

## DEGREE IN CHEMICAL ENGINEERING (2019-20)

<b>Código:</b> C204	<b>Fecha de aprobación:</b> 22/03/2012	<b>Precio:</b> 20,27 1st-registration credits
<b>Créditos:</b> 240	<b>Título:</b> Undergraduate 3-5 years (ECTS)	

### RAMA

Engineering and Architecture

### PLAN

DEGREE IN CHEMICAL ENGINEERING

### TIPO DE ENSEÑANZA

Face-to-face

### CENTROS DONDE SE IMPARTE

Polytechnic School

### ESTUDIO IMPARTIDO CONJUNTAMENTE CON

Solo se imparte en esta universidad

### FECHAS DE EXAMEN

[Acceda al listado de fechas de examen para esta titulación.](#)

## PLAN DE ESTUDIOS OFERTADO EN EL CURSO 2019-20

Leyenda: No ofertada Sin docencia

### FIRST YEAR

#### CORE SUBJECTS

48 créditos

Curso	Título	Créditos	Subject
1	CORE	6	<a href="#">34500 - FUNDAMENTALS OF CHEMISTRY IN ENGINEERING</a>
1	CORE	6	<a href="#">34501 - FUNDAMENTALS OF PHYSICS IN ENGINEERING I</a>
1	CORE	6	<a href="#">34502 - FUNDAMENTALS OF PHYSICS IN ENGINEERING II</a>
1	CORE	6	<a href="#">34503 - COMPUTER APPLICATIONS FOR ENGINEERING</a>
1	CORE	6	<a href="#">34504 - FURTHER CHEMISTRY</a>
1	CORE	6	<a href="#">34507 - FUNDAMENTALS OF MATHEMATICS IN ENGINEERING I</a>
1	CORE	6	<a href="#">34508 - FUNDAMENTALS OF MATHEMATICS IN ENGINEERING II</a>
1	CORE	6	<a href="#">34509 - ECONOMICS APPLIED TO THE CHEMICAL INDUSTRY</a>

#### COMPULSORY SUBJECTS

12 créditos

Curso	Título	Créditos	Subject
1	COMPULSORY	6	<a href="#">34505 - APPLIED INORGANIC CHEMISTRY</a>
1	COMPULSORY	6	<a href="#">34506 - INTRODUCTION TO CHEMICAL ENGINEERING</a>

### SECOND YEAR

#### CORE SUBJECTS

12 créditos

Curso	Título	Créditos	Subject
2	CORE	6	<a href="#">34510 - FUNDAMENTALS OF MATHEMATICS IN ENGINEERING III</a>
2	CORE	6	<a href="#">34517 - ENGINEERING GRAPHICS</a>

#### COMPULSORY SUBJECTS

48 créditos

Curso	Título	Créditos	Subject
2	COMPULSORY	6	<a href="#">34511 - CHEMICAL AND INSTRUMENTAL ANALYSIS</a>
2	COMPULSORY	6	<a href="#">34512 - APPLIED PHYSICAL CHEMISTRY</a>
2	COMPULSORY	6	<a href="#">34513 - APPLIED ORGANIC CHEMISTRY</a>
2	COMPULSORY	6	<a href="#">34514 - MATERIALS TECHNOLOGY</a>
2	COMPULSORY	6	<a href="#">34515 - MECHANICAL DESIGN</a>
2	COMPULSORY	6	<a href="#">34516 - FLUID FLOW OPERATIONS</a>
2	COMPULSORY	6	<a href="#">34518 - THE INTEGRATED INDUSTRIAL ENGINEERING LABORATORY</a>
2	COMPULSORY	6	<a href="#">34519 - ELECTROTECHNOLOGY AND ELECTRONICS</a>

