UNIVERSITÀ DEGLI STUDI DI TRIESTE

Dipartimento di Ingegneria e Architettura

MASTER DEGREE IN

Engineering for the energy transition

academic year
2026/2027

Class LM-30 R
Ingegneria energetica e nucleare

UNIVERSITÀ DEGLI STUDI DI TRIESTE

Dipartimento di Ingegneria e Architettura

STUDY PROGRAMME
2026/2027 cohort

The courses are classified based as follows (type of educational activity, "TAF"):

TAF B = characterizing courses
TAF C = complementary courses
TAF D = elective courses
TAF E = final thesis
TAF F = other activities

1st YEAR (62 ECTS)

COURSE	ECTS	DISC.	TYPE
Renewables and Energy Systems			
• Renewable Energy Technologies	6	IIND-06/B	B
• Elements of Fluidmachinery and Energy Systems	6	IIND-06/B	B
• Wind Energy	2	CEAR-06/A	C
Introduction to Energy and E-Mobility			
• Fundamentals of the Energy Sector	3	IIET-01/A	B
• E-Mobility and Introduction to Nuclear Energy	3	IIET-01/A	B
Economics, Legislation and Evaluations for the Energy Transition			
• Environmental Economics	3	CEAR-03/C	C
• Energy Transition Law and Policies	3	GIUR-06/A	C
• Economic Evaluation of Industrial Projects	3	IIND-05/A	C
Modern Power Systems and Electrification			
• Principles of the Power Sector and Enabling Technologies for Electrification	2	IIET-01/A	B
• Low Voltage Power Systems	4	IIND-08/B	B
Energy Conservation in Buildings			
• HVAC System Design	6	IIND-07/A	B
• HVAC Load Calculation	3	IIND-07/A	B
• Structural and Technological Design of Building Envelopes	3	CEAR-08/A	C
Elective Course	15		D

2nd YEAR (58 ECTS)

COURSE	ECTS	DISC.	TYPE
Materials and Systems for Photovoltaics and the Energy Transition			
• Materials for Photovoltaics and Energy Transition Technologies	3	IMAT-01/A	C
• Photovoltaic Systems and Energy Management	3	IIET-01/A	B
Photovoltaic and Battery Systems Modeling and Characterization	6	IIET-01/A	B
Computational Fluid Dynamics and Heat Transfer	9	IIND-07/A	B
Hydrogen and Fuel Cells	6	IIND-06/A	B
Sustainable Materials, Processes and Critical Resources			
• Design for Sustainability of Processes	3	ICHI-01/B	C
• Sustainable Materials: Selection and Design	3	IMAT-01/A	C
• Strategic and Critical Raw Materials	3	CHEM-06/A	C
Electricity Market	4	IIET-01/A	B
Other Activities	6		F
Final Thesis	12		E

The courses listed in the table below do not require approval; students can add them directly through the online system “esse3”. Students may propose other elective courses, but these are subject to approval. However, students cannot enroll in an elective course if they have already taken the same or equivalent exam in previous courses of study.

ELECTIVE COURSES

COURSE	ECTS	DISC.	TYPE
Industrial Energy Management	6	IIND-06/A	D
Battery Management Systems	6	IINF-04/A	D
Environmental Hydraulics: Pollutants, Emissions and Global Warming	6	CEAR-01/B	D
Wave and Tidal Power Plants (Module of an integrated course)	3	CEAR-01/B	D
Transport phenomena	9	ICHI-01/B	D
Fondamenti e Metodi per la progettazione	6	IIND-06/A	D
Control Theory	9	IINF-04/A	D
Embedded Systems	6	IINF-01/A	D
Entrepreneurship & Business Modelling	9	ECON-07/A	D
Mathematical Optimization	6	MATH-06/A	D
Analisi multidisciplinare, progetto e ottimizzazione di sistemi complessi	3	IIND-06/A	D
Impianti di abbattimento delle emissioni	6	IIND-05/A	D

EVALUATION

The level of knowledge will be evaluated by oral and/or written exams, as detailed by each instructor in the syllabus and at the beginning of the course.

FINAL THESIS

The final thesis consists in an original and independent work in the field of energy engineering. It can take the form of an extensive analysis of the scientific literature on a current relevant topic, or a design project, or a research project based on experiments, theory, or computational simulation. The work can be carried out entirely at the University of Trieste and/or in collaboration with other universities, research centers, and industries – both domestic and international.

UNIVERSITÀ DEGLI STUDI DI TRIESTE

PROSPECTIVE STUDENT SUPPORT AND PUBLIC INFORMATION OFFICES

Piazzale Europa 1, 34127 – Trieste (Italy)
Main Building (Building A), right wing, ground floor
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COMPETENT OFFICES

For further info on the degree programmes

Contact us