

**“GHEORGHE ASACHI” TECHNICAL UNIVERSITY OF IAȘI**  
**”CRISTOFOR SIMIONESCU” FACULTY OF CHEMICAL ENGINEERING AND ENVIRONMENTAL PROTECTION**

Field of study: *Chemical Engineering*

Programme of study: *Food Chemistry and Biochemical Technologies*

Title of the graduated: *Engineer*

Period of studies: **4 years**

Learning program: *full-time*

# CURRICULUM

## 1<sup>st</sup> year of study

No	Discipline Name	Discipline Code	No. hours for individual study	1 <sup>st</sup> Semester (14 weeks)						2 <sup>nd</sup> Semester (14 weeks)									
				No.hours/ week/ discipline				Exams.	ECTS	No.hours/ week/ discipline				Exams.	ECTS				
				C	S	L	P			C	S	L	P						
<b>ID</b>	101	Mathematical Analysis and Linear Algebra	FD ID	69	2	2	-	-	E	5									
	102	Physics 1	FD ID	69	2	-	2	-	E	5									
	103	Applied Informatics 1	FD ID	80	2	-	3	-	C	6									
	104	Inorganic Chemistry	FD ID	113	4	-	4	-	E	9									
	105	Numerical Methods and Mathematical Statistics	FD ID	44							2	2	-	-	E	4			
	106	Physics 2	FD ID	69							2	-	2	-	E	5			
	107	Analytical Chemistry 1	FD ID	91							2	-	4		E	7			
	108	Computer Assisted Graphics	FD ID	33							1	-	2	-	C	3			
	109	Applied Informatics 2	FD ID	58							1	-	2	-	E	4			
	110	Physical Trening	CD ID	22	-	-	1	-	-	-	-	-	1	-	A/R	2			
<b>OD</b>	111	1. English Language	CD OD	22+22	-	2	-	-	PE	2	-	2	-	-	PE	2			
		2. French Language																	
		3. German Language																	
	112	1. Coordinative Compounds Chemistry	DID OD	33							2	-	1	-	C	3			
		2. Bio-inorganic Chemistry																	
113	1. Culture, Civilization and European Institutions	CD OD	47	2	-	-	-	C	3										
	2. Science Communication																		
<b>FCD</b>	114	Fundamental Concepts in Chemistry	FD FCD	22	2	-	-	-	PE	2									
	115	Fundamental Concepts in Mathematics	FD FCD	22	2	-	-	-	PE	2									
	116	European Integration	CD FCD	22							2	-	-	-	PE	2			
	117	Comunication Ethics	CD FCD	22							2	-	-	-	PE	2			
				Total hours on week, total tests and credits on semester, at <b>ID</b> (imposed disciplines) and <b>OD</b> (optional disciplines)				12	4	10	-	3E 2C 1PE	30	10	4	12	-	4E 2C 1PE 1A/R	30

Legende: ID – imposed discipline; OD – optional discipline; FCD – free choice disciplines; GE – graduation exam;  
 FD – fundamental discipline; CD – complementary discipline; DID – discipline in the field studies; SD – specialization discipline;  
 C – course; S – seminar; L – laboratory; P – project; E – exam; C – colloquium; PE – periodical evaluation; A/R – admitted rejected.

**RECTOR,**  
 Professor Dan CAȘCAVAL, Ph.D. Eng.

**DEAN,**  
 Professor Nicolae Hurduc, Ph.D.Eng.

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## 2<sup>nd</sup> year of study

