



2ND YEAR - SEMESTER 7

Course: 2nd year SN - Semester 7 (each teaching unit earns 5 ECTS credits)					
Telecommunications systems	Computer Networks	System architecture and networks	Software systems	Image and multimedia	HPC and Big data
Coded Digital Communications		Functional Programming and Software Engineering	Functional Programming	Functional Programming / Compilation	
Digital communications on selective channels		Architecture	Optimization 1 / Operational research		
Advanced design and programming		Communicating concurrent systems			
Internet and interconnection			Mathematical tools for computer science (proofs) / Graphs		
Local Area Networks and Telecommunications			Software and Systems Engineering		
Soft & Human Skills					

2ND YEAR - SEMESTER 8

Course: 2nd year SN - Semester 8 (each teaching unit earns 5 ECTS credits)					
Telecommunications systems	Computer Networks	System architecture and networks	Software systems	Image and multimedia	HPC and Big data
Advanced digital telecommunications	Communicating concurrent applications				
Architecture of Telecom Elements	Network engineering	Mobile programming		Advanced linear algebra	
Digital electronics	Network modeling	Advanced programming and dedicated languages	Approximation, interpolation, partial differential equations		
Wireless and mobile telecommunications systems	Semantics and language translation		Audiovisual data processing	Multi-resolution control and analysis	
System, mobile applications and security	Architecture of operating systems	Formal methods / Mathematical tools for computer science	Image, rendering, modeling	Machine learning and optimization	
Soft & Human Skills					



3RD YEAR - SEMESTER 9

Course : 3rd year SN - Semester 9

Software systems	Image and multimedia	HPC and Big data	Big data and IoT infrastructure	Wireless telecommunications and connected objects	Embedded systems and networks
Refining and formal methods	Vision and image synthesis, augmented reality	Inverse problems	Networks for the IoT		
Critical systems	Access to multimedia data	Unstructured big data	Operator networks	Advanced Telecommunications	Embedded software
Information systems	Multimedia content analysis	High performance scientific computing	Advanced operator techniques	Advanced mobile networks	Formal methods
Distributed systems and algorithms and security				Terrestrial communication systems and connected objects	Embedded systems engineering
reverse engineering		Virtualisation			
Cloud et Big data, Machine learning				Space and aeronautical communications	Real-time networks and systems
Soft & Human Skills					

SEMESTER 10 - End of studies internship (March to September)

Students complete their end-of-study internship in companies (possibly in a laboratory), in France or abroad.

Many offers are sent by companies to ENSEEIHT. In addition, forums are offered to help students find their internship.



2ND YEAR - SEMESTER 7

Course : 2nd year MF2E - Semester 7 (each teaching unit earns 5 ECTS credits)
Soft & Human Skills 3
Fluid mechanics 4
Fluid mechanics 5
Mechanics 2
Scientific Computing 2
Transfers

2ND YEAR - SEMESTER 8

Course: 2nd year MF2E - Semester 8 (each teaching unit earns 5 ECTS credits)	
Water and Environment	Energy - FEP
Soft & Human Skills 4	
TPLD Experimental Projects	
Digital project	
Hydrodynamics and structures	Aerodynamic
Transfers in natural environments	Energy and processes
Weather, climate, water resources	Fluid systems



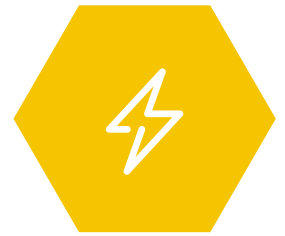
3RD YEAR - SEMESTER 9

Semester 9 - Transversality of Teaching Units		
Course : 3rd year MF2E - Semester 9 (each teaching unit earns 5 ECTS credits)		
Fluids, energy and processes	Sciences de l'eau et de l'environnement	Modeling and numerical simulation
Energy and processes	Éco-énergie	Numerical methods and optimization
Modeling and simulation	Advanced Hydrology	Projets numériques
Flowing particles	Hydrologiy	Aérodynamique
Reactive media	Environmental flow	Physical modeling and propulsion
Combustion	Transport and mixing	Basic elements for advanced simulation
Soft & Human Skills		

3RD YEAR - SEMESTER 10

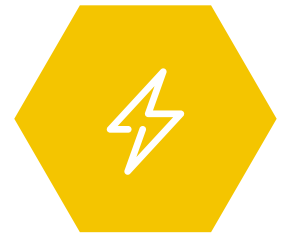
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2ND YEAR - SEMESTER 7		
Course: 2nd year 3EA - Semester 7 (each teaching unit earns 5 ECTS credits)		
Acquisition, processing and transmission of information	Computational physics	Énergie
Digital	Scientific calculation 3EA (common with the MF2E department)	Automation of linear systems
Electromagnetic propagation		Electrical networks
Data processing	Computer science and analog filtering	Architecture and development of computer systems
Analog RF	Synthesis and design of static converters	
Analog BF	Electric machine	
Soft & Human Skills 3		

2ND YEAR - SEMESTER 8					
Course: 2nd year 3EA - Semester 8 (each teaching unit earns 5 ECTS credits)					
Systems integration	Electromagnetic communicating systems	Computational physics	Mechatronic systems	Electrical systems of the future	Real-time automatic systems
From silicon to integrated circuits	Numerical methods		Materials for actuation	Implementation of communication cells	Engineering of networks and real-time systems
Circuits and antennas	Transmission of information: Circuits and antennas	Analytical tools and physics of mechatronics		Renewable Energy and FACTS	Sampled Discrete Event Systems
Opto Hyper		Scientific computing and materials	Architectures and control of electrical systems		
Architecture of digital systems	Physical phenomena and modeling		Automatic and non-linear systems		
Nano satellite		Digital projects (common with MF2E)	Numerical control		
Soft & Human Skills 4					



3RD YEAR - SEMESTER 9

Course: 3rd year 3EA - Semester 9 (each teaching unit earns 5 ECTS credits - Except Eco-energy)

Systems Integration	Electromagnetic Communicating Systems	Computational Physics	Electrodynamics and Advanced Mechatronics	Computer Control Architecture for Embedded Systems	Electrical Conversion and Energy Networks	Eco - Energy
Analog RF systems	Numerical methods for diffraction problems	Numerical methods and optimization	Architecture of mechatronic systems	Control, filtering, diagnosis of systems	Actuators and generators	Systemic design (8ECTS)
Numerical systems	Embedded high frequency systems	Numerical methods for diffraction problems	Design of electromechanical systems	optimization of systems and their control	Power systems and networks	Hybrid systems, Smart grids and Electrochemical storage (8ECTS)
Deepening (optional) analogue or digital	Microwave circuits and EMC	CEM and Applied Mathematics	Numerical methods and optimization	Modeling, analysis, simulation of discrete systems	CVS design	Renewable energies (8ECTS)
Deepening (optional) management or RF	Applied physics and high frequencies	Environment for intensive computing (common EU MF2E)	Applied Mechatronics	Advanced servo systems	CVS and advanced systems	General education (6ECTS)
Mixed systems	Phenomena related to propagation and radar	Physics for mechatronics		Advanced critical computing systems	Smart grids and microgrids	
Soft & Human Skills 5						
Work in a group of 10 people as part of a BEI on topics related to the industry to implement a technical project.						

Semester 10 - End of studies internship (March to September)

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