Democratic and Popular Republic of Algeria
Ministry of Higher Education and Scientific Research
Ferhat Abbas - Setif 1 University

Faculty of Technology
Department of Process Engineering

Teaching program

State Engineer in Process Engineering

Specialty: Chemical Process Engineering

- **Semester 1**

Teaching Units	Module Title	Code	Credits	Coefficients	Weekly Hours			Semester Hours (15 weeks)	Assessment method	
					Lecture	TUT	PRC		Continuous assessment	Final exam
Fundamental TU Code: FTU 1.1.1 Credits: 12 Coefficients: 7	Analysis 1	IST 1.1	6	3	1h30	3h00		67h30	40%	60%
	Algebra 1	IST 1.2	4	2	1h30	1h30		45h00	40%	60%
Fundamental TU Code: FTU 1.1.2 Credits: 14 Coefficients: 8	Elements of Chemistry (Structure of Matter)	IST 1.3	7	4	1h30	3h00	1h30	90h00	40% (20% TUT + 20% PRC)	60%
	Elements of Mechanics (Physics 1)	IST 1.4	7	4	1h30	3h00	1h30	90h00	40% (20% TD + 20% TP)	60%
Methodological TU Code: MTU 1.1 Credits: 2 Coefficients: 2	Probability And Statistics	IST 1.5	2	2	1h30	1h30		45h00	40%	60%
	Computer Structure And Applications	IST 1.6	2	2			3h00	45h00	100%	
Transversal TU Code: TTU 1.1 Credits: 2 Coefficients: 2	Ethical And Deontological Dimension (The Foundations)	IST 1.7	1	1	1h30			10h30		100%
	Foreign Language 1 (French or English)	IST 1.8	1	1		1h30		10h30	100%	
Total Hourly Volume for Semester 1			**30**	**19**	**9h00**	**1h30**	**6h00**	**427h30**		

- **Semester 2**

Teaching Units	Module Title	Code	Credits	Coefficients	Weekly Hours			Semester Hours (15 weeks)	Assessment method	
					Lecture	Tutorial	PRC		Continuous assessment	Final exam
Fundamental TU Code: FTU 1.2.1 Credits: 10 Coefficients: 5	Analysis 2	IST 2.1	6	3	1h30	3h00		67h30	40%	60%
	Algebra 2	IST 2.2	4	2	1h30	1h30		45h00	40%	60%
Fundamental TU Code: FTU 1.2.2 Credits: 14 Coefficients: 8	Electricity And Magnetism (Physics 2)	IST 2.3	7	4	1h30	3h00	1h30	90h00	40% (20% TUT+ 20% PRC)	60%
	Thermodynamics	IST 2.4	7	4	1h30	3h00	1h30	90h00	40% (20% TUT+ 20% PRC)	60%
Methodological TU Code: MTU 1.2 Credits: 4 Coefficients: 4	Technical Drawing	IST 2.5	2	2			3h00	45h00	100%	
	Programming (Computer Science 2)	IST 2.6	2	2			3h00	45h00	100%	
Transversal TU Code: TTU 1.2 Credits: 1 Coefficients: 1	Foreign Language 2 (English)	IST 2.7	1	1		1h30		10h30	100%	
Exploratory TU Code: ETU 1.2 Credits: 1 Coefficients: 1	Engineering Professions	IST 2.8	1	1	1h30			10h30		100%
Total Hourly Volume for Semester 2			**30**	**19**	**7h30**	**12h00**	**9h00**	**427h30**		

- **Semester 3**

Teaching Units	Module Title	Code	Credits	Coefficients	Weekly Hours			Semester Hours (15 weeks)	Assessment method	
					Lecture	TUT	PRC		Continuous assessment	Final exam
Fundamental TU Code: FTU 2.1.1 Credits: 11 Coefficients: 6	Applied Mathematics	IST 3.1	6	3	1h30	3h 00		67h30	40%	60%
	Waves and Vibrations	IST 3.2	5	3	1h30	1h30	1h30	67h30	40% ((20% TUT+ 20% PRC)	60%
Fundamental TU Code: FTU 2.1.2 Credits: 15 Coefficients: 9	Fluid Mechanics	IST 3.3	5	3	1h30	1h30	1h30	67h30	40% (20% TUT+ 20% PRC)	60%
	Industrial Organic Chemistry	IST 3.4	5	3	1h30	1h30	1h30	67h30	40% (20% TUT+ 20% PRC)	60%
	Solution Chemistry	IST 3.5	5	3	1h30	1h30	1h30	67h30	40% (20% TUT+ 20% PRC)	60%
Methodological TU Code: MTU 2.1 Credits: 2 Coefficients: 2	Computer Science 3 (Matlab)	IST 3.6	2	2	1h30		1h30	45h00	40%	60%
Exploratory TU Code: ETU 2.2 Credits: 1 Coefficient: 1	Health, Safety, Environment – Industrial Installations	IST 3.7	1	1	1h30			10h30	100%	100%
Transversal TU Code: TTU 2.2 Credits: 1 Coefficients: 1	Technical English	IST 3.8	1	1		1h30		10h30	40%	60%
Total Hourly Volume for Semester 3			**30**	**19**	**10h30**	**10h30**	**7h30**	**427h30**		