No	Discipline Name	Discipline Code	No. hours for individual study	3 <sup>rd</sup> Semester (14 weeks)						4 <sup>th</sup> Semester (14 weeks)						
				No.hours/ week/ discipline				Exams.	ECTS	No.hours/ week/ discipline				Exams.	ECTS	
				C	S	L	P			C	S	L	P			
<b>ID</b>	201	Organic Chemistry 1	DID ID	91	3	-	3	-	E	7						
	202	Analytical Chemistry 2	DID ID	91	2	-	4	-	E	7						
	203	Physical Chemistry 1: Thermodynamics	DID ID	80	3	-	2	-	E	6						
	204	Electrotechnics	DID ID	58	2	-	1	-	C	4						
	205	Organic Chemistry 2	DID ID	52							4	-	3	-	E	6
	206	Transfer Phenomena, Unit Operation and Equipments 1	DID ID	55							3	-	2	-	E	5
	207	Physical Chemistry 2: Kinetics	DID ID	44							2	-	2	-	E	4
	208	Electrochemistry and Corrosion	DID ID	33							2	-	1	-	E	3
	209	Fundamentals in Mechanical Engineering	DID ID	22							2	-	-	-	C	2
	210	Fundamentals in Mechanical Engineering – Project Design	DID ID	47							-	-	-	2	PE	3
	211	Physical Training	CD ID	22	-	-	1	-	-	-	-	-	1	-	A/R	2
	212	Practical Trening	DID ID	0							3 weeks * 30				C	3
<b>OD</b>	213	1. English Language	CD OD	22+22	-	2	-	-	PE	2	-	2	-	-	PE	2
		2. French Language														
		3. German Language														
	214	1. Materials Science 2. Industrial Catalysis and Catalysts	DID OD	58	2	-	1	-	C	4						
<b>FCD</b>	215	Discoveries of Concepts in Chemistry and Chemical Engineering	CD FCD	22	2	-	-	-	PE	2						
	216	Stimulating Creativity	CD FCD	22							2	-	-	-	PE	2
	217	Work Policies, Healt and Safety in the Workplace	CD FCD	22	2	-	-	-	PE	2						
	218	Safe Operation of Chemical Plants	DID FCD	22							2	-	-	-	PE	2
	219	Reaction Mechanisms in Organic Chemistry	SD FCD	22							2	-	-	-	PE	2
	220	Educational Elements of Innovation	SD FCD	22							2	-	-	-	PE	2
Total hours on week, total tests and credits on semester, at <b>ID</b> (imposed disciplines) and <b>OD</b> (optional disciplines)				12	2	12	-	3E 2C 1PE	30	13	2	9	2	4E 2C 2PE	30	

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## 3<sup>rd</sup> year of study

No	Discipline Name	Discipline Code	No. hours for individual study	5 <sup>th</sup> Semester (14 weeks)						6 <sup>th</sup> Semester (14 weeks)					
				No.hours/ week/ discipline				Exams.	ECTS	No.hours/ week/ discipline				Exams.	ECTS
				C	S	L	P			C	S	L	P		
<b>ID</b>	301 Physical Chemistry 3: Polydispersed Systems	DID ID	69	2	-	2	-	<b>E</b>	<b>5</b>						
	302 Transfer Phenomena, Unit Operations and Equipments 2	DID ID	69	2	-	2	-	<b>E</b>	<b>5</b>						
	303 Technological Processes Optimization	DID ID	58	2	1	-	-	<b>C</b>	<b>4</b>						
	304 Transfer Phenomena, Unit Operations and Equipments 3	DID ID	69							2	-	2	-	<b>E</b>	<b>4</b>
	305 Transfer Phenomena, Unit Operations and Equipments – Project Design	DID ID	47							-	-	-	2	<b>PE</b>	<b>3</b>
	306 Processes Automation in Chemical Industry	DID ID	55							3	-	2	-	<b>E</b>	<b>5</b>
	307 Surfactants <sup>*)</sup>	SD ID	33							2	-	1	-	<b>C</b>	<b>3</b>
	308 Food Microbiology <sup>*)</sup>	SD ID	55							3	-	2	-	<b>E</b>	<b>5</b>
	309 Biochemistry <sup>*)</sup>	SD ID	44							2	-	2	-	<b>E</b>	<b>4</b>
	310 Manufacturing Systems Management and Engineering	DID ID	55	3	1	-	1	<b>E</b>	<b>5</b>						
	311 Practical Trening	SD ID	0											3 weeks * 30	<b>C</b>
<b>OD</b>	312 1. Introduction in Biotechnology 2. Bioprocesses in Chemical Industry	DID OD	58	2	-	1	-	<b>C</b>	<b>4</b>						
	313 1. Analysis and Synthesis of Technological Processes 2. Fundamentals of Chemical Engineering	DID OD	55	3	-	2	-	<b>E</b>	<b>5</b>						
	314 1. Marketing 2. Industrial Economy 3. Economic Policies of the European Union	CD OD	22	2	-	-	-	<b>C</b>	<b>2</b>						
	315 1. Pollution Prevention and Environmental Protection 2. Environmental Management and Sustainable Development	SD OD	33							2	-	-	1	<b>C</b>	<b>3</b>
	316 Project Management and Scientific Communication	CD FCD	22	1	-	-	1	<b>PE</b>	<b>2</b>						
	317 Operational Management and Quality Systems	SD FCD	33	2	-	-	1	<b>PE</b>	<b>3</b>						
<b>FCD</b>	318 Materials and Corrosion Protection	DID FCD	33							2	-	1	-	<b>PE</b>	<b>3</b>
	319 Natural bioactive compounds	SD FCD	22							2	-	-	-	<b>PE</b>	<b>2</b>
	320 Entrepreneurship	CD FCD	47	2	-	-	-	<b>PE</b>	<b>3</b>						
	Total hours on week, total tests and credits on semester, at <b>ID</b> (imposed disciplines) and <b>OD</b> (optional disciplines)				16	2	7	1	<b>4E</b> <b>3C</b>	<b>30</b>	14	-	9	3	<b>4E</b> <b>3C</b> <b>1PE</b>