### THIRD YEAR

#### COMPULSORY SUBJECTS

60 créditos

Curso	Título	Créditos	Subject
3	COMPULSORY	6	<a href="#">34520 - SEPARATION PROCESSES IN MASS TRANSFER I</a>
3	COMPULSORY	6	<a href="#">34521 - SEPARATION PROCESSES IN MASS TRANSFER II</a>
3	COMPULSORY	9	<a href="#">34522 - CHEMICAL ENGINEERING LABORATORY I</a>
3	COMPULSORY	9	<a href="#">34523 - THERMAL ENGINEERING</a>
3	COMPULSORY	6	<a href="#">34524 - REACTOR DESIGN I</a>
3	COMPULSORY	6	<a href="#">34525 - REACTOR DESIGN II</a>
3	COMPULSORY	6	<a href="#">34526 - CHEMISTRY AND INDUSTRIAL SAFETY</a>
3	COMPULSORY	6	<a href="#">34527 - BIOCHEMICAL ENGINEERING</a>
3	COMPULSORY	6	<a href="#">34528 - PROCESS CONTROL</a>

### FOURTH YEAR

#### COMPULSORY SUBJECTS

36 créditos

Curso	Título	Créditos	Subject
4	END OF DEGREE WORK	12	<a href="#">34546 - FINAL PROJECT</a>
4	COMPULSORY	6	<a href="#">34529 - CHEMICAL ENGINEERING LABORATORY II</a>
4	COMPULSORY	6	<a href="#">34530 - SIMULATION, OPTIMISATION AND DESIGN OF CHEMICAL PROCESSES</a>
4	COMPULSORY	6	<a href="#">34531 - PROJECTS</a>
4	COMPULSORY	6	<a href="#">34532 - ENVIRONMENTAL TECHNOLOGY</a>

#### OPTIONAL SUBJECTS

24 créditos

Curso	Título	Créditos	Subject
-------	--------	----------	---------

4	OPTIONAL	6	<a href="#">34533 - INDUSTRIAL AUTOMATION</a>
4	OPTIONAL	6	<a href="#">34534 - ROBOTICS</a>
4	OPTIONAL	6	<a href="#">34535 - FURTHER MECHANICAL DESIGN</a>
4	OPTIONAL	6	<a href="#">34536 - ELECTRICAL INSTALLATIONS</a>
4	OPTIONAL	6	<a href="#">34537 - POLYMER PROCESSING TECHNOLOGY</a>
4	OPTIONAL	6	<a href="#">34538 - MANAGEMENT AND TREATMENT OF INDUSTRIAL WASTE AND WATER</a>
4	OPTIONAL	6	<a href="#">34539 - HETEROGENEOUS CATALYSIS AND ELECTROCHEMICAL ENGINEERING</a>
4	OPTIONAL	6	<a href="#">34540 - INTEGRATED MANAGEMENT OF THE CHEMICAL INDUSTRY</a>
4	OPTIONAL	6	<a href="#">34541 - ENGLISH I</a>
4	OPTIONAL	6	<a href="#">34542 - ENGLISH II</a>
4	OPTIONAL	6	<a href="#">34543 - SUSTAINABLE FACILITIES AND RENEWABLE RESOURCES</a>
4	OPTIONAL	6	<a href="#">34544 - TRAINEESHIP I</a>
4	OPTIONAL	6	<a href="#">34545 - TRAINEESHIP II</a>

**LANGUAGE**

Superado este bloque se obtiene

**DEGREE IN CHEMICAL ENGINEERING**

## GENERAL AIMS OF THE DEGREE COURSE

The Degree in Chemical Engineering has been designed with the basic aim of producing professionals capable of applying scientific methods and the principles of engineering and economics to addressing and solving complex problems regarding the design of products and processes in which materials undergo changes in morphology, composition or energy content. This includes the design, calculation, construction, implementation and operation of equipment and installations where such processes are carried out, and which are characteristic of the chemical industry and related sectors, such as the pharmaceutical, biotechnological, food or environmental sectors. All the foregoing implies considerations of quality, safety, economy, rational and efficient use of natural resources and preservation of the environment, in compliance with professional codes of conduct.

