

ROMANIA
MINISTRY OF NATIONAL EDUCATION
‘VASILE ALECSANDRI’ UNIVERSITY OF BACAU
Faculty of Engineering
Calea Mărășești, Nr. 157, Bacău, 600115, Tel./Fax +40
234 580170
<http://inginerie.ub.ro>; e-mail: decaning@ub.ro



Field of Study: Chemical Engineering
Study Programme: Biochemical Engineering

2018-2019 academic year

CURRICULUM 1st year of study

No	Subject	Number of ECTS credits	Examination form	Semester
1.	Mathematical analysis	4	WO	1
2.	Linear algebra, analytic and differential geometry	4	WO	1
3.	Computer programming and programming languages 1	4	O	1
4.	Fundamentals of analytical chemistry	5	W	1
5.	Fundamentals of inorganic chemistry	5	W	1
6.	Elements of mechanical engineering	5	O	1
7.	Physical education and sports 1	1	P/F	1
8.	English for engineering 1/ French for engineering 1	2	O	1
9.	Special mathematics	3	WO	2
10.	Physics	4	WO	2
11.	Computer programming and programming languages 2	4	O	2
12.	Fundamentals of physical chemistry	4	W	2
13.	Fundamentals of organic chemistry	5	W	2
14.	Computer graphics	4	O	2
15.	General economics	3	O	2
16.	Physical education and sports 2	1	P/F	2
17.	English for engineering 2/ French for engineering 2	2	O	2

W- written exam

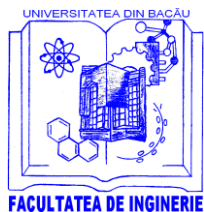
O – oral exam

WO- written and oral exam

P/F- pass/fail

Dean,
Prof. Ph.D.Eng. Valentin Zichil

Head of Department,
Lecturer Ph.D.Eng. Andrei Ionuț Simion



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2018-2019 academic year4

CURRICULUM
2nd year of study

No	Subject	Number of ECTS credits	Examination form	Semester
1.	Transport phenomena	6	W	3
2.	Organic chemistry	5	O	3
3.	Fundamentals of chemical engineering	4	O	3
4.	Applied physical and colloid chemistry	5	WO	3
5.	Biochemistry 1	5	W	3
6.	Physical education and sports 3	1	P/F	3
7.	Communication ethics	2	O	3
8.	English for engineering 3/ French for engineering 3	2	W	3
9.	Bioinorganic chemistry	4	W	4
10.	Electrochemistry and corrosion	4	O	4
11.	Operations and equipment in biochemical engineering 1	4	O	4
12.	Industrial microbiology	4	WO	4
13.	Biochemistry 2	4	WO	4
14.	Primary and secondary metabolites	4	WO	4
15.	English for engineering 4/ French for engineering 4	2	O	4
16.	Training (3 weeks x 30 hours)	4	O	4

W- written exam

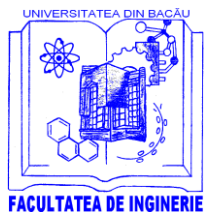
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2018-2019 academic year

CURRICULUM
3rd year of study

No	Subject	Number of ECTS credits	Examination form	Semester
1.	General biotechnologies	6	O	5
2.	Operations and equipment in biochemical engineering 2	7	W	5
3.	Instrumental analysis 1	6	WO	5
4.	Electrotechnics and electronics	5	W	5
5.	Conditioning of synthesis and biosynthesis products 1	6	W	5
6.	Instrumental analysis 2	4	O	6
7.	Management	3	O	6
8.	Industrial catalysis and catalysts	5	O	6
9.	Machinery and equipment in biochemical industry	4	W	6
10.	Food biotechnologies 1	3	W	6
11.	Enzymology	3	W	6
12.	Conditioning of synthesis and biosynthesis products 2	4	W	6
13.	Training (3 weeks x 30 hours)	4	O	6

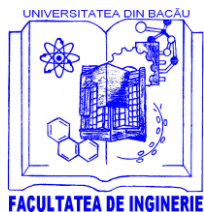
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2018-2019 academic year

CURRICULUM
4th year of study

No	Subject	Number of ECTS credits	Examination form	Semester
1.	Enzymatic and fermentative processes technology	4	WO	7
2.	Food biotechnologies 2	4	W	7
3.	Techniques for separation of organic compounds	4	W	7
4.	Pharmaceutical biotechnology	4	W	7
5.	Valorization technologies of natural products	4	WO	7
6.	Bioresources	4	O	7
7.	Pollution prevention and environmental protection	3	O	7
8.	Process design and optimization in biochemical industry – Project 1	3	O	7
9.	Bioreactors	3	WO	8
10.	Membrane technology and applications	3	O	8
11.	Control and quality assurance of bioprocesses	3	W	8
12.	Chemical and biochemical sensors	2	W	8
13.	Biomaterials	3	W	8
14.	Entrepreneurship	2	O	8
15.	Preparing and writing the Bachelor final project – Project 2	4	O	8
16.	Training for preparing and writing the Bachelor final project (2 weeks x 30 hours)	10	O	8

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