MCIL TRAINING OFFER

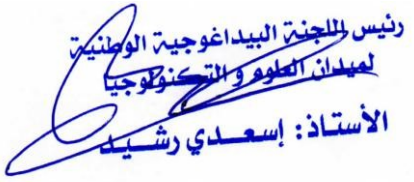
Thermal Conversion

Universityeof BLIDA 1

Faculty of Technology

UPDATE 2025

Algiers, September 8, 2025



Semester 1

Unit teaching	Materials Titled	Credit	Coefficien	Hourly volume weekly Course	DW	PW	Volume Hourly Semi-annual (15 weeks)	Work Complementary In Consultation (15 weeks)	Evaluation method Continuous	Exam
EU Fundamental Code: UEF 1.1.1 Credits: 10 Coefficients: 5	Analysis 1	6	3	1h30			67h30	82h30		
	Algebra 1	4	2	1h30	3h00		45h00	55h00	40% 40%	
EU Fundamental Code: UEF 1.1.2 Credits: 12 Coefficients: 6					1h30					
	Mechanical element	6	3	1h30	3h00		67h30	82h30	40%	60%
	Structure of matter	6	3	1h30	3h00		67h30	82h30	40%	60%
	TP elements of mechanics	2	1			1h30	22h30	22h30	100%	
Methodological Unit Code: UEM 1.1 Credits: 6 Coefficients: 4	TP structure of matter	2	1			1h30s	22h30	22h30	100%	
	Computer Structure and Applications	2	2	1h30		1h00	37h30	22h30	40%	60%
E Transversal Code: UET 1.1 Credits: 2 Coefficients: 2	Ethical dimension and deontological (the foundations)	1	1	1h30			22h30	2h30		100%
	Careers in science and technology	1	1	1h30			22h30	2h30		100%
Total semester 1		30	17		10h30	4h00	375h00	375h00		

Semester 2

Unit teaching	Materials Titled	Credits	Coefficient	Hourly volume weekly Course	DW	PW	Hourly Volume Semi-annual (15 weeks)	Work Complementary In Consultation (15 weeks)	Evaluation method Control Continuous	Exam
Fundamental EU Code: UEF 1.2.1 Credits: 10 Coefficients: 5	Analysis 2	6	3	1h30	3h00		67h30	82h30	40%	60%
	Algebra 2	4	2	1h30	1h30		45h00	55h00	40%	60%
Fundamental EU Code: UEF 1.2.2 Credits: 12 Coefficients: 6	Electricity and magnetism	6	3	1h30	3h00		67h30	82h30	40%	60%
	Thermodynamics	6	3	1h30	3:00		67h30	82h30	40%	60%
Methodological Unit Code: UEM 1.2 Credits: 6 Coefficients: 4	Electricity and Magnetism Lab	2	1			1h30	22h30	22h30	100%	
	Thermodynamics Lab	2	1			1h30	22h30	22h30	100%	
	Introduction to programming	2	2	1h30		1h00	37h30	22h30	40%	60%
EU Transversal Code: UET 1.2 Credits: 2 Coefficients: 2	Free and open source software	2	2		1h30		45h00	5h00	40%	60%
Total semester 2		30	17	9h00	10h30	5h30	375h00	375h00		

