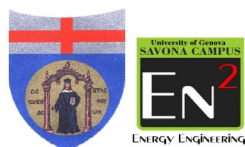


Double Degree Program - European Master in Engineering for Energy and Environmental Sustainability (EM3ES)



This Agreement is made between Università degli Studi di Genova, Italy (UNIGE) and the Management Center Innsbruck (MCI), Austria
(Ver. march 2021)

EM3ES for UNIGE students

EM3ES semester 1 for UNIGE students (at Unige)	
Course Title	ECTS
Heat Transfer (66382)	6
Mathematical Modeling for Energy Systems (86630)	6
Chemical Processes and Technologies (86631)	6
Industrial Fluid-dynamics (86641)	6
Combustion Processes and Emissions (80054)	6
EM3ES semester 2 for UNIGE students (at Unige)	
Chemical and Biochemical Processes and Plants for Energy (72562)	6
Power Systems Modeling and Control (65887)	6
Power Systems Management (86638)	6
Power Plants for Energy Conversion (80053)	6
Industrial Plants for Energy (86644)	6
EM3ES semester3 for UNIGE students (at MCI)	
Plant Safety	2
Plant Engineering	3
Computational Fluid Dynamics - Theory	2
Computational Fluid Dynamics - Simulation	3
Interdisciplinary Project	10
Energy Engineering Branch (at MCI)	
Renewable Energy Systems	2.5
Heating and Cooling Technology	2.5
Environmental Engineering Branch (at MCI)	
Renewable Energy Systems	2.5
Heating and Cooling Technology	2.5

EM3ES semeste4 for UNIGE students (at MCI)	
Academic Writing	1
Design of Experiments	2
Ethics	1
Literature Seminar	1
Conceptual Process Design & Simulation	4
Plantwide Control	3
Apparatus Engineering	3
Solid Process Engineering - Particle Technology	3
Advanced Thermal Process Technology	2
Energy Engineering Branch at MCI (from Elective courses)	
Power and Smart Grids	2.5
Energy Conversion Technologies and Synthetic Bio-Fuels	2.5
Environmental Engineering Branch at MCI (from elective courses)	
Groundwater, Advanced Water Engineering and Reuse	4
Life Cycle Assessment	1
EM3ES semester 5 for UNIGE students	
Master Seminar	5
Jointly supervised Master Thesis and Traineeship ("Tirocinio"), in Unige ECTS	12
TOTAL	137

EM3ES for MCI students

EM3ES semester 1 for MCI students	
<i>Course Title</i>	<i>ECTS</i>
Process Control	2
Reaction Engineering	3
Heat and Mass Transfer	4
Matlab in Engineering	1
Revision Course in Process Technology	10
Regulations and Standards in Process Engineering	1
Legal Aspects of Engineering	1
Business Economics	3
<i>5 credits from elective courses from two branches at MCI (List below)</i>	5
Elective Energy Engineering Branch	
Energy Storage	1.25
Elective Electrochemical Energy Storage and Conversion	1.25
Plant Design and Operations Branch	
Strength of materials	2.5
Elective Environmental Engineering Branch	
Waste Engineering	1.25
Noise Control	1.25
Elective Chemical Engineering Branch	
Polymer Chemistry	2.5
EM3ES semester 2 for MCI students	
Academic Writing	1
Design of Experiments	2
Ethics	1
Literature Seminar	1
Conceptual Process Design	4
Plantwide Control	3
Apparatus Engineering	3
Solid Process Engineering - Particle Technology	3
Fluid and Thermal Process Technology	2
<i>10 credits from elective courses from two branches at MCI (List below)</i>	10
Elective Energy Engineering Branch	
Power and Smart Grids	2.5
Energy Conversion Technologies and Synthetic Bio-Fuels	2.5
Elective Plant Design and Operations Branch	
Process Integration	1
Plant Automation	1
Materials Handling and Logistics	3
Elective Environmental Engineering Branch	
Groundwater, Advanced Water Engineering and Reuse	4
Life Cycle Assessment	1

Elective Chemical Engineering Branch	
Advanced Industrial Chemistry	2.5
Advanced Catalysis	2.5
EM3ES semester 3 for MCI students (at Unige)	
Models and Methods for Energy Engineering (86662)	6
Energy and Buildings (86655)	6
Fuel Cells and Distributed Generation Systems (86660)	6
Solar and Geothermal Energy (80043)	6
<i>1 elective course among those available at Unige below</i>	6
EM3ES semester 4 for MCI students (at Unige)	
Hydro, Wind and Micro-gas Turbines (86661)	6
Energy Laboratory (80081)	6
Power Systems Modeling and Control (65887)	6
Power Systems Management (86638)	6
<i>1 elective course among those available at Unige below</i>	6
EM3ES semester 5 for MCI students	
Master Seminar	5
Jointly supervised Master Thesis	25
TOTAL	150

Elective Courses at Unige	
Remote Sensing (80048) (semester 3)	6
Project Management for Energy Production (86666) (semester 3)	6
Advanced Propulsion Systems (86665) (semester 4)	6
Power Systems Simulation and Optimization (86667) (semester 4)	6