

## CURRICULUM

valid beginning with academic year 2023 - 2024

<i>Master study program- professional</i>	<b>RESPONSIBLE CONSUMPTION AND PRODUCTION</b>
<i>Fundamental field</i>	<b>ENGINEERING SCIENCES</b>
<i>Field of master studies</i>	<b>INDUSTRIAL ENGINEERING</b>
<i>Academic studies duration</i>	<b>2 YEARS</b>
<i>Form of education: full-time (F)/ part-time (IFR)/ distance (ID)</i>	<b>full-time (F)</b>

*The general objective of the study program is:* to provide students with the cognitive and behavioral skills needed to become specialists in the field of industrial systems in an increasingly complex and dynamic economic environment in the perspective of sustainable development and to develop the capacity for scientific research based on modern, computer-assisted concepts, in the view of responsible consumption and production. Graduates of this specialization acquire the necessary training for the design, operation and maintenance of systems used in various industries, in enterprises and companies, in the conditions of environment protection and use of clean energy.

*Specific objectives of the study program:* providing the following learning outcomes:

**Knowledge:**

- The graduate can identify the modern concepts, models and methods that underlie the operation of industrial systems in the context of sustainable development.
- The graduate has knowledge of energy efficiency of industrial systems.
- The graduate has knowledge of sustainable transport systems.
- The graduate is able to design, adjust and operate environmentally friendly industrial installations, equipment and systems.

**Skills:**

- The graduate can apply the techniques of modelling, simulation and management of industrial processes.
- The graduate is able to implement responsible consumption and production patterns, in line with the European perspective on them.
- The graduate is able to apply the complementary skills of management and economic analysis, of life cycle assessment.

**Responsibility and Autonomy:**

- The graduate has decision-making and coordination of groups capacity in order to develop and implement technical solutions.
- The graduate possesses communication skills in a multicultural and interdisciplinary environment.
- The graduate is capable of adaptability to technological progress in the field, desire for self-improvement, ability to learn and practical application of newly acquired knowledge.

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Fundamental field: **ENGINEERING SCIENCES**

Field of master studies: **INDUSTRIAL ENGINEERING**

Master studies program: **RESPONSIBLE CONSUMPTION AND PRODUCTION**

MASTER STUDIES - professional - day courses, 2 years x 2 sem./year x 14 weeks./sem. x 26 hours/week., 3 weeks session/sem.

**MINISTRY OF EDUCATION**

**CURRICULUM**

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Nr. crt.	YEAR I		Subject code	Subj. type	Semester 1				Semester 2				Credit pts.	Ei, Ci	Nr. hours/subject			Individual study hours	Total nr. hours/subject
	Subject				C	S	L	P	C	S	L	P			Course	Appl.	Total		
1	Green Design and Manufacturing		2RCPS02	DSin	3	2		2					7	E1	42	56	98	46	144
2	Unconventional Materials and Technologies		2RCPS03	DSin	2		3						6	E1	28	42	70	39	109
3	Energetic and Environmental Resources		2RCPA03	DA	3	2							6	E1	42	28	70	39	109
4	Elective subject OP 11		2RCPC04	DC	3	2							6	E1	42	28	70	39	109
5	Ethics and Academic Integrity		2RCPC05	DC	2	2							5	C1	28	28	56	33	89
6	Consumption and Production Patterns		2RCPA06	DA					3	2			6	E2	42	28	70	39	109
7	Energy Efficiency of Industrial Processes		2RCPA07	DA					2		2	2	6	E2	28	56	84	39	123
8	Sustainable Development in Industry		2RCPS08	DSin					2	2			6	E2	28	28	56	39	95
9	Elective subject OP 12		2RCPA09	DA					2		3		6	E2	28	42	70	39	109
10	Practical training 1 (84 hours)		2RCPA10	DA									6	C2	0	84	84	39	123
<b>TOTAL year I</b>					<b>13</b>	<b>8</b>	<b>3</b>	<b>2</b>	<b>9</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>60</b>		<b>308</b>	<b>420</b>	<b>728</b>	<b>391</b>	<b>1119</b>
					<b>26</b>				<b>20+6 Training</b>										
Nr. crt.	YEAR II		Subject code	Subj. type	Semester 3				Semester 4				Credit pts.	Ei, Ci	Nr. hours/subject			Individual study hours	Total nr. hours/subject
	Subject				C	S	L	P	C	S	L	P			Course	Appl.	Total		
11	Modelling and Simulation of Electromechanical Systems □		2RCPA11	DA	3		1	1					6	E3	42	28	70	39	109
12	Life Cycle Assessment		2RCPS12	Dsin	3		2						6	E3	42	28	70	39	109
13	Sustainable Transportation Systems		2RCPA13	DA	3		2						6	E3	42	28	70	39	109
14	Elective subject OP 21		2RCPS14	DSin	3		2						6	E3	42	28	70	39	109
15	Speciality training 1 (84 hours)		2RCPA15	DA									6	C3	0	84	84	39	123
16	Ecological Reconstruction of Degraded Lands		2RCPA16	DA					3	2			7	E4	42	28	70	46	116
17	Green Accounting		2RCPC17	DC					3	2			7	E4	42	28	70	46	116
18	Speciality training 2 (84 hours)		2RCPA18	DA									6	C4	0	84	84	39	123
19	Practical training for dissertation (140 hours)		2RCPA19	DA									10	C4	0	140	140	65	205
<b>TOTAL year II</b>					<b>12</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>60</b>		<b>252</b>	<b>476</b>	<b>728</b>	<b>391</b>	<b>1119</b>
					<b>20+6 Training</b>				<b>10+16 Training</b>										