Semester 3

Unit teaching	Materials	Credit	Coefficient	Hourly volume weekly			Volume Hourly Semi-annual	Work Complementary In Consultation	Evaluation method Control	
	Titled			Course	DW	PW	(15 weeks)	(15 weeks)	Continuous	Exam
Fundamental EU Code: UEF 2.1.1 Credits: 10	Analysis 3	6	3	1h30	3h00		67h30	82h30	40%	60%
Coefficients: 5	Waves and vibrations	4	2	1h30	1h30		45h00	55h00	40%	60%
Fundamental EU Code: UEF 2.1.2 Credits: 8 Coefficients: 4	Fluid Mechanics 1	4	2	1h30	1h30		45h00	55h00	40%	60%
	Fundamental Electronics 1	4	2	1h30	1h30		45h00	55h00	40%	60%
Methodological Unit Code: UEM 2.1 Credits: 11 Coefficients: 7	Probability and statistics	4	2	1h30	1h30		45h00	55h00	40%	60%
	Python programming	2	2	1h30		1h30	45h00	30:00	40%	60%
	Technical drawing	1	1			1h30	22h30	22h30	100%	
	Practical work in fundamental electronics 1 and fluid mechanics 1	2	1			1h30	22h30	22h30	100%	
	Waves and Vibrations Lab	2	1			1h00	15h00	15h00	100%	
EU Discovery Code: UED 2.1 Credits: 1 Coefficients: 1	Metrology	1	1	1h30	s		22h30	2h30		100%
Total semester 3		30	17	10h30 5h30	9h00 -		375h00	375h00		

Semester4License:Thermal Conversion

Unit teaching	Materials Titled	Credits	Coefficient	Hourly volume weekly			Hourly Volume Semi-annual (15 weeks)	Work Complementary inConsultation (15 weeks)	Evaluation method	
				Course	DW	PW			Control Continuous	Exam
Fundamental EU Code: UEF 2.2.1 Credits: 12 Coefficients: 6	Complex analysis	4	2	1h30	1h30		45h 00	55h00	40%	60%
	Fundamental Electronics 2	4	2	1h30	1h30		45h00	55h00	40%	60%
	Signal Theory	4	2	1h30	1h30		45h00	55h00	40%	60%
Fundamental EU Code: UEF 2.2.2 Credits: 8 Coefficients: 4	Fluid Mechanics 2	4	2	1h30	1h30		45h00	55h00	40%	60%
	Materials Strength	4	2	1h30	1h30		45h00	27h30	40%	60%
Methodological UEM Code: UEM 2.2 Credits: 8 Coefficients: 5	Numerical Methods 1	5	3	1h30	1 h 3 0	1h30	67h30	82h30	40% (20%DW+ 20%PW)	60%
	Practical Exercise: Strength of Materials	1	1			1h00	15h00	10:00	100%	
	Assisted Drawingee by computer	2	1			1h30	22h30	27h30	100%	
UETransversale Code: UET 2.2 Credits: 2 Coefficients: 2	Information and communication technologies	2	2	1h30	1h30 workshop		45h00	5h00	40%	60%
Total semester 4		30	17	12h00	9h00	4h00	375h 00	375h 00		

Semester5License:Thermal Conversion

Unit teaching	Materials Titled	Credits	Coefficient	Hourly volume weekly			Volume Hourly Semi-annual (15 weeks)	Work Complementary inConsultation (15 weeks)	Evaluation method	
				Course	DW	PW			Control Continuous	Exam
Fundamental EU Code: UEF 3.1.1 Credits: 10 Coefficients: 5	Heat Transfer	6	3	1h30	3:00		67h30	82h30	40%	60%
	Biomass, Geothermal Energy and Marine Energy	4	2	1h30	10h30		45h00	55h00	40%	60%
Fundamental EU Code: UEF 3.1.2 Credits: 8 Coefficients: 4	Applied Thermodynamics	4	2	1h30	1h30		45h00	55h00	40%	60%
	Energy Potential Renewable	4	2	1h30	1h30		45h00	55h00	40%	60%
Methodological UEM Code: UEM 3.1 Credits: 9 Coefficients: 5	NumericalMethods2	4	2	1h30		1h30	45h00	55h00	40%	60%
	Energy Lab	1	1			1h00	15h00	1000ll	100%	
	Measurement and Instrumentation and Standards	4	2	1h30		1h30s	45h00	55h00	40%	60%
UEDécouverte Code: UED3.1 Credits: 2 Coefficients: 1	Photovoltaic Systems	1	1	1h30			22h30	2h30		100%
	Renewable energies, Environment and sustainable development	1	1	1h30			22h30	2h30		100%
UETransversale Code: UET 3.1 Credits: 1 Coefficients: 1	Legislation and regulations on renewable energy	1	1	1h30			22h30	2h30		100%
Totals semester 5		30	17	13h30	7h30	4h00	375h00	375h00		

