h) Virtual Realty for road safety</p>
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