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UE	Course	ECTS	Language
JME5U1	PHYSICS I	10	
	Power Electronics/Electrical Engineering		
	Thermodynamics		
	Measurement: Pressure, Flow rate, Temperature		
	Practicals		
	Refresher Course		
JME5U2	MECHANICS I	8	
	Continuum Mechanics		
	Elasticity-Strength of Materials		
	Introduction to Fluid Mechanics		
	Practicals		
	Refresher Course		
JME5U3	MATHEMATICS AND COMPUTING I	8	
	Mathematics for Engineering		
	Algebra		
	Refresher Course		
	Information and Communication Technologies		
	Informatics for Engineering		
JME5U4	LANGUAGES AND SOCIAL SCIENCE, HUMANITIES, ECONOMICS, LAW I	4	
	English		
	Organization and operation of the companies		









BACHELOR, 3rd Year - 2nd Semester (S6) [JME6ST0]

UE	Course	ECTS	Language
JME6U1	PHYSICS II Automatics Introduction to Heat Transfer Practicals Refresher Course Thermodynamics Machines	9	
JME6U2	MECHANICS II Technology Mechanics and Real Fluids Materials Practicals Refresher Course Optics, waves and vibrations	6	
JME6U3	MATHEMATICS AND COMPUTING II Numerical Methods Statistics and Probability Scientific Calculation and FORTRAN language Refresher Course	7	
JME6U4	LANGUAGES AND SOCIAL SCIENCE, HUMANITIES, ECONOMICS, LAW II English Health & Safety Corporate finances Communications and Techniques of Expression	5	
JME6U5	WORK PLACEMENT I (Internship)	3	







MASTER, 1st Year - 1st Semester (S7) [JME7ST0]

UE	Course	ECTS	Language
JME7U1B	HEAT AND MASS TRANSFER	10	
	Conduction		
	Convection		
	Radiation		
	Practicals		
	Refresher Course		
	Combustion I		
	Fossil and renewable energies		
JME7U2B	MECHANICS III	10	
	Compressible Fluid Mechanics		
	Rheology of Complex Fluids		
	Applied Fluid Mechanics		
	Practicals		
	Refresher Course		
JME7U3B	TOOLS FOR ENGINEERING	5	
	Refresher Course		
	Computing Tools for Engineering I (Matlab)		
	Computing Tools for Engineering II (Interface and Macro-VB)		
	Controls and Processes		
JME7U5	LANGUAGES AND SOCIAL SCIENCE, HUMANITIES, ECONOMICS, LAW III	5	
	English		
	Project Management		
	Job seeking techniques		
	Commercial and marketing		
	Quality Management		


MASTER, 1st Year - 2nd Semester (S8) [JME8ST0]

UE	Course	ECTS	Language
JME8U1B	THERMAL SYSTEMS AND ENERGETICS I Energy Systems Heat and Buildings I Air conditioning and Heat Pumps Heat Exchangers Refresher Course Change of Phase Semi-Transparent Media	6	
JME8U2A	EXPERIMENTAL AND COMPUTING TECHNIQUES Project: Initiation to Research Computing Methods for Thermal Processes Computer Simulation for Flow Refresher Course	4	
JME8U3A	METHODS AND PROJECTS IN THE DESIGN OFFICE Creativity, innovation and entrepreneurship I Design Office Project	2	
JME8U4	LANGUAGES AND SOCIAL SCIENCE, HUMANITIES, ECONOMICS, LAW IV English Sustainable Development Human Relation Management	4	
JME8SX JME8U5A	OPTION/TRACK 1: INDUSTRIAL AND NATURAL RISKS I Industrial Security Safety of Operation Explosive Materials, Explosions Combustion II Simulation of Detonation Waves Radiation, Monte-Carlo Methods and Flow	8	
JME8SX JME8U6A	OPTION/TRACK 2: ENERGIES I Renewable Energies I Renewable Energies II Thermal Methodology and Processes Energy Storage Energy distribution and Markets Heat and Buildings II	8	
JME8SX JME8U7A	OPTION/TRACK 3: ADVANCED NUMERICAL MODELING IN FLUID MECHANICS AND HEAT TRANSFERS I Incompressible Fluid Flow I Turbulence Interface Tracking method and Algorithm Thermo-Mechanics Instability in Fluid Mechanics: computations (Ritchmyer-Meshkov) High Performance Computing	8	
JME8U8A	WORK PLACEMENT II (Internship)	6	

MASTER, 2nd Year - 1st Semester (S9) [JME9U1B]

UE	Course	ECTS	Language
JME9U1B	THERMAL SYSTEMS AND ENERGETICS II	7	
	Advanced Heat Transfers Renewable Energies III STARCCM+ Modelling Nuclear Engineering		
JME9U2B	MECHANICS IV	9	
	Multiphase Flows Finite Elements Modelling Final Year Project Signal Processing		
JME9U3A	LANGUAGES AND SOCIAL SCIENCE, HUMANITIES, ECONOMICS, LAW V	6	
	English Environmental Management Labour Law Job Seeking Techniques II (professional integration)		
JME9SX JME9U5	OPTION/TRACK 1: INDUSTRIAL AND NATURAL RISKS II	8	
	Decision-Aid Methods and Tools Propagation of Wildfires and “Small World” Approach Combustion III Simulation of Fires Compartment and Urban Environment Fires Natural Risks		
JME9SX JME9U6	OPTION/TRACK 2: ENERGIES II	8	
	Dynamics of Energy Systems I Renewable Energy IV Sustainable, Bioclimatic and Positive Energy Buildings Heat Exchangers II High Temperature Industrial Processes and Materials Dynamics of Energy Systems II		
JME9SX JME9U7	OPTION/TRACK 3: ADVANCED NUMERICAL MODELING IN FLUID MECHANICS AND HEAT TRANSFERS II	8	
	High Performance Computing II Numerical Modelling of Instabilities Multiphase flow: Gas-Solid Dedicated numerical codes for fire safety Incompressible Fluid Flow II Finite Volume Method: 1D to multiD		

MASTER, 2nd Year - 2nd Semester (S10) [JME10ST0]

UE	Main course	ECTS	Language
JME10U1	WORK PLACEMENT III (Internship)	30	 / 