Unit teaching	Materials Titled	Credits	Coefficient	Hourly volume weekly			Volume Hourly Semi-annual (15 weeks)	Work Complementary inConsultation (15 weeks)	Evaluation method	
				Course	DW	PW			Control Continuous	Exam
Fundamental EU Code: UEF 3.2.1 Credits: 12 Coefficients: 6	Solar Thermal Systems	4	2	1h30	1h30		45h00	55h00	40%	60%
	Wind Power Systems	4	2	1h30	1h30		45h00	55h00	40%	60%
	Applied Thermodynamics 2	4	2	1h30	1h30		45h00	55h00	40%	60%
Fundamental EU Code: UEF 3.2.2 Credits: 8 Coefficients: 4	Materials and Energy Renewables	4	2	1h30	1h30		45h00	55h00	40%	60%
	Transformer Machines	4	2	1h30	1h30		45h00	27h30	40%	60%
Methodological UEM Code: UEM3.2 Credits: 8 Coefficients: 5	TP Renewable Energies	2	1			1h30	22h30	20h	100%	
	Final Year Project for Bachelor's Degree	4	2			2h30	37h30	65 hours	100%	
	programming and simulation practical work	2	2	1h30		2h00	52h30	35 hours	40%	60%
UEDécouverte Code: UED3.2 Credits: 1 Coefficients: 1	Renewable Energies and Sustainable Development	1	1	1h30	s		22h30	230		100%
UETransversale Code: UET 3.2 Credits: 1 Coefficients: 1	Entrepreneurship and Start-ups	1	1	1h30	s		22h30	2:30		100%

Totalsemester6		30	17 1	12h00	7h	6:00	375h 00	375h 00			Sem ester

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Semester 1 Master: Thermal Conversion

Unit teaching	Materials Titled	Credits	Coefficient	Hourly volume weekly			Volume Hourly Semi-annual (15 weeks)	Work Complementary inConsultation (15 weeks)	Evaluation method	
				Course	DW	PW			Control Continuous	Exam
Fundamental EU Code: UEF 1.1.1 Credits: 12 Coefficients: 6	Advanced Heat Transfer1	4	2	1h30	1h30		45h00	55h00	40%	60%
	Advanced Fluid Mechanics	4	2	1h30	1h30		45h00	55h00	40%	60%
	Thermal Machines	4	2	1h30		1h30	45h00	55h00	40%	60%
Fundamental EU Code: UEF 1.1.2 Credits: 8 Coefficients: 4h30	Mathematics for physics	4	2	1h30	1h30 es		45h00	55h00	40%	60%
	Applied Statistics	4	2	1h30	1h30		45h00	55h00	40%	60%
Methodological UEM Code: UEM 1.1 Credits: 9 Coefficients: 6	Advanced Programming in Python	2	2	1h30		1h30 ir	45h00	27h30	40%	60%
	Advanced Numerical Methods	5	3	1h30	1h30	1h00	60h00	82h30	40% (20%DW+20 %PW)	60%
	Maintenance and reliability of renewable energy systems	2	1			1h30	22h30	27h30	100%	
UETransversale Code: UET 1.1 Credits: 1 Coefficients: 1	Technical English and Terminology	1	1	1h30			22h30	2h30		100%
Total semester 1		30	17	12h00	7h30	5h30	375h00			