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ELECTIVE SUBJECTS				
Nr. crt.	Subject code	Academic year	Name of subject	
4	OP 11	I	Romanian and European Administrative Structures, Mechanisms and Institutions	Sustainable Human Resource Management <input type="checkbox"/>
9	OP 12	I	Waste and Hazardous Substances	Industrial Waste Processing
14	OP 21	II	Clean Energy	Smart Technologies Applied in Industrial Engineering

FREE ELECTIVE SUBJECTS														
Nr. crt.	Subject code	Academic year	Name of subject	Sem. I			Sem. II			Crđ. pts.	Ei Ci	Nr. hours/subject		
				C	S	L	C	S	L			Cours	Appl.	Total
20	F11	I	Technical English	2	2					3	C1	28	28	56
21	F13	I	Numerical Modelling of Thermal Processes				2		2	3	C2	28	28	56
22	F21	II	Continuous Process Management Systems	2	2					3	C3	28	28	56
23	F22	II	Research Techniques in Industrial Engineering				2	2		3	C4	28	28	56

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		Semester I		Semester II		Semester III		Semester IV		Total first year		Total second year		Total study cycle		
		Hours	Credit points	Hours	Credit points	Hours	Credit points	Hours	Credit points	Hours	Credit points	Hours	Credit points	Hours	Weight % hours / total cycle hours	Credit points
Total hours in Curriculum		364	30	364	30	364	30	364	30	728	60	728	60	1456		120
Subject type	Synthesis subjects	168	13	56	6	140	12	0	0	224	19	140	12	364	25,00	31
	In-depth/advanced knowledge subjects	70	6	308	24	224	18	294	23	378	30	518	41	896	61,54	71
	Complementary subjects	126	11	0	0	0	0	70	7	126	11	70	7	196	13,46	18
Fully/partially assisted hours	Fully assisted hours	364	30	280	24	280	24	140	14	644	54	420	38	1064	73,08	92
	Partially assisted hours	0	0	84	6	84	6	224	16	84	6	308	22	392	26,92	28
Individual study hours		196		195		195		196		391		391		782		
Total hours of activities / week.	14 weeks/sem; 28 weeks /year; 56 weeks /cycle	40,00		39,93		39,93		40,00		39,96		39,96		39,96		39,96 <40
Lecture hours														560		
Application hours	- Fully assisted													504		
Lecture / Application hours														1,11		
Practical training hours / weight														252	17,31	
Practical training for dissertation hours / weight														140	9,62	

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