ANNEX 1.2

DEGREE PROGRAM DIDACTIC REGULATIONS

MATHEMATICAL ENGINEERING

CLASS LM- 44

School: SCUOLA POLITECNICA E DELLE SCIENZE DI BASE

Department: DIPARTIMENTO DI MATEMATICA E APPLICAZIONI R. CACCIOPPOLI

Didactic Regulations in force since the academic year 2025 – 2026

STUDY PLAN

KEY

Type of Educational Activity (TAF):
B = Characterising
C = Related or Supplementary
D = At the student's choice
E = Final examination and language knowledge
F = Further training activities

Curriculum A

I Year -curriculum A

Title Course	SSD	Module	Credits	Hours	Type Activities	TAF	Disciplinary area	Mandatory / optional
Real and Functional Analysis	MATH-03/A	Single – 1 sem	9	72	Frontal lesson/MOOC	B	Mathematics, physics, computer science disciplines	Mandatory
Mathematical Physics Models	MATH-04/A	Single – 1 sem	9	72	Frontal lesson/MOOC	B	Mathematics, physics, computer science disciplines	Mandatory
Numerical Methods	MATH-05/A	Single – 2 sem	9	72	Frontal lesson	B	Mathematics, physics, computer science disciplines	Mandatory
Thermodynamics and Transport Phenomena	IMAT-01/A	Single – 2 sem	9	72	Frontal lesson	B	Engineering disciplines	Mandatory
Nonlinear Systems	IINF-04/A	Single – 2 sem	9	72	Frontal lesson	B	Engineering disciplines	Mandatory
Mathematical Methods for Engineering	MATH-03/A	Single – 1 sem	6	48	Frontal lesson/MOOC	B	Mathematics, physics, computer science disciplines	Mandatory (one of your choices) GROUP 1
Calculus of Variations	MATH-03/A	Single – 2 sem	6	48	Frontal lesson/MOOC	B	Mathematics, physics, computer science disciplines	
Discrete Mathematics	MATH-02/A	Single – 2 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	
Operational Research	MATH-06/A	Single – 1 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	
Differential Geometry	MATH-02/B	Single – 2 sem	6	48	Frontal lesson/MOOC	B	Mathematics, physics, computer science disciplines	
Algorithms and Parallel Computing	INFO-01/A	Single – 2 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	
Deep Learning	INFO-01/A	Single – 2 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	
Statistical Methods and Signal Theory	STAT-01/B	Module 1: Statistical Methods for Industrial Process Monitoring	6	48	Frontal lesson	C	Economic and statistics/Engineering disciplines	Mandatory (one of your choices) GROUP 3
	IINF-03/A	Module 2: Signal theory	6	48	Frontal lesson	C		
Statistical Methods and Economic Theory	STAT-01/B	Module 1: Statistical Methods for Industrial Process Monitoring	6	48	Frontal lesson	C	Economic and statistics disciplines	
	STAT-04/A	Module 2: Economic theory	6	48	Frontal lesson	C		
Modern and Solid State Physics	PHYS-02/A	Module 1: Modern Physics	6	48	Frontal lesson	C	Mathematics, physics, computer science disciplines	
	PHYS-04/A	Module 2: Solid State Physics	6	48	Frontal lesson	C		
Numerical Modeling of Materials and Solid-State Physics	CHEM-04/A	Module 1: Numerical Modeling of Materials	6	48	Frontal lesson	C	Chemistry/Physics disciplines	
	PHYS-04/A	Module 2: Solid State Physics	6	48	Frontal lesson	C		

II Year – curriculum A

Computational Fluid Dynamics	IIND-01/F	Single – 1 sem	9	72	Frontal lesson	B	Engineering disciplines	Mandatory
Electrodynamics of continuous media	IIET-01/A	Single – 2 sem	9	72	Frontal lesson	B	Engineering disciplines	Mandatory
Optoelectronics	IINF-01/A	Single – 2 sem	6	48	Frontal lesson	B	Engineering disciplines	Mandatory (one of your choices) GROUP 2
Electromagnetic Fields	IINF-02/A	Single – 1 sem	6	48	Frontal lesson	B	Engineering disciplines	
Information Theory	IINF-03/A	Single – 1 sem	6	48	Frontal lesson	B	Engineering disciplines	
Systems Identification and Control	IINF-04/A	Single – 1 sem	6	48	Frontal lesson	B	Engineering disciplines	
Waves	IIND-01/F	Single – 2 sem	6	48	Frontal lesson	B	Engineering disciplines	
Autonomously chosen topics			12			D		
Other			3			F		
Final test			18			E		

