Master of Science in Mechanical Engineering

Defence and Security



Contacts





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Track description

In a world governed by uncertainty and precariousness, public and individual defence and security play an increasingly important role in the surveillance and protection of citizens, major events and critical infrastructures in Italy. To intervene effectively and to successfully resolve potential critical situations, Defence and Security engineers must have specific training. Thus, consolidated technical-engineering skills are combined with nontraditional topics, such as ballistics, geopolitics, cybersecurity, and risk management. Teaching courses are mainly applicative and immediately usable on the market.

Skills

Students will learn how to:

- understand the complexity of geopolitical interactions
- model high-speed impacts of metal and composite structures
- trace the causes of ballistic impacts and explosives
- implement surveillance systems based on drones and unmanned vehicles
- carry out technology risk analyses and evaluate the resilience of critical infrastructures
- master computer security and cryptography



CC3: Core Courses

Course Title

Energy Conversion Technologies

Dynamics of Mechanical Systems

Machine Design

Advanced Manufacturing Processes B

Advanced Project Management

Advanced Materials for Industrial Engineering

YEAR	SEM	ECTS	ECTS GROUP
1	2	5	5
1	1	5	5
1	2	5	5
1	1	5	5
1	2	10	10
1	1	10	10

CC3: Track Specific Courses

Course Title

Fondamenti di balistica ed esplosivistica A

Technologies for Information Systems

Digital Technology

Software Engineering 2

Unmanned Vehicles

Impact Engineering

Design and Analysis of Experiments

Elective courses

(Technology Risk Governance, Resilience of Critical Infrastructures, Geopolitica per la Difesa e la Sicurezza, Failure Analysis, Sicure Industriale e Ingegneria Forense, Computer Security, Cryptography and Architectures for Computer Security, Digital Forensics and Offensive and Defensive Cybersecurity, ...)

Lab course

(Balistica forense, Artificial Intelligence for Security)

	YEAR	SEM	ECTS	ECTS GROUP
	1	2	10	10
	1	2	5	5
	1	2	5	
	1	1	5	5
	2	1	10	
	2	2	10	10
	2	2	10	
ezza Cybercrime,	2	1-2	5	20
	2	1	5	5

CC3: Master's Thesis

Impatti balistici su piastre alluminio Modelling of Multi-Layer Protection



Applicazioni dei droni per la sorveglianza