Burgas State University "Prof. Dr. Assen Zlatarov"

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 FC FTS Protocol № 26 / 15.04.2025.
Approved by the AC Protocol № 36 / 29.04.2025

I. STUDY TIME FUND

Course	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		2			9	52
IV.	30	11				9	2	52

II. CURRICULUM PARAMETERS

1.

Auditorial, h.		(A)	2245	%
Lectures		(L)	1035	46.1
Seminars		(S)	260	11.6
Practicals		(P)	950	42.3
Physical Education and Sport			60	hours

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

Extracurricular, h (E) 4955 h.
Auditorial/ = Extracurricular, h (A/E) 45.3 %

2.

Subjects		number	hours	%
Obligatory	(o)	37	2065	88.4
Elective	(e)	4	180	7.7
Facultative	(f)	2	90	3.9

		number	hours
Course projects	(cp)	6	255
Course works	(cw)	0	0

3. **Forms of control (FC):** Exams (E) 27 | Current Assessments (CA) 16 | Verifications (V) 0

4. **Form of completion:** **State Exam (SE)**

5. **Schedule of the educational process: Approved annually by the Academic Council.**

III. PLAN OF THE EDUCATIONAL PROCESS

First Semester

№	Subject	Type	L h.	S Type	S h.	P Type	P h.	A h.	E h.	A/E %	FC	Credits
1.	Calculus, Part I	O	30		30			60	150	40.0	E	7
2.	Inorganic Chemistry	O	45		15		30	90	210	42.9	E	10
3.	Fundamentals of Engineering Calculations	O					30	30	90	33.3	E	3
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	5
6.	Facultative Subject from List 3	F									CA	
7.	Physical Education and Sport	O									CA	
8.												
9.												
	Total:		90		90		90	270	630	42.9		30

Second Semester

№	Subject	Type	L h.	S Type	S h.	P Type	P h.	A h.	E h.	A/E %	FC	Credits
1.	Calculus, Part II	O	30		30			60	120	50.0	E	6
2.	Modern Physics	O	30				30	60	120	50.0	E	6
3.	Organic Chemistry	O	45				30	75	165	45.5	E	8
4.	Information Technology	O	30				30	60	120	50.0	E	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 Education and Sport	O									CA	
8.												
9.												
	Total:		135		75		90	300	600	50.0		30

Third Semester

№	Subject	Type	L h.	S Type	S h.	P Type	P h.	A h.	E h.	A/E %	FC	Credits
1.	Applied Electrical Engineering and Electronics	O	30				30	60	120	50.0	CA	6
2.	Analytical Chemistry	O	30				30	60	120	50.0	E	6
3.	Physical Chemistry Part I	O	30				30	60	150	40.0	E	7
4.	Engineering Mechanics	O	30				30	60	120	50.0	E	6
5.	Introduction to AUTOCAD	O					45	45	105	42.9	CA	5
6.												
7.												
	Total:		120				165	285	615	46.3		30

Fourth Semester

№	Subject	Type	L h.	S Type	S h.	P Type	P h.	A h.	E h.	A/E %	FC	Credits
1.	Fluid Mechanics 1	O	45				45	90	240	37.5	E	10
2.	Modern analysis methods	O	30				30	60	150	40.0	E	7
3.	Physical Chemistry Part II	O	30				30	60	150	40.0	E	7
4.	Fundamentals of chemical technology	O	30				15	45	105	42.9	E	6
5.												
6.												
	Total:		135				120	255	645	39.5		30

Fifth Semester

№	Subject	Type	L h.	S Type	S h.	P Type	P h.	A h.	E h.	A/E %	FC	Credits
1.	Chemical Engineering Thermodynamics	O	30				30	60	150	40.0	CA	7
2.	Physicochemical properties of fluids	O					30	30	60	50.0	CA	3
3.	Fluid Mechanics 2	O	45	cp	10		35	90	210	42.9	E	10
4.	Mathem. modeling and optimization of chemical technological processes	O	30				30	60	120	50.0	E	7
5.	Technical Mechanics - Course Project (Machine Elements)	O		cp	10		20	30	90	33.3	CA	3
6.												
7.												
	Total:		105		20		145	270	630	42.9		30

Sixth Semester

№	Subject	Type	L h.	S Type	S h.	P Type	P h.	A h.	E h.	A/E %	FC	Credits
1.	Measuring equipment and automation	O	30				15	45	75	60.0	E	4
2.	Heat Transfer and Applications	O	45	cp	15		30	90	180	50.0	E	9
3.	Mass Transfer and Separation Operations 1	O	45	cp	15		30	90	180	50.0	E	9
4.	Educational manufacturing practice	O				ep	40	40	80	50.0	E	4
5.	Industrial Ecology	O	30				15	45	75	60.0	CA	4
6.												

7.												
	Total:		150		30		130	310	590	52.5		30
	Seventh semester		L		S		P	A	E	A/E	FC	Credits
№	Subject	Type	h.	Type	h.	Type	h.	h.	h.	%		
1.	Mass Transfer and Separation Operations 2	O	45	cp	15		30	90	210	42.9	E	10
2.	Chemical Reactor and Vessel Design	O	45	cp	15		30	90	210	42.9	E	10
3.	Technical Safety and Disaster Protection	O	30				15	45	105	42.9	CA	5
4.	Elective Subject from List 2	E	30				15	45	105	42.9	CA	5
5.												
6.												
	Total:		150		30		90	270	630	42.9		30
	Eighth Semester		L		S		P	A	E	A/E	FC	Credits
№	Subject	Type	h.	Type	h.	Type	h.	h.	h.	%		
1.	Economics of Industry	O	30		15			45	45	100.0	E	3
2.	Applied Software in Chemistry Engineering	O	30				45	75	105	71.4	E	6
3.	Machines and Apparatus in Chem. Industries	O	30				30	60	60	100.0	E	4
4.	Fundamentals of automated design of chemical plants	O	30				30	60	60	100.0	E	4
5.	Elective Subject from List 4	E	30				15	45	45	100.0	CA	3
6.												
7.												
10.												
11.	State Exam	3							300		E	10
	Total:		150		15		120	285	615	46.3		30

Lists of Facultative and Elective Subjects

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

	List 2 - Elective Subjects
1.	Refrigeration equipment
2.	Treatment of waste technological streams
3.	
4.	

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

	List 4 - Elective Subjects
1.	Processes and apparatus in the food industry
2.	Nanotechnology in Chemical Engineering
3.	
4.	

	List 5
1.	
2.	
3.	
4.	

	List 6
1.	
2.	
3.	
4.	

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 Education and Sports" is studied compulsorily in the I and II semesters for 30 hours per semester. The total number of hours of 60 hours, according to the Regulations for the Implementation of the Physical Education and Sports Act, Art. 36(1), is outside the specified number of hours for acquiring the Bachelor's degree. Two credits are awarded per semester and the form of control is a continuous assessment.
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.

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