

CHEMICAL ENGINEERING PROGRAM

BOGOTÁ CAMPUS | SCHOOL OF ENGINEERING | ACUERDO 02 DE 2013

This curriculum is a proposal that seeks to guide students in the registration of their subjects each semester, taking into account the number of required credits by groups and components.

I	II	III	IV	V	VI	VII	VIII	IX	X
Principles of chemistry 1000024 3	Principles of chemical analysis 1000026 3	Lab. principles of chemical analysis 1000027 3	Principles of inorganic chemistry 1000028 3	Principles of organic chemistry 1000030 3	Lab. of organic chemistry 1000010 2	Economic and administrative sciences (selected elective)* 108 CRED. 3	Materials (selected elective)* 53 Dis. CRED. 3	Interdisciplinary projects workshop 2015737 3	Final work degree 2015289 6
Lab. basic techniques in chemistry 1000025 3	Linear algebra 1000003 4	Molecular and cellular biology 1000025 3	Fundamental probability and statistics 1000013 3	Numerical methods 2015970 3	Economic engineering 2015703 3	Projects management and administration 2015702 3	Process control 2015710 3	Design of plants and equipment 2015712 3	
Differential calculus 1000004 4	Integral calculus 1000005 4	Calculus of several variables 1000006 4	Differential equations 1000007 4		Mass transfer 2015744 3	Separation operations 2015731 3	Lab. of separation, reaction and control operation 2015720 3	Process engineering 2015715 3	
Engineering tools (selected elective)* 3	Fundamental of mechanics 1000019 4	Fundam. of electricity and magnetism 1000017 4	Fluids 2015714 3	Heat transfer 2015743 4	Workshop 2 2015736 1	Lab. fluids, solids and heat transfer 2015719 3	Chemical and biochemical processes (selected elective)* 3		Free choice election 3
			Workshop 1 2015735 1	Solids handling 2015276 3	Lab. thermodynamics and transport properties 2015721 3				Free choice election 3
Introduction to chemical engineering 2015718 3	Mass balance 2015708 3	Thermodynamics 20155741 3	Chemical thermodynamics 2015740 3	Energy balance and chemical equilibrium 2015707 3	Thermodynamics (selected elective)* 3	Chemical reactions engineering 2015716 3	Design of chemical and biochemical processes 2015713 3	Free choice election 3	Free choice election 3
		Free choice election 3		Free choice election 3	Free choice election 3	Free choice election 3	Free choice election 4	Free choice election 4	Free choice election 4
TOTAL CREDITS	16	18	20	17	19	18	19	16	19
BASIC MATHEMATICS 4	READING AND WRITING 4			FOUNDATION Total Required: 63 Elective: 6 69	DISCIPLINARY Total Required: 66 Elective: 9 75	FREE CHOICE Total Required: 36 36	TOTAL PROGRAM 180	% OF PROGRAM 	
ENGLISH 1 3	ENGLISH 2 3	ENGLISH 3 3	ENGLISH 4 3						

CONVENTIONS

- LEVELING COURSES
 - FOUNDATION COMPONENT
 - FREE CHOICE COMPONENT
 - DISCIPLINARY OR PROFESSIONAL EDUCATION COMPONENT
- * The list of optional subjects is presented on the following page, according to the grouping which they belong.



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GROUPS

MATHEMATICS, PROBABILITY AND STATISTICS

CODE	NAME OF THE SUBJECT	CRED.
1000004	Differential Calculus	4
1000005	Integral Calculus	4
1000006	Calculus of Several Variables	4
1000007	Differential Equations	4
1000013	Fundamentals of Probability and Statistics	3
1000003	Linear Algebra	4

CREDITS: REQUIRED: 23 | COMPULSORY: 23 | ELECTIVE: 0

CHEMISTRY AND BIOLOGY

CODE	NAME OF THE SUBJECT	CRED.
1000025	Laboratory of Basic Techniques in Chemistry	3
1000024	Principles of Chemistry	3
1000026	Principles of Chemical Analysis	3
1000027	Laboratory of Principles of Chemical Analysis	3
1000028	Principles of Inorganic Chemistry	3
1000030	Principles of Organic Chemistry	3
1000010	Laboratory of Principles of Organic Chemistry	2
1000025	Molecular and Cellular Biology	3

CREDITS: REQUIRED: 23 | COMPULSORY: 23 | ELECTIVE: 0

PHYSICS

CODE	NAME OF THE SUBJECT	CRED.
1000019	Fundamentals of Mechanics	4
1000017	Fundamentals of Electricity and Magnetism	4

