

COURSE CODE	COURSE TITLE	INSTRUCTOR	CFU/HOURS
<b>Transversal Skills; Mathematical and Statistical Methods</b>			
TSK 1	Entrepreneurship and Startup	M. Muffatto, F. Ferrati	5 CFU (21 hours)
TSK 2	Python programming for Scientific Engineering	S. Tortora	4 CFU (20 hours)
TSK 3	Data Visualization	M. Ceccarello	4 CFU (20 hours)
TSK 4	Geopolitics of ICT in an unpredictably changing world	A. Paccagnella, David Burigana	4 CFU (15+5 hours)
IE_MSM 1	Statistics for Engineers	L. Salmaso, R. Arboretti, M. Disegna	7 CFU (40 hours)
IE_MSM 2	Heuristics for Mathematical Optimization	D. Salvagnin	4 CFU (20 hours)
<b>Computer Science</b>			
IE_CSC 1	Bayesian Machine Learning	G. M. Di Nunzio	4 CFU (20 hours)
IE_CSC 2	Advanced scientific and parallel programming with HPC infrastructures	TBD	4 CFU (20 hours)
IE_CSC 3	Methods for Scalable Graph Analytics	S. Marchesin, L. Pellegrina	2 + 2CFU (20 hours)
<b>Applied Optics</b>			
IE_OPT 1	Quantum Communication: methods and implementations	M. Avesani, F. Vedovato	3+1 CFU (15 + 5) hours
<b>Control Theory and Applications</b>			
IE_AUT 1	Elements of Deep Learning	G. A. Susto	5 CFU (24 hours)
IE_AUT 2	Applied Functional Analysis and Machine Learning :from regularization to deep networks	G. Pillonetto	5 CFU (24 hours)
IE_AUT 3	Applied Linear Algebra	L. Schenato	4 CFU (20 hours)
IE_AUT 4	Analysis and Control of Multi-agent Systems	TBD	
IE_AUT 5	Quantum Probability, Information and Dynamics	F. Ticozzi	3 CFU (16 hours)
IE_AUT 6	Advanced topics on model predictive control	M. Bruschetta, R. Carli, S. Del Favero	4 CFU (8+6+6 hours)
<b>Electronics</b>			
IE_ELE 1	Physics and Operation of Heterostructure-Based Electronic and Optoelectronic Devices	M. Meneghini, C. De Santi, M. Buffolo	4 CFU (6 + 6 + 8 hours)
IE_ELE 2	Embedded Design with FPGA	D. Vogrig, A. Stanco	TACE
<b>Bioengineering</b>			
IE_BIO 1	Statistical Learning for Big Data in Medicine	A. Facchinetti, M. Vettoretti	TACE
IE_BIO 2	Quantitative Neuroimaging: from microparameters to connectomics	A. Bertoldo, M. Veronese	TACE
IE_BIO 3	Elements of Synthetic Biology	M. Bellato	4 CFU (20 hours)
IE_BIO 4	Deep Learning for Biomedical Images	TBD	4 CFU (20 hours)
IE_BIO 5	Healthcare data management and analytics	E. Longato	4 CFU (20 hours)
<b>Telecommunications</b>			
IE_TLC 1	Information Theoretic Models in Security	N. Laurenti	TACE
IE_TLC 2	A Deep Dive into 5G Network Specifications and its Applications	M. Giordani	4 CFU (20 hours)
IE_TLC 3	Underwater Simulation and Experimentation	TBD	4 CFU (20 hours)
IE_TLC 4	A walkthrough on Generative AI: the evolution of generative strategies from GANs to diffusion models	S. Milani	4 CFU (20 hours)
<b>Seminar series for the PhD program</b>			
IE_CSC 4	Fairness, Accountability, and Transparency in AI	A. Fabris (MPI-SP)	4 CFU
IE_AUT 7	Applied Causal Inference	R. Arghandeh (Western Norway University)	4 CFU
IE_AUT 8	Distributed Machine Learning and Optimization: from ADMM to Federated and multiagent Reinforcement Learning	S. Dey (Uppsala University, Sweden)	4 CFU
IE_AUT 9	Fundamentals of Adaptive Control for Applications	A. Serrani (Ohio State University)	4 CFU
IE_AUT 10	Seminars on Quantum Probability, Information and Dynamics	T. Grigoletto	1 CFU
IE_ELE 3	Diagnostics of Electron Devices	G. Mura (Universita' di Cagliari)	4 CFU
IE_TLC 5	Machine Learning for Mobile Communication Systems	P. Dini (Centre Tecnològic de Telecomunicacions)	4 CFU
IE_TLC 6	Information theory and learning	S. Rini (NCTU, Taiwan)	4 CFU