

Semester 5**Language and human Sciences 1 - 5 ECTS - 84h**

English
2nd language (optional)
Environmental sciences
Firm organization
Accountancy
Training by physical activities and sports

Mathematics-computing 1 3 ECTS - 51h

Mathematic tools
Fundamental concepts of algorithmic

Electronics 1 4 ECTS - 60h

Electrotechnics
Electronics

Automatic control 1 - 5 ECTS - 72h

Continuous and sampled automatic control
Discrete automatic control
Signal Processing

Design and Manufacturing 1- 4 ECTS - 60h

Mechanical manufacturing processes 1
Design of mechanisms 1

Mechanics 1 - 5 ECTS - 52,5h

Strength of materials
Mechanics 1
Mechanics 2
Energetics of mechatronic systems

Mechatronics 1 - 4 ECTS - 61,5h

Mechatronic systems modeling
Mechatronic systems design

Semester 6**Foreign languages and human sciences - 5 ECTS
73,5h**

English
Second language (optional)
Personal communication technics
Engineer culture
Health and security at work
Training by Physical Activities and Sports

Innovation and Creativity - 3 ECTS - 42h

Creativity and Innovation Project

Mathematics-Computing 2 - 4 ECTS - 60h

Numerical analysis
C and Python programming

Mechanics MT 2 4 ECTS - 60h

Elasticity
CAD
Design of mechanisms 2

Electronics 2 - 5 ECTS - 60h

Instrumentation
Power and control electronics

Automatic 2 -5 ECTS - 90h

Continuous linear systems
Discrete automatic control
Logical synthesis

Mechatronics 2 - 5 ECTS -90h

Electronic circuit design
Microprocessor structure
Embedded systems

Semester 7**Internship - 30 ECTS - 700h**

Semester 8

Languages and human sciences 3 - 6 ECTS 94,5h

English
Second language (optional)
Training by Physical Activities and Sports
Group communication
Intellectual property
Entrepreneurship
Human resources management

Mechanics MT 3 - 4 ECTS - 72h

Analysis of multibody systems
Materials
Initiation to the finite element method

Electronics 3 - 6 ECTS - 90h

Electrotechnics
Digital electronics
Microcontroller engineering

Mechatronics 3 - 4 ECTS - 60h

Mechatronic Analyse & Design
Modeling and simulation of mechatronic systems

Automatic Control 3 - 5 ECTS - 81h

Automatic Control
System identification
Digital signal processing

Total Common basis - 26 ECTS - 397,5h

AMS Architecture of mechatronic systems axis - 4 ECTS - 0,5h

Mechatronic systems conception

Advanced microcontroller architecture
Servomechanism design

A2M Multiphysical point of view of mechatronic systems axis - 4 ECTS - 70,5h

Multiphysical analysis of mechatronic systems

Total Common basis + A2S Axis - 30 ECTS - 468h

Total Common basis + AMS axis - 30 ECTS - 468h

Semester 9

Industrially based group project - 6 ECTS - 120h

Industrially based group project

Foreign languages and human sciences 4 - 5 ECTS - 66h

English
Second language (optional)
Training by Physical Activities and Sports
Project management
Labour law

Elective courses - 3 ECTS - 42h

Elective course n°1
Elective course n°2

Total Common basis 3A - 14 ECTS - 228h

Mechatronics 4 - 6 ECTS - 102h

Reliability assessment of mechatronic systems
Signal processing and mechatronic systems
Mechatronic modeling and simulation
Electronics for mechatronic systems

Architecture of mechatronic systems axis

Smart and evolutive mechatronic systems - 4 ECTS 82,5h

Object oriented design of mechatronic systems
Embedded network

Advanced mechatronic system development - 6 ECTS - 97,5h

Mechatronic system prototyping
DSP implementation
Advanced automatic control

Total Architecture of mechatronic systems axis 10 ECTS - 180h

Semester 10

Multiphysical point of view of mechatronic systems axis

Multiphysics mechatronic systems conceptions - 6 ECTS - 99h

- Distributed parameters multiphysics modeling
- Active materials, physical and numerical approach
- Equivalent circuits modeling
- MEMS technology

Mechatronic and multiphysical systems implementation - 4 ECTS - 81h

- RF MEMS and technologies
- Embedded information system
- Optomechatronic integrated systems

Total common basis MT + Architecture of mechatronic systems axis

30 ECTS - 510h

Total common basis MT + Multiphysical point of view of mechatronic systems axis

30 ECTS - 510h

Final Internship 30 ECTS - 700h