CREDITS: REQUIRED: 8 | COMPULSORY: 8 | ELECTIVE: 0

ECONOMIC AND ADMINISTRATIVE SCIENCES

CODE	NAME OF THE SUBJECT	CRED.
2015703	Engineering Economics	3
2015702	Project Management and Administration	3
2015698	Business Administration	3
2016609	Industrial Safety	3
2016741	Financial Management	3
2016610	Costing Systems	4
2015699	Market Administration	3
2016592	General Economics	3
2015695	Project Design, Management and Evaluation	3
2015705	Markets I	4
2016056	Decision Theory	4
2015700	Fundamentals of Financial Accounting	3
2015704	International Marketing	3
2015694	Labour Law	3

CREDITS: REQUIRED: 9 | COMPULSORY: 6 | ELECTIVE: 3

ENGINEERING TOOLS

CODE	NAME OF THE SUBJECT	CRED.
2015734	Computer Programming	3
2015709	Oral and Written Communication	3
2015711	Basic Drawing	3
2015970	Numerical Methods	3

CREDITS: REQUIRED: 6 | COMPULSORY: 3 | ELECTIVE: 3

DEEPENING

The subjects of this grouping and their information are presented in Table 19 of the of the Program Educational Project (PEP). It is suggested to take them as part of the Free Choice component. In the technical electives subjects there is the option of doing Student Practice.

108 credits approved of the total credits of the curriculum

THERMODYNAMICS

CODE	NAME OF THE SUBJECT	CRED.
2015741	Thermodynamics	3
2015740	Chemical Thermodynamics	3
2015735	Workshop 1	1
2015707	Energy Balance and Chemical Equilibrium	3
2015739	Molecular Thermodynamics	3
2015738	Thermodynamic Cycles	3
1000038	Physical Chemistry II	3

CREDITS: REQUIRED: 13 | COMPULSORY: 10 | ELECTIVE: 3

UNIT OPERATIONS

CODE	NAME OF THE SUBJECT	CRED.
2015708	Mass Balance	3
2015714	Fluids	3
2015726	Solids Handling	3
2015743	Heat Transfer	4
2015744	Mass Transfer	3
2015736	Workshop 2	1
2015731	Separation Operations	3

CREDITS: REQUIRED: 20 | COMPULSORY: 20 | ELECTIVE: 0

MATERIALS

CODE	NAME OF THE SUBJECT	CRED.
2015717	Introduction to Materials Engineering	3
2020326	New Topics in Chemical Engineering	3
1000040	Introduction to Materials Science	3
2015727	Materials	3
2024929	Introduction to Polymer Materials Engineering	3
2017348	Materials Technology	3
2017256	Materials Science and Engineering	3
2015598	Chemistry of Solids	3

CREDITS: REQUIRED: 3 | COMPULSORY: 0 | ELECTIVE: 3

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CHEMICAL AND BIOCHEMICAL PROCESSES

CODE	NAME OF THE SUBJECT	CRED.
2015716	Chemical Reaction Engineering	3
2015713	Design of Chemical and Biochemical Processes	3
2015710	Process Control	3
2015712	Design of Plants and Equipment	3
2015715	Process Engineering	3
2015729	Modelling and Simulation of Chemical Processes	3
2015728	Modelling and Simulation of Biochemical Processes	3

CREDITS: REQUIRED: 18 | COMPULSORY: 15 | ELECTIVE: 3

PROFESSIONAL CONTEXT

CODE	NAME OF THE SUBJECT	CRED.
2015718	Introduction to Chemical Engineering	3

CREDITS: REQUIRED: 3 | COMPULSORY: 3 | ELECTIVE: 0

RESEARCH AND INNOVATION

CODE	NAME OF THE SUBJECT	CRED.
2015721	Laboratory of Thermodynamic and Transport Properties	3
2015719	Laboratory of Fluids, Solids and Heat Transfer	3
2015720	Laboratory of Separation, Reaction and Control Operations	3
2015737	Interdisciplinary Projects Workshop*	3
2015289	Final Work Degree	6
2015290	Final Work Degree** - Postgraduate Courses**	6

CREDITS: REQUIRED: 18 | COMPULSORY: 12 | ELECTIVE: 6

* 70% of the total credits required in the disciplinary or professional education component (53 credits)

** 80% of the total credits required in the disciplinary or professional education component (60 credits)

CONVENTIONS

● FOUNDATION COMPONENT

● DISCIPLINARY OR PROFESSIONAL EDUCATION COMPONENT

● FREE CHOICE COMPONENT

● REQUIRED SUBJECT

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