- **Semester 4**

Teaching Units	Module titles	Code	Credits	Coefficients	Weekly Hours			Semester Hours (15 weeks)	Assessment method	
					Lecture	TUT	PRC		Continuous assessment	Final exam
Fundamental TU Code: FTU 2.2.1 Credits: 10 Coefficients: 5	Heat Transfer	IST 4.1	4	2	1h30	1h30		45h00	40%	60%
	Transfer of Matter	IST 4.2	4	2	1h30	1h30		45h00	40%	60%
	Momentum Transfer	IST 4.3	2	1	1h30			10h30		100%
Fundamental TU Code: FTU 2.2.2 Credits: 15 Coefficients: 9	Chemical Kinetics and Homogeneous Catalysis	IST 4.4	5	3	1h30	1h30	1h30	67h30	40% (20% TUT+ 20% PRC)	60%
	Chemical Thermodynamics	IST 4.5	4	2	1h30	1h30		45h00	40%	60%
	Industrial Mineral Chemistry	IST 4.6	5	3	1h30	1h30	1h30	67h30	40% (20% TUT+ 20% PRC)	60%
Methodological TU Code: MTU 2.2 Credits: 4 Coefficients: 4	Computer Science 3	IST 4.7	2	2	1h30		1h30	45h00	40%	60%
	Computer-Aided Design	IST 4.8	2	2	1h30		1h30	45h00	40%	60%
Exploratory TU Code: ETU 2.2 Credits: 1 Coefficient: 1	Introduction To Refining and Petrochemistry	IST 4.9	1	1	1h30			10h30		100%
Transversal TU Code: TTU 2.2 Credits: 1 Coefficients: 1	Information, Expression and Communication Techniques	IST 4.10	1	1		1h30		10h30	40%	60%

Total Hourly Volume for Semester 4	30	19	1h30	9h00	6h00	427h30		

- **Semester 5**

Teaching unit	Module Title	Code	Credits	Coefficients	Weekly Hours			Semester Hours (15 weeks)	Assessment method	
					Lecture	TUT	PRC		Continuous assessment	Final exam
Fundamental TU **Code: FTU 3.1.1** **Credits: 12** **Coefficients: 6**	Reactor Engineering I (Homogeneous Reactors)	IPC 5.1	4	2	1h30	1h30		45h00	40%	60%
	Physical Chemistry Of Interfaces	IPC 5.2	4	2	1h30	1h30		45h00	40%	60%
	Macroscopic Assessments	IPC 5.3	4	2	1h30	1h30		45h00	40%	60%
Fundamental TU **Code: FTU 3.1.2** **Credits: 7** **Coefficients: 4**	Electrochemistry	IPC 5.4	4	2	1h30	1h30		45h00	40%	60%
	Polymer Chemistry	IPC 5.5	3	2	1h30		1h30	45h00	40%	60%
Methodological TU **Code: MTU 3.1** **Credits: 10** **Coefficients: 8**	Numerical Analysis	IPC 5.6	4	3	1h30	1h30	1h30	67h30	40% (20% TUT+ 20% PRC)	60%
	Physical Methods of Analysis 1	IPC 5.7	2	2	1h30		1h30	45h00	40%	60%
	Practical Work in Physical Chemistry and Reactor Engineering	IPC 5.8	2	1			1h30	45h00	100%	
	Measuring Devices-Instrumentation	IPC 5.9	2	2	1h30		1h30	45h00	40%	60%
Transversal TU **Code: TTU 3.1** **Credits: 1** **Coefficients: 1**	Technical English Related to the Specialty	IPC 5.10	1	1	-	1h30	-	10h30	100%	
Total Hourly Volume			**30**	**19**	**12h00**	**9h00**	**7h30**	**427h30**		

