

**CHEMICAL ENGINEERING PROGRAM**  
**CURRICULUM**  
**FIRST YEAR**

I Semester (30 ECTS)					
Course Code	Course Name	Hours	ECTS	Category	Prerequisite
ENGL 1101	English I	3	6	ECS	
CHEM 1101	General Chemistry I	3	6	BS	
LAB 1101	Introduction To Laboratory Safety & Hazardous Materials	2	4	BS	
LAB 1102	General Chemistry Laboratory	2	4	BS	
PHYS 1101	Engineering Physics I	3	5	BS	
MATH 1101	Calculus For Engineers I	3	5	MT	

II Semester (30 ECTS)					
Course Code	Course Name	Hours	ECTS	Category	Prerequisite
ENGL 1201	English II	3	5	ECS	ENGL 1101
ENG 1201	Introduction to Engineering Design	3	5	OCE	
COMP 1201	Computers And Chemical Engineering	3	5	BS	
CHEM 1201	General Chemistry II	3	5	BS	CHEM 1101
MATH 1201	Calculus For Engineers II	3	5	MT	MATH 1101
PHYS 1201	Engineering Physics II	3	5	BS	PHYS 1101

**SECOND YEAR**

III Semester (30 ECTS)					
Course Code	Course Name	Hours	ECTS	Category	Prerequisite
CHEM 2101	Chemical Engineering Material & Energy Balances	3	5	OCE	CHEM 1201
CHEM 2102	Organic Chemistry I	3	6	BS	CHEM 1201
EXP 2101	Exposition And Argumentation	3	5	ECS	
MATH 2101	Elementary Differential Equations	3	5	MT	MATH 1201
ENGL 2101	Technical English I	3	5	ECS	
	Free Elective	3	4	ECS	

IV Semester (30 ECTS)					
Course Code	Course Name	Hours	ECTS	Category	Prerequisite
CHEM 2201	Professional Practice And Ethics	3	4	ECS	
CHEM 2202	Chemical Engineering Thermodynamics I	3	6	BS	CHEM 2101
ENGL 2201	Technical English II	3	5	ECS	ENGL 2101
COMP 2201	Numerical Computing in Chemical and Biochemical Engineering	3	5	MT	COMP 1201
	Technical Elective	3	5	ECE	
	Technical Elective	3	5	ECE	

### THIRD YEAR

V Semester (30 ECTS)					
Course Code	Course Name	Hours	ECTS	Category	Prerequisite
CHEM 3101	Chemical Engineering Thermodynamics II	3	5	BS	CHEM 2202
CHEM 3102	Fundamentals of Transport in Chemical and Biochemical Engineering	3	5	OCE	CHEM 2202
ENG 3101	Chemical Engineering Reactor Design	3	5	OCE	COMP 2201
ECON 3101	Principles Of Microeconomics and Macroeconomics	3	5	ECS	
CHEM 3103	Chemical Process Materials	3	5	OCE	PHYS 1101
	Technical Elective	3	5	ECE	

VI Semester (30 ECTS)					
Course Code	Course Name	Hours	ECTS	Category	Prerequisite
ENG 3201	Process Operations in Chemical and Biochemical Engineering	3	4	OCE	CHEM 3101
ENG 3202	Separations in Chemical and Biochemical Engineering	3	6	OCE	CHEM 3101
LAB 3201	Chemical Engineering Laboratory I	3	5	OCE	
MATH 3201	Applied Engineering Statistics	3	5	MT	MATH 1201
CHEM 3201	Chemical Process Design I	3	5	OCE	ENG 3101
	Technical Elective	3	5	ECE	

### FOURTH YEAR

VII Semester (30 ECTS)					
Course Code	Course Name	Hours	ECTS	Category	Prerequisite
ENG 4101	Chemical Engineering Process Dynamics And Control	3	5	OCE	ENG 3101
LAB 4101	Chemical Engineering Laboratory II	3	5	OCE	LAB 3201
CHEM 4101	Chemical Process Safety	3	5	OCE	ENG 3101
CHEM 4102	Chemical Process Design II	3	5	OCE	CHEM 3201
	Technical Elective	3	5	ECE	
	Technical Elective	3	5	ECE	

VIII Semester (30 ECTS)					
Course Code	Course Name	Hours	ECTS	Category	Prerequisite
	Practical training		21	PT	
	Bachelor Thesis with Final Presentation		9	BT	

Free Elective

- HIST 5001 Azerbaijan History

## Technical Electives

- ENG 5001 Molecular Chemical Engineering
- CHEM 5001 Biochemical Separations and Laboratory
- ENG 5002 Introduction to Biomedical Engineering
- CHEM 5002 Chemical Process Flowsheeting
- CHEM 5003 Biochemical Reactors and Laboratory
- CHEM 5004 Bioprocess Safety
- ENG 5003 Principles of Engineering Materials
- CHEM 5005 Structure and Properties of Polymers
- CHEM 5006 Introduction to Nanomaterials
- CHEM 5007 Principles of Environmental Monitoring
- CHEM 5008 Environmental Chemodynamics
- CHEM 5009 Chemical Technologies I
- CHEM 5010 Chemical Technologies II
- CHEM 5011 Chemical Technologies III
- ECON 5001 Energy Economics