

INSTRUMENTATION AND CONTROL ENGINEERING
(Applied Physics and Instrumentation)

TIMETABLES – ECTS GUIDE

FIRST YEAR

SEMESTER 1:

UE	CODE	Module	ECTS	Total	Courses	Tutorials	Practical work	Total/semester
UE1.1	M1.1.1	English: general communication	2.5	10		25	30	55
	M1.1.2	Communication: fundamental elements	2		10	15	35	60
	M1.1.3	Personal professional project	2		35	50		85
	M1.1.4	Tutored project 1	1		6	12	12	30
	M1.1.5	Mathematics – trigonometric analysis	2.5					75
Total UE1.1					51	102	77	305
UE1.2	M1.2.1	Data processing (DAO)	2	12	10	15	20	45
	M1.2.2	Metrology and sensors	2.5		10	15	20	45
	M1.2.3	Mathematics - geometry	2		10	16	4	30
	M1.2.4	Computer algorithms	2.5		14	18	28	60
Total UE1.2					68	101	96	265
UE1.3	M1.3.1	Electrical systems	3	11				
	M1.3.2	Molecular and atomic structures	2					
	M1.3.3	Chemical balance – safety in the lab	2					
	M1.3.4	Thermodynamics	2					
	M1.3.5	Thermal machines	2					
Total UE1.3								
TOTAL SEMESTER 1 (+ project):				30	119	203	173	495 (570)

FIRST YEAR								
SEMESTER 2:								
UE	CODE	Module	ECTS	Total	Courses	Tutorials	Practical work	Total/semester
UE2.1	M2.1.1	Technical English	2.5	10		25	35	60
	M2.1.2	Communication: integration techniques	2		20	30		50
	M2.1.3	Mathematics: analysis – linear algebra	2.5		8	10	27	45
	M2.1.4	Tutored project 2	2					
	M2.1.5	Personal professional project	1					
Total UE2.1					28	65	62	155
UE2.2	M2.2.1	Electromagnetism and applications	2	12	10	15	20	45
	M2.2.2	Electronics	2		10	15	20	45
	M2.2.3	Informatics instrumentation	2		10	15	20	45
	M2.2.4	Materials structures	2		10	15	20	45
	M2.2.5	Materials properties	2					75
Total UE2.2					40	60	80	255
UE2.3	M2.3.1	Oxidation reduction and chemical kinetics	2	10	14	22	29	65
	M2.3.2	Marketing & materials	3		6	9	30	45
	M2.3.3	Optics	2		15	22	28	65
	M2.3.4	Thermal transfers	3					
Total UE2.3					35	53	87	175
TOTAL SEMESTER 2 (+ project):				28 (30)	103	178	229	510 (585)

SEMESTER 3: SECOND YEAR								
(OPTION PHYSICO – CHEMICAL METHODS AND CONTROLS)								
UE	CODE	Module	ECTS	Total	Courses	Tutorials	Practical work	Total/semester
UE1	M1.1	EEO	2	11				
	M1.2	Professional English	2					
	M1.3	Personal professional project	1					
	M1.4	Metrology & quality	2					
	M1.5	Mathematics	2					
	M1.6	Tutored project	2					
Total UE1								
UE2	M.2.1	Fluid mechanics	3	9				
	M2.2	Optics	2					
	M.2.3	Photonics	2					
	M2.4	Vibratory mechanics	2					
Total UE2								
UE3	M3.1	Signalisation	2	10				
	M3.2	Instrumentation	2					
	M3.3	Spectroscopic techniques	2					
	M3.4	Characterization techniques	2					
	M3.5	Characterization methodology	2					
Total UE3								
TOTAL SEMESTER 3 (+ project):								

SEMESTER 4: SECOND YEAR								
(OPTION PHYSICO – CHEMICAL METHODS AND CONTROLS)								
UE	CODE	Module	ECTS	Total	Courses	Tutorials	Practical work	Total/semester
UE1	M1.1	EEO	1	9				
	M1.2	Technical English	1					
	M1.3	Tutored project	3					
	M1.4	Electrochemical analysis & separative analysis techniques – nuclear techniques	2.5					
	M1.5	Automatic	1.5					
Total UE1								
UE2	M.2.1	Measurement and control chain	3	7.5				
	M2.2	Structures materials properties	1.5					
	M.2.3	Modifications materials properties	1.5					
	M2.4	Chemical analysis: techniques	1.5					
Total UE2								
UE3	M3.1	Internship	12	12				
Total UE3								
TOTAL SEMESTER 4 (+ project):								

SEMESTER 3: SECOND YEAR								
(OPTION INSTRUMENTAL TECHNIQUES)								
UE	CODE	Module	ECTS	Total	Courses	Tutorials	Practical work	Total/semester
UE1	M1.1	EEO	2	11				
	M1.2	Languages	2					
	M1.3	Personal professional project	1					
	M1.4	Metrology & quality	2					
	M1.5	Mathematics	2					
	M1.6	Tutored project	2					
Total UE1								
UE2	M.2.1	Fluid mechanics	3	9				
	M2.2	Optics	2					
	M.2.3	Photonics	2					
	M2.4	Vibratory mechanics	2					
Total UE2								
UE3	M3.1	Signalisation	2	10				
	M3.2	Instrumentation	2					
	M3.3	Spectroscopic techniques	2					
	M3.4	Electrotechnics	2					
	M3.5	Electronic instrumentation	2					
Total UE3								
TOTAL SEMESTER 3 (+ project):								

SEMESTER 4: SECOND YEAR								
(OPTION INSTRUMENTAL TECHNIQUES)								
UE	CODE	Module	ECTS	Total	Courses	Tutorials	Practical work	Total/semester
UE1	M1.1	EEO	1	9				
	M1.2	Technical English	1					
	M1.3	Tutored project	3					
	M1.4	Electrochemical analysis & separation analytical techniques – nuclear techniques	2.5					
	M1.5	Automation	1.5					
Total UE1								
UE2	M.2.1	Measurement and control chain	3	9				
	M2.2	Programming embedded systems	1.5					
	M.2.3	Optoelectronics	1.5					
	M2.4	Acoustic measurements	1.5					
	M2.5	Elective module (Mathematics, Physics, Chemistry, RDM (resistance of materials))	1.5					
Total UE2								
UE3	M3.1	Internship	12	12				
Total UE3								
TOTAL SEMESTER 4 (+ project):								