

CURRICULUM A

First Year				
COURSE		CFU	hours	Type
Real and Functional Analysis		9	72	mandatory
Mathematical Physics Models		9	72	mandatory
Numerical Methods		9	72	mandatory
Thermodynamics and Transport Phenomena		9	72	mandatory
Nonlinear Systems		9	72	mandatory
Mathematical Methods for Engineering		6	48	1 chosen from GROUP 1
Calculus of Variations		6	48	
Stochastic Processes		6	48	
Operational Research		6	48	
Algebraic Structures and Advanced Linear Algebra		6	48	
Mathematics for Cryptography		6	48	
Statistical Methods and Signal Theory	Modulo 1: Statistical Methods for Industrial Process Monitoring	6	48	1 chosen from GROUP 3
	Modulo 2: Signal theory	6	48	
Statistical Methods and Economic Theory	Modulo 1: Statistical Methods for Industrial Process Monitoring	6	48	
	Modulo 2: Economic theory	6	48	
Modern and Solid State Physics	Modulo 1: Modern Physics	6	48	
	Modulo 2: Solid State Physics	6	48	
Second Year				
Computational Fluid Dynamics		9	72	mandatory
Electrodynamics of continuous media		9	72	mandatory
Optoelectronics		6	48	1 chosen from GROUP 2
Algorithms and Parallel Computing		6	48	
Electromagnetic Fields		6	48	
Information Theory		6	48	
Systems Identification		6	48	
Autonomously chosen topics		12		
Other		3		
Final exam		18		

CURRICULUM B

First Year				
COURSE		CFU	hours	Type
Real and Functional Analysis		9	72	mandatory
Mathematical Physics Models		9	72	mandatory
Numerical Methods		9	72	mandatory
Thermodynamics and Transport Phenomena		9	72	mandatory
Nonlinear Systems		9	72	mandatory
Geometric Structures and Topology		6	48	1 chosen from GROUP 1
Discrete Mathematics		6	48	
Partial Differential Equations		6	48	
Advanced Applied Engineering Mathematics		6	48	
Computational Complexity		6	48	
Differential Geometry		6	48	
Statistical Methods and Chemical Process	Modulo 1: Statistical Methods for Industrial Process Monitoring	6	48	1 chosen from GROUP 3
	Modulo 2: Chemical Process Analysis and Simulation	6	48	
Statistical Methods and Economic Theory	Modulo 1: Statistical Methods for Industrial Process Monitoring	6	48	
	Modulo 2: Economic theory	6	48	
Modern and Solid State Physics	Modulo 1: Modern Physics	6	48	
	Modulo 2: Solid State Physics	6	48	
Second Year				
Computational Fluid Dynamics		9	72	mandatory
Electrodynamics of continuous media		9	72	mandatory
Mechanical Vibrations		6	48	1 chosen from GROUP 2
Electromagnetic Fields		6	48	
Waves		6	48	
Heat Transfer		6	48	
Analysis and Control of Complex Systems		6	48	
Nonlinear Dynamics and Control		6	48	
Environment Fluid Mechanics and Hydraulics		6	48	
Theory of Elasticity		6	48	
Autonomously chosen topics		12		
Other		3		
Final exam		18		