- **Semester 6**

Teaching unit	Module Title	Code	Credits	Coefficients	Weekly Hours			Semester Hours (15 weeks)	Assessment method	
					Lecture	TUT	PRC		Continuous assessment	Final exam
Fundamental TU Code: FTU 3.2.1 Credits: 8 Coefficients: 4	Unit Operations I (Extraction, Absorption)	IPC 6.1	4	2	3h00	1h30		45h00	60%	40%
	Porous And Dispersed Media	IPC 6.2	4	2	1h30	1h30		45h00	40%	60%
Fundamental TU Code: FTU 3.2.2 Credits: 8 Coefficients: 4	Ovens And Boilers	IPC 6.3	4	2	1h30	1h30		45h00	40%	60%
	Thermodynamics Of Equilibria	IPC 6.4	4	2	1h30	1h30		45h00	40%	60%
Methodological TU Code: MTU 31 Credits: 12 Coefficients: 9	Design Of Industrial Process Diagrams	IPC 6.5	2	1	1h30			10:30		100%
	Basis Of Process Simulation	IPC 6.6	3	2	1h30		1h30	45h00	40%	60%
	Chemical Engineering Practical Work 2 (U.O, Reactors, MPD, Thermo, Etc.)	IPC 6.7	2	2			3h00	45h00	100%	
	Statistics And Concepts of Experimental Designs	IPC 6.8	4	3	1h30	1h30	1h30	67h30	40% (20% TUT+ 20% PRC)	60%
	Practical Internship 1 In the Environment Professional	IPC 6.9	1	1	Hourly volume outside quota Tutoring: 1.5 hours of practical work per week			10h30	100%	
Transversal TU Code: TTU 32 Credits: 2 Coefficients: 2	Entrepreneurship And Business Management	IPC 6.10	1	1	1h30			10h30		100%
	Environmental Responsibility 1: Environment And Sustainable Development	IPC 6.11	1	1	1h30			10h30		100%

Total Hourly Volume		30	19	3h00	7h30	6h00	427h30		

- **Semester 7**

Teaching unit	Module Title	Code	Credits	Coefficients	Weekly Hours			Semester Hours (15 weeks)	Assessment method	
					Lecture	TUT	PRC		Continuous assessment	Final exam
Fundamental TU Code: FTU 4.1.1 Credits: 8 Coefficients: 4	Unit Operations II (Distillation-Rectification, Mixing and Agitation)	IPC 7.1	4	2	3h00	1h30		67h30	40%	60%
	Reactor Engineering II (Non-Ideal Reactors and Bioreactors)	IPC 7.2	4	2	1h30	1h30		45h00	40%	60%
Fundamental TU Code: FTU4.1.2 Credits: 11 Coefficients: 7	Heat Exchangers	IPC 7.3	4	2	1h30	1h30		45h00	40%	60%
	Advanced Fluid Mechanics	IPC 7.4	4	3	1h30	1h30	1h30	67h30	40% (20% TUT+ 20% PRC)	60%
	Corrosion And Protection of Installations	IPC 7.5	3	2	1h30		1h30	45h00	40%	60%
Methodological TU Code: MTU 4.1 Credits: 10 Coefficients: 7	Static And Dynamic Process Simulators	IPC 7.6	3	2	1h30		1h30	45h00	40%	60%
	Physical Methods of Analysis II	IPC 7.7	3	2	1h30		1h30	45h00	40%	60%
	Practical Work - Chemical Engineering (U.O, CR, TC)	IPC 7.8	2	2			3h00	45h00	100%	
	Professional Personal Project	IPC 7.9	2	1	Hourly volume outside quota Tutoring: 1.5 hours of practical work per week			10h30	100%	
Transversal TU Code: TTU 4.1 Credits: 1Coeff: 1	Environmental Responsibility 2: Industrial Ecology and Energy Transition	IPC 7.10	1	1	1h30			10h30		100%

