

# University "Prof. Dr. Asen Zlatarov" - Burgas

I confirm!

Rector:

(prof. Dr. Hr. Bozov, MD)

## Curriculum for acquiring higher education in the specialty "Chemical Engineering" Educational and qualification degree "Bachelor"

Field of higher education: 5."Technical Sciences"  
Professional field: 5.10."Chemical technologies"  
Professional qualification: "Chemical Engineer"  
Term of study: 4 years (8 semesters)  
Form of education: full-time

Approved by the F/FTS Protocol №  
Approved by the AC Protocol №

### I. STUDY TIME FUND

C o u r s e	Auditorium	Exam sessions	PRACTICES:			State Exam	Holidays	Total
			Educational	Educational and production	Specializing			
	weeks	weeks	weeks	weeks	weeks	weeks	weeks	weeks
I.	.30	11					11	52
II.	30	11					11	52
III.	30	11		3			8	52
IV.	30	11				9	2	52

### II. CURRICULUM PARAMETERS

1.	Auditorial, h.	(A)	2260	%
	Lectures	(L)	1020	45,1
	Seminars	(S)	250	11,1
	Practicals	(P)	990	43,8
	Physical Training and Sports		60	hours

Practices		number	hours
Educational	(e)	0	0
Educational and production	(ep)	1	40
Specializing	(sp)	0	0

2.	Subjects	number	hours	%
	Obligatory (o)	37	2050	87,2
	Elective (e)	4	210	8,9
	Facultative (f)	2	90	3,8

Extracurricular, h (E) 4940 h.  
Auditorial/ = Extracurricular, h (A/E) 45,7 %

	number	hours
Course projects (cp)	4	180
Course works (cw)	1	45

3. Forms of control (FC):	Exams (E) 28	Current Assessments (CA) 14	Verifications (V) 2
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4. Form of completion:	State Exam (SE)
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5. Schedule of the educational process: Approved annually by the Academic Council.
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### III. PLAN OF THE EDUCATIONAL PROCESS

First Semester													
№	Subject	Type	L		S		P		A	E	A/E	FC	Credits
			h.	Type	h.	Type	h.	h.	h.	h.	%		
1.	Calculus, Part I	O	30		30				60	120	50.0	E	6
2.	Inorganic Chemistry	O	45		15		30	90	180	50.0	E	9	
3.	Modern Physics	O	30				30	60	120	50.0	E	6	
4.	Engineering Drawing	O	15				30	45	105	42.9	CA	5	
5.	Foreign Language of choice from List 1	E			45			45	75	60.0	CA	4	
6.	Facultative Subject from List 3	F									CA		
7.	Physical Training and Sports	O									V		
8.													
9.													
10.													
11.													
Total:			120		90		90	300	600	50.0			30
Second Semester													
№	Subject	Type	L		S		P		A	E	A/E	FC	Credits
			h.	Type	h.	Type	h.	h.	h.	h.	%		
1.	Calculus, Part II	O	30		30				60	120	50.0	E	6
2.	Organic Chemistry	O	45				30	75	165	63.6	E	8	
3.	Information Technology	O	30				30	60	120	50.0	E	6	
4.	Electrical Engineering	O	30				30	60	120	50.0	CA	6	
5.	Foreign Language of choice from List 1	E			45			45	75	60.0	CA	4	
6.	Facultative Subject from List 3	F									CA		
7.	Physical Training and Sports	O									V		
8.													
9.													
10.													
11.													
Total:			135		75		90	300	600	50.0			30
Third Semester													
№	Subject	Type	L		S		P		A	E	A/E	FC	Credits
			h.	Type	h.	Type	h.	h.	h.	h.	%		
1.	Analytical Chemistry	O	30				30	60	120	50.0	E	6	
2.	Chemical Engineering Thermodynamics, Part I	O	30				30	60	120	50.0	E	6	
3.	Introduction to Chemical Engineering	O					30	30	60	50.0	CA	3	
4.	Fluid Mechanics 1	O	30	cw	10		35	75	165	45.5	E	8	
5.	Mechanical Engineering	O	30				30	60	60	100.0	E	4	
6.	Computer Applications in Chemical Engineering 1	O					30	30	60	50.0	CA	3	
7.													
8.													
9.													
10.													
11.													
Total:			120		10		185	315	585	53.8			30
Fourth Semester													
№	Subject	Type	L		S		P		A	E	A/E	FC	Credits
			h.	Type	h.	Type	h.	h.	h.	h.	%		
1.	Chemical Engineering Thermodynamics, Part II	O	30				30	60	120	50.0	E	6	
2.	Fluid Mechanics 2	O	30	cp	15		30	75	165	45.5	E	8	
3.	Materials Engineering	O	45				30	75	165	45.5	E	8	
4.	Applied Electrochemistry and Corrosion	O	30				15	45	105	42.9	E	5	
5.	Computer Applications in Chemical Engineering 2	O					30	30	60	50.0	CA	3	
6.													
7.													
8.													
9.													
10.													
11.													
Total:			135		15		135	285	615	46.3			30
Fifth Semester													
№	Subject	Type	L		S		P		A	E	A/E	FC	Credits
			h.	Type	h.	Type	h.	h.	h.	h.	%		
1.	Heat Transfer and Applications	O	30	cp	15		30	75	165	45.5	E	8	
2.	Inorganic Technology	O	45				45	90	210	42.9	E	10	
3.	Water Treatment and Desalination	O	30				15	45	105	42.9	CA	5	
4.	Modelling of Chemical Technology Systems	O	30				30	60	150	40.0	E	7	
5.													
6.													