Curriculum B

I Year – curriculum B

Title Course	SSD	Module	Credits	Hours	Type Activities	TAF	Disciplinary area	Mandatory / optional
Real and Functional Analysis	MATH-03/A	Single – 1 sem	9	72	Frontal lesson/MOOC	B	Mathematics, physics, computer science disciplines	Mandatory
Mathematical Physics Models	MATH-04/A	Single – 1 sem	9	72	Frontal lesson/MOOC	B	Mathematics, physics, computer science disciplines	Mandatory
Numerical Methods	MATH-05/A	Single – 2 sem	9	72	Frontal lesson	B	Mathematics, physics, computer science disciplines	Mandatory
Thermodynamics and Transport Phenomena	IMAT-01/A	Single – 2 sem	9	72	Frontal lesson	B	Engineering disciplines	Mandatory
Nonlinear Systems	IINF-04/A	Single – 2 sem	9	72	Frontal lesson	B	Engineering disciplines	Mandatory
Mathematics for Cryptography	INFO-01/A	Single – 1 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	Mandatory (one of your choices) GROUP 1
Stochastic Processes	MATH-03/B	Single – 1 sem	6	48	Frontal lesson/MOOC	B	Mathematics, physics, computer science disciplines	
Partial Differential Equations	MATH-03/A	Single – 1 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	
Advanced Applied Engineering Mathematics	MATH-04/A	Single – 2 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	
Algebraic Structures and Advanced Linear Algebra	MATH-02/A	Single – 2 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	
Computational Complexity	INFO-01/A	Single – 2 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	
Geometric Structures and Topology	MATH-02/B	Single – 2 sem	6	48	Frontal lesson	B	Mathematics, physics, computer science disciplines	
Statistical Methods and Chemical Process	STAT-01/B	Module 1: Statistical Methods for Industrial Process Monitoring	6	48	Frontal lesson	C	Economic and statistics/Chemistry disciplines	Mandatory (one of your choices) GROUP 3
	ICHI-01/C	Module 2: Chemical Process Analysis and Simulation	6	48	Frontal lesson	C		
Statistical Methods and Economic Theory	STAT-01/B	Module 1: Statistical Methods for Industrial Process Monitoring	6	48	Frontal lesson	C	Economic and statistics disciplines	
	STAT-04/A	Module 2: Economic theory	6	48	Frontal lesson	C		
Modern and Solid State Physics	PHYS-02/A	Module 1: Modern Physics	6	48	Frontal lesson	C	Mathematics, physics, computer science disciplines	
	PHYS-04/A	Module 2: Solid State Physics	6	48	Frontal lesson	C		
Numerical Modeling of Materials and Solid-State Physics	CHEM-04/A	Module 1: Numerical Modeling of Materials	6	48	Frontal lesson	C	Chemistry/Physics disciplines	
	PHYS-04/A	Module 2: Solid State Physics	6	48	Frontal lesson	C		

II Year – curriculum B

Computational Fluid Dynamics	IIND-01/F	Single - 1 sem	9	72	Frontal lesson	B	Engineering disciplines	Mandatory
Electrodynamics of continuous media	IIET-01/A	Single – 2 sem	9	72	Frontal lesson	B	Engineering disciplines	Mandatory
Mechanical Vibrations	IIND-02/A	Single – 2 sem	6	48	Frontal lesson/MOOC	B	Engineering disciplines	Mandatory (one of your choices) **GROUP 2**
Electromagnetic Fields	IINF-02/A	Single – 2 sem	6	48	Frontal lesson	B	Engineering disciplines	
Heat Transfer	IIND-07/A	Single – 2 sem	6	48	Frontal lesson	B	Engineering disciplines	
Analysis and Control of Complex Systems	IINF-04/A	Single – 1 sem	6	48	Frontal lesson	B	Engineering disciplines	
Nonlinear Dynamics and Control	IINF-04/A	Single – 1 sem	9	48	Frontal lesson	B	Engineering disciplines	
Environment Fluid Mechanics and Hydraulics	CEAR-01/A	Single – 1 sem	6	48	Frontal lesson	B	Engineering disciplines	
Theory of Elasticity	CEAR-06/A	Single – 1 sem	6	48	Frontal lesson	B	Engineering disciplines	
Autonomously chosen topics			12			D		
Other			3			F		
Final test			18			E		