

## CURRICULUM: ENERGY TECHNOLOGIES

### First Year Study Plan (63 ECTS)

Year	Semester I			Semester II		
	SSD	Courses	ECTS	SSD	Courses	ECTS
I	IIND-03/A	B031730 Circular Design policies, regulations and practices	6	IIND-05/A IIND-08/A CEAR-02/A IEGE-01/A	<i>alternative among:</i> - B031740 Sustainable plant and product lifecycle management - B031741 Power electronics for sustainability applications - B031743 Sustainable water and waste management - B031742 Business Economics	6
	IIND-03/A and IIND-06/B	B031736 Life Cycle Sustainability Assessment (joint course of "Life Cycle Sustainability Assessment for circular design of industrial products" and "Sustainable Energy")				12
	IIND-06/B	B031732 Systems and solutions for energy transition	9	IIND-02/A	B031734 Digital Twins of Mechatronic Systems	6
	STAT-01/A	B031733 Statistical methods for engineering	6		B032670 Project Work on Transversal Skills & Teamwork	6
	IIND-03/B	B031753 Innovation and Development of Sustainable Products	6			
	Free-choice course					6

## Second Year Study Plan (57 ECTS)

Year	Semester I			Semester II		
	SSD	Courses	ECTS	SSD	Courses	ECTS
II	IIND-06/B	<i>alternative between:</i> - B031754 Advanced renewable energy conversion - B031755 Smart energy systems storage and technologies	6	1 Project Work from Table A		9
	IIND-06/A	<i>alternative between:</i> - B031757 Hybrid propulsion systems - B031758 Turbomachinery for sustainable energy systems	6			
	1 course from Table B		6			
	Free-choice course				6	
	Traineeship				12	
	Thesis				12	

TABLE A		
SSD	Courses	ECTS
IIND-06/B – IIND-06/A	B031767 Project work on energy systems and component design (joint course of "Module on Sustainable Energy and Propulsion Systems" and "Complements of Design of renewable energy system components")	9
IIND-06/B – IIET-01/A	B031773 Project work on energy systems and smart grid integration (joint course of "Module on Sustainable Energy and Propulsion Systems" and "Complements of Operation and Control of Sustainable Smart Grids")	9
IIND-06/B – CHEM-02/A	B031775 Project work on hybrid propulsion systems (joint course of "Module on Sustainable Energy and Propulsion Systems" and "Complements of Fuel cells")	9

TABLE B			
<b>SSD</b>	<b>Courses</b>	<b>ECTS</b>	
IIND-06/A	B031759 Computational methods for aero-thermal applications	6	
IIND-06/A	B031760 Experimental methods for energy systems and components	6	
IIND-07/A	B031762 Sustainable HVAC	6	
IIND-06/A – CEAR-02/A	B031763 Environmental impact of energy systems (joint course of “Formation, dispersion and impact of air-pollutants” and “Sustainable water and waste management” - 3CFU)	6	
IIET-01/A	B031766 Smart grid Integration and sustainable mobility	6	

**Suggested free-choice courses to strengthen knowledge and skills of specific roles**

<b>SSD</b>	<b>Courses</b>	<b>ECTS</b>	<b>Role</b>
IIND-05/A	B031740 Sustainable plant and product lifecycle management	6	R4
IINF-05/A	B028463 Big data architectures	6	R2
ECON-02/A	B032669 Energy and environmental economics	6	R4