Semester2Master:ThermalConversion

Unit teaching	Materials Titled	Credits	Coefficient nt	Hourly volume weekly			Volume Hourly Semi-annual (15 weeks)	Work Complementary inConsultation (15 weeks)	Evaluation method	
				Course	DW	PW			Control Continuous	Exam
Fundamental EU Code: UEF 1.2.1 Credits: 10 Coefficient: 5	Advanced Heat Transfer 2	4	2	1h30	1h30	s	45h00	55h00	40%	60%
	Heating and air conditioning	4	2	1h30	1h30	s	45h00	55h00	40%	60%
	Thermal storage	2	1	1h30			22h30	55h00	40%	60%
Fundamental EU Code: UEF .1.2.2 Credits: 8 Coefficients: 4	Heat and mass transfer – finite volumes	4	2	1h30	1h30	s	45h00	55h00	40%	60%
	Energy potential Advanced Renewables	4	2	1h30	1h30	s	45h00	55h00	40%	60%
Methodological UEM Code: UEM 1.2 Credits: 8 Coefficients: 4	Thermal metrology, Servomechanisms and regulation	4	2	**1h30**	s	1h30	45h00	55h00		100%
	TP solar thermal sensor, Wind energy and photovoltaic energy	4	2			3h00	45h00	55h00	100%	
UEDécouverte Code: UED1.1 Credits: 1 Coefficients: 1	Political, economic and societal aspects of energy renewables	1	1	1h30			22h30	2h30		100%
UETransversale Code: UET 1.2 Credits: 3 Coefficients: 3	Elements of applied artificial intelligence	2	2	1h30	1h30		45h00	5h00	40%	60%
	Compliance with standards and rules ethics and integrity	1	1	1h30			22h30	2h30	40%	60%
Total semester 2		30	17	13h30	07h30	6h00	382h30			

Semester3Master:ThermalConversion

Unit Teaching	Materials Titled	Credits	Coefficient	Hourly volume weekly			Volume Hourly Semi-annual	Work Complementary inConsultation (15 weeks)	Evaluation method	
				Course	TD	TP			Control Continuous	Exam
Fundamental EU Code: UEF 2.1.1 Credits: 10 Coefficients: 5	Thermal conversion Solar – Theory, Systems and Performance	4	2	1h30	1h30		45h00	55h00	40%	60%
	Solar Concentration Conversion Theory and Systems	4	2	1h30	1h30		45h00	55h00	40%	60%
	Housing and Thermal Inertia	2	1	1h30			22h30	27h30	40%	60%
Fundamental EU Code: UEF 2.1.2 Credits: 8 Coefficients: 4	Wind Energy Conversion and systems	4	2	1h30	1h30		45h00	55h00	40%	60%
	Low-level applications temperatures	4	2	1h30	1h30		45h00	55h00	40%	60%
Methodological UEM Code: UEM 2.1 Credits: 8 Coefficients: 4	Hydrogen production technology and fuel cell	5	2	1h30	1h30	1h00	60h00	82h30	40% (20%TD+20%TP)	60%
	Mathematical optimization	3	2	1h30 min		1h30	45h00	55h00	40%	60%
UETransversale Code: UET 2.1 Credits: 3 Coefficients: 3	Reverse engineering	2	2	1h30	1h30 Workshop		45h00	5h00	40%	60%
	Documentary research and dissertation design	1	1	1h30			22h30	2h30		100%
Totalsemester3		30	17	13h30	7h30	4h00	375h00			

Semester4Master: Thermal Conversion

Final Year Project

A mandatory thesis to be prepared by students preparing a master's degree in order to demonstrate their competence as a professional engineer. Topics are determined and assigned to candidates by the department's scientific committee.

	VHS	Coefficients	Credits
Final Year Project	205h00	15	22
Company internship	120:00	2	8
Total Semester 4	375h00	17	30

Overall summary of the training:

EU VH	UEF	UEM	UED	UET	Total
Course	72h30	12:30	9:00 PM	4:30 PM	12:30 PM
TD	52h30	4:30	0	-	57h00
TP	0	47h00	0	-	47h00
Personal work	250h00	64 hours	21	0	335h00
Total	375h00	128h00	42h00	4:30 PM	561h30
Credits					
% in credits for each EU	66.8%	22.8%	7.53%	2.87%	100%

Basket: Discovery (S1, S2 and S3) of your choice

- Energy Audit
- Political, economic and social aspects of renewable energies
- Management and Management of RE projects
- Regulations and Standards of the ER
- Power optimization and control techniques
- Communication and project management
- Legislation on renewable energy
- Others…