7.													
8.													
9.													
10.													
11.													
Total:			135	15	120	270	630	42.9				30	
<b>Sixth Semester</b>													
No	Subject	Type	h.	Type	h.	Type	h.	h.	h.	A/E	%	FC	Credits
1.	Mass Transfer and Separation Operations 1	O	30	cp	15		30	75	165	45.5		E	8
2.	High Temperature Industries	O	30				30	60	150	40.0		E	7
3.	Organic Technology	O	30				30	60	150	40.0		E	7
4.	Educational manufacturing practice	O				ep	40	40	80	50.0		E	4
5.	Economics of Industry	O	30		15			45	75	60.0		E	4
6.													
7.													
8.													
9.													
10.													
11.													
Total:			120	30	130	280	620	45.2					30
<b>Seventh semester</b>													
No	Subject	Type	h.	Type	h.	Type	h.	h.	h.	A/E	%	FC	Credits
1.	Mass Transfer and Separation Operations 2	O	30	cp	15		30	75	195	38.5		E	9
2.	Chemical Reactor and Vessel Design	O	45				45	90	210	42.9		E	10
3.	Environmental Pollution	O	30				15	45	105	42.9		CA	5
4.	Elective Subject from List 2	E	30				30	60	120	50.0		CA	6
5.													
6.													
7.													
8.													
9.													
10.													
11.													
Total:			135	15	120	270	630	42.9					30
<b>Eighth Semester</b>													
No	Subject	Type	h.	Type	h.	Type	h.	h.	h.	A/E	%	FC	Credits
1.	Petroleum Refining and Processing	O	30				45	75	105	71.4		E	6
2.	Technical Safety and Disaster Protection	O	30				15	45	75	42.9		CA	4
3.	Process Control	O	30				30	60	90	100.0		E	5
4.	Elective Subject from List 4	E	30				30	60	90	100.0		CA	5
5.													
6.													
7.													
8.													
9.													
10.													
11.	State Exam	O							300			E	10
Total:			120			120	240	660	36.4				30

**Lists of Facultative and Elective Subjects**

List 1 - Elective Subjects	
1.	English
2.	German
3.	French or Russian
4.	General Bulgarian Language
5.	

List 2 - Elective Subjects	
1.	Nanomaterials
2.	Biochemical Industries
3.	Process and Plant Design
4.	
5.	



List 3 - Facultative Subjects	
1.	English
2.	German
3.	French or Russian
4.	General Bulgarian Language
5.	

List 4 - Elective Subjects	
1.	Petrochemicals Engineering
2.	Energy from Biomass
3.	Green Technology
4.	
5.	

List 5	
1.	
2.	
3.	
4.	
5.	

List 6	
1.	
2.	
3.	
4.	
5.	

**Note 1.** General Bulgarian Language is studied as a Facultative discipline in I and II semesters with a 90-hour schedule 3 credit each. The total 90-hour schedule is outside the maximum schedule for acquiring the professional qualification.

**Note 2.** The discipline "Physical Training and Sport" is studied compulsorily in I and II semesters with a 30-hour schedule, 1 credit each. The total hours of 60-hour schedule is outside the maximum schedule for acquiring the Bachelor's degree. Training in the discipline ends with verification.

**Note 3.** The Facultative discipline according to List 3 is studied with 45-hour schedule, and 3 credits are awarded. The total 90-hour schedule is outside the maximum schedule for acquiring the professional qualification. Training in the discipline ends with a current assessment.

Approved by the FC Protocol №

Approved by the AC Protocol № 18/05.06.2024