<sup>\*)</sup> Common courses with *Biochemical Engineering* programme of study.

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## 4<sup>th</sup> year of study

No	Discipline Name	Discipline Code	No. hours for individual study	7 <sup>th</sup> Semester (14 weeks)						8 <sup>th</sup> Semester (14 weeks)									
				No.hours/ week/ discipline				Exams.	ECTS	No.hours/ week/ discipline				Exams.	ECTS				
				C	S	L	P			C	S	L	P						
ID	401	Enzimology	SD ID	69	2	-	2	-	C	5									
	402	Engineering of Food Processes and Specific Equipments 1	SD ID	69	2	-	2	-	E	5									
	403	Fruit and Vegetable Processing	SD ID	55	3	-	2	-	E	5									
	404	Animal Products Processing	SD ID	55	3	-	2	-	E	5									
	405	Food Products Technology – Project Design	SD ID	72	-	-	-	2	PE	4									
	406	Additives for Food Processes	SD ID	33	2	-	1	-	C	3									
	407	Food Products Quality Control	SD ID	33	2	-	1	-	C	3									
	408	Engineering of Food Processes and Specific Equipments 2	SD ID	69							2	-	2	-	E	5			
	409	Engineering of Food Processes and Specific Equipments – Project Design	SD ID	72							-	-	-	2	PE	4			
	410	Bakery Products Technology	SD ID	69							2	-	2	-	E	5			
	411	Food Products Preservation	SD ID	33							2	-	1	-	E	3			
	412	Development and Finalising of Graduation Project	SD ID	16							-	-	-	6	PE	4			
	413	Practical Training for Graduation Project	SD ID	0							2 weeks * 30			C	2				
OD	414	1. Membrane Technology and Applications	SD OD	44															
		2. Soft and Alcoholic Beverages Technologies																	
		3. Dietetic Products and Nutrients																	
		4. Conditioning Techniques																	
	415	1. Packaging Techniques for Food Products	SD OD	33															
		2. Natural Extracts																	
		3. Modern Separation Methods for Homogeneous Mixtures																	
		4. Food Safety and Toxicology																	
FCD	416	Techniques for Protection of Cultural Heritage	SD FCD	22	2	-	-	-	PE	2									
	417	Structural Analysis in Organic Chemistry	SD FCD	33	2	-	1	-	PE	3									
	418	Chemical and Biochemical Sensors	SD FCD	22	2	-	-	-	PE	2									
GE		Graduation exam – Bachelor of Science Degree												E	10				
				Total hours on week, total tests and credits on semester, at ID (imposed disciplines) and OD (optional disciplines)				14	-	11	2	4E	30	10	-	8	8	4E	30
								26						26		2C		2PE	
																GE		10	

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