



PhD newsletter

Jun 26

Seminars and workshops

ENTROPY, ZENTROPY AND ZENN

PROF. ZI-KUI LIU, PENNSYLVANIA STATE UNIVERSITY (PENN STATE)

This course introduces zentropy theory and its AI extension, ZENN, showing how entropy-based models can predict complex system behavior and improve image and text classification.

Particular attention is given to accuracy, robustness, interpretability, and AI safety, highlighting the advantages of zentropy-based approaches over conventional neural network architectures.

19 June, 2026 – 3pm, Sala Consiglio B23



On Complexity, Architecture and the Built Environment. Towards a Complexity-centred Approach in Design Research and Practice

The seminar explores how complex thinking can inform design research and practices addressing sustainability, wellbeing, inclusion, and the critical use of new technologies.


3 June, 2026 and July 7, 2028



News

PRODUCTS AND SERVICES AT SPECIAL CONDITIONS

New agreement with Autolinee Federico

You will get a 15% discount on tickets for bus routes within the national territory 





POLITECNICO
MILANO 1863

Milano Film Fest

You will get discount on tickets for films on the theme "Technology for Humanity" from the "Scintille" program

June - Thursday 4, Friday 5 and Monday 8 at 9:30 PM 

You can find the full list of product and services at special conditions here  

Starting Courses – DOCTORAL PROGRAMMES

PHD IN MECHANICAL ENGINEERING

PROF. ROVEDA LORIS

AI APPLICATIONS TO INDUSTRIAL ROBOTICS

The course introduces key AI methodologies for intelligent robotics, including Bayesian optimization, preference-based optimization, reinforcement learning, LLMs, and VLAs, with practical applications and Python assignments.

The final evaluation consists of a short project based on the student's research topic or on a robotics problem proposed during the course.

From June 15, 2026



PROF. CHELI FEDERICO, PROF. MASARATI PIERANGELO

MULTIBODY SYSTEM DYNAMICS

Present the foundations and the state of the art in research on multibody dynamics in the frame of computational mechanics, and applications to various fields of engineering. Provide understanding of the complexity of the problem and capability to choose the right tools.

Multibody system dynamics: nonlinear equations of motion of constrained systems. Kinematics and dynamics of points and rigid bodies. Analytical dynamics. Kinematic constraints. Integration of differential-algebraic equations. Rotation parametrization. Dynamics of deformable systems. Vehicle dynamics. Fluid-structure interaction.

From June 8, 2026



Starting Courses – PHD SCHOOL

PROF. SANTAMBROGIO MARCO DOMENICO

CREATIVITY, SCIENCE AND INNOVATION: THE MULTIMAGINEERING COURSE

Within this course, students are immersed in an environment designed to transform creativity into impact. They engage with motivating challenges, real-world problems, and hands-on experiences that mirror the uncertainty, responsibility, and excitement typical of entrepreneurial journeys. Creativity is not treated as a talent reserved for a few; it is a discipline that can be trained, cultivated, and continuously strengthened. By being exposed to the right ecosystem of mentors, peers, companies, and opportunities, students learn how to move beyond their comfort zones and discover that innovation happens where curiosity meets execution. Many technically brilliant students hesitate when asked to step into the spotlight, pitch an idea, or take ownership of a bold vision. Too often, young people are told they are not yet ready for complex responsibility. This course challenges that narrative. We believe students are ready, provided they are equipped with the right mindset, tools, and support. Through this course they learn to transform uncertainty into strategy, pressure into motivation, and failure into data. Trying, iterating, and sometimes failing are not side effects of innovation; they are its engine. Without experimentation there is no learning, and without learning there is no breakthrough. Through projects, team activities, industry-inspired challenges, and continuous exposure to stakeholders from the innovation ecosystem, participants develop not only solutions but also self-awareness. They gain confidence in their capabilities, understand how value is created, and learn how to communicate visions, build prototypes, validate assumptions, and navigate complexity. The ultimate objective is to empower a new generation of engineers and researchers who are not only able to invent, but are also ready to lead, build, and bring ideas into the world.

From June 8 to July 3, 2026



PROF. CHIFFI DANIELE, PROF. JANDA PAVEL, PROF. ZANOTTI GIACOMO
PHILOSOPHY OF RISK

This course offers a comprehensive exploration of the philosophy of risk, focusing on the social and humanistic dimensions of natural, technological and medical risks. It will critically discuss key definitions, the precautionary principle, ethical considerations, and decision-making strategies in risk assessment and management. The programme is divided into two modules: the first addresses theoretical foundations, including the conceptualization of risk and probability, while the second applies philosophical perspectives to natural, technological, and biomedical risks. Through this approach, the course aims to equip students with a critical understanding of the normative, ethical and epistemological aspects of risk in contemporary society.

From 3 to 9 June, 2026



PROF. CANALI STEFANO, PROF. ZANOTTI GIACOMO
PHILOSOPHY OF SCIENCE AND TECHNOLOGY

What is philosophy of science and why is it relevant to current science and technology? This course will present and review foundational topics and recent results from contemporary philosophy of science and apply them to current cases and issues in scientific research and technological practice.

From 16 to 25 June, 2026



PROF. ARMONDI SIMONETTA, PROF. PESSINA GLORIA
STRENGTHENING CRITICAL SPATIAL THINKING

The course opens up a set of questions aiming at strengthening critical spatial thinking, as a paramount tool in a polytechnic school. Pivotal to our fields is a capacity to think and engage spatially. The course privileges critical spatial theory approaches space as a medium of power where relations, conflicts, and exchanges occur, particularly thinking about the taken-for-granted category of social-environmental extreme events.

From 23 to 25 June, 2026



PROF. VOLONTE' PAOLO GAETANO, PROF. IAPAULO FABIO, PROF. MUSMECI MARIANNA
TECHNOLOGY AND INEQUALITY

How do digital technologies shape society and justice? This course dives into the complex relationship between technology, inequality, and power, exploring how digital systems impact exclusion, labour, and spatial justice. We'll tackle the politics of algorithms, the environmental and social consequences of digital innovation, and how socio-technical imaginaries shape competing visions of our collective future. Through an interdisciplinary lens, students will critically analyse these issues, focusing on race, gender, class, and disability, to uncover the real-world impacts of digital technology.

From June 22 to July 3, 2026