Total Hourly Volume		30	19	1h30	6h00	9h00	427h30		

- **Semester 8**

Teaching unit	Module Title	Code	Credits	Coefficients	Weekly Hours			Semester Hours (15 weeks)	Assessment method	
					Lecture	TUT	PRC		Continuous assessment	Final exam
Fundamental TU Code: FTU4.2.1 Credits: 13 Coefficients: 7	Unit Operations III (Drying-*Evaporation-Crystallization)*	IPC 8.1	4	2	3h00	1h30		67h30	40%	60%
	Membrane Adsorption and Separation Processes	IPC 8.2	4	2	1h30	1h30		45h00	40%	60%
	Powder and Solid Technologies	IPC 8.3	5	3	1h30	1h30	1h30	67h30	40% (20% TUT+ 20% PRC)	60%
Fundamental TU Code: FTU 4.2.2 Credits: 11 Coefficients: 6	Reactor Engineering III (Multiphase Reactors)	IPC 8.4	4	2	1h30	1h30		45h00	40%	60%
	Refining and Petrochemical Processes	IPC 8.5	3	2	1h30	1h30		45h00	40%	60%
	Treatment of Industrial Effluents and Waste (Gaseous, Liquid and Solid)	IPC 8.6	4	2	1h30	1h30		45h00	40%	60%
Methodological TU Code: MTU 4.2 Credits: 4 Coefficients: 4	Basics of Biotechnology and Bioprocesses	IPC 8.7	1	1	1h30			10h30		100%
	Practical Work - Chemical Engineering (OU, Sep. Membrane)	IPC 8.8	2	2			3h00	45h00	100%	
	Practical Internship 2 In a Professional Environment	IPC 8.9	1	1	Hourly volume outside quota Tutoring: 1.5 hours of practical work per week			10h30	100%	
Transversal TU Code: TTU 4.2	Quality Management and Standards in The Chemical Industries	IPC 8.10	1	1	1h30			10h30		100%
	Compliance With Standards and Rules of	IPC 8.11	1	1	1h30			10h30		100%

Credits: 2 **Coefficients: 2**	Ethics and Integrity									
Total Hourly Volume			**30**	**19**	**3h00**	**9h00**	**4h30**	**427h30**		

- **Semester 9**

Teaching unit	Module Title	Code	Credits	Coefficients	Weekly Hours			Semester Hours (15 weeks)	Assessment method	
					Lecture	TUT	PRC		Continuous assessment	Final exam
Fundamental TU **Code: FTU** **F 5.1.1** **Credits: 10** **Coefficients: 6**	Formulation in The Chemical Industries	IPC 9.1	5	3	1h30	1h30	1h30	67h30	40%	60%
	Pharmaceutical and Parapharmaceutical Processes	IPC 9.2	5	3	1h30	1h30	1h30	67h30	40%	60%
Fundamental TU **Code: FTU 5.1.2** **Credits: 9** **Coefficients: 5**	Polymerization Engineering: Some Major Industrial Processes	IPC 9.3	4	2	1h30	1h30		67h30	40%	60%
	Innovative Processes	IPC 9.4	2	1	1h30			10h30		100%
	Introduction to The Digitalization of Processes	CPI 9.5	3	2	1h30		1h30	45h00	40%	60%
Methodological TU **Code: MTU 5.1** **Credits: 9** **Coefficients: 6**	Process Control & Command & Regulation	IPC 9.6	3	2	1h30		1h30	45h00	40%	60%
	Process Safety Industrial And Risk Management	IPC 9.7	3	2	1h30	1h30		45h00	40%	60%
	Industrial Project	CPI 9.8	2	1			1h30	10h30	100%	
	Technical and Economic Evaluation of Industrial Processes	IPC 9.9	2	2	1h30	1h30		45h00	40%	60%

Transversal TU Code: TTU 5.1 Credits: 1 Coefficients: 1	Documentary Research and Dissertation Design	**IPC 9.10**	1	1	1h30			10h30		100%
Total Hourly Volume			**30**	**19**	**1h30**	**7h30**	**7h30**	**427h30**		

Semester 10: Engineer in "Chemical Process Engineering"

The FYP must be carried out in relation to the industrial sector or in a company or within the framework of decree 1275 (start-up), is sanctioned by a dissertation and a defense.

	Semester Hours	Coefficient	Credits
Personal Work	**550**	**11**	**18**
Internship in a company	**100**	04	06
Seminars	**50**	02	03
Other (Supervision)	**50**	02	03
Total Semester 10	**750**	19	30

Evaluation of the End of Engineering Cycle Project (given for information purposes)

- Scientific value (Jury's assessment) /6
- Writing the Dissertation (Jury Assessment) /4
- Presentation and answer to questions (Jury assessment) /4
- Supervisor's assessment /3
- Presentation of the internship report (Jury assessment) /3

TUT: Tutorials

PRC: Practicals

FYP: Final Year Project