The aim is to produce graduates who are highly knowledgeable and skilled, with a creative approach and an awareness of the need for professional development in the course of their own work and that of their colleagues. Accordingly, learning skills and the capacity to apply knowledge are just as important as the quantity of knowledge acquired.



- [Credit structure of the degree course](#)
- [Distribution of credits per subject type](#)
- [General description of the course programme](#)
- [Optional subjects and routes](#)

## CREDIT STRUCTURE OF THE DEGREE COURSE

Subjects in the Degree in Chemical Engineering, each worth 6 or 9 European ECTS credits, are organised into semesters. Specifically, students are required to take 30 credits each semester, to complete 60 credits per year, for a total of 240 credits over four years.

In order to make the course compatible with other activities, students are allowed to take a part-time course consisting of 30 credits per academic year.

## STRUCTURE OF THE COURSE PROGRAMME PER SUBJECT TYPE

Subject type	Credits
Core	60
Compulsory	144
Optional	24
Final Project	12
<b>Total credits</b>	<b>240</b>

## GENERAL DESCRIPTION OF THE COURSE PROGRAMME

The University of Alicante Degree in Chemical Engineering Course is organised into a series of Units, based on the structure set out in Royal Decree 1393/2007. These units cover the proficiencies, learning outcomes, educational activities and assessment procedure to be followed in order for students to attain the aims of the Degree.

These units comprise the compulsory aspect of the Degree, and are aimed at enabling students to acquire the proficiencies and knowledge considered essential for Graduates in Chemical Engineering, thus ensuring acquisition of the generic professional skills required for regulated professional practice as Industrial Engineering Technicians. In this regard, the requirements established in Order CIN/351/2009 of 9 February have been observed, concerning validation of official university qualifications which qualify their holders for professional practice as Industrial Engineering Technicians. This Order states that the course programme should include at least the following **modules**:

- **Core Module**
- **Common Industrial Module**
- **Specific Technology Module: Chemical Engineering**

and which also specifies that a Final Project should be undertaken.

The course has been structured on the basis of three types of subjects:

Firstly, in accordance with Royal Decree 1393/2007, the first half of the course programme contains the **core subjects**, worth a total of 60 ECTS.

Secondly, there are the **compulsory subjects**, worth 144 ECTS and aimed at guaranteeing that students acquire the skills associated with the Degree, in addition to 12 ECTS credits pertaining to the compulsory Final Project. This latter is carried out in the final semester and is aimed at assessing the proficiencies acquired. Prior to evaluation for the final project, the student must provide evidence of ability in a foreign language. Among other forms of accreditation, the minimum necessary requirement at the University of Alicante is to have attained level B1 of the European Framework of Reference for Languages, and this requirement may be raised in the future.

Thirdly, the course programme also includes **optional subjects** worth 24 ECTS. These are specialisation-based and are taken in the final semesters of the course, allowing students to choose their own curricular direction.

As regards optional subjects, a total of 66 optional ECTS credits are offered, in addition to the possibility of carrying out Work Experience.

These are taken in semester 8.

Optional subjects include the possibility of carrying out work experience, whether for 6 credits in lieu of one optional subject, or for 12 credits, in lieu of two.

#### OPTIONAL SUBJECTS

OPTIONAL SUBJECTS	ECTS
EXTENDED MECHANICAL DRAWING	6
INDUSTRIAL AUTOMATION	6
HETEROGENEOUS CATALYSIS AND ELECTROCHEMICAL ENGINEERING	6
INTEGRATED MANAGEMENT IN THE CHEMICAL INDUSTRY	6
MANAGEMENT AND TREATMENT OF INDUSTRIAL WASTES AND WATER	6
ENGLISH I	6
ENGLISH II	6
ELECTRICAL INSTALLATIONS	6
SUSTAINABLE FACILITIES AND RENEWABLE RESOURCES	6
WORK EXPERIENCE I	6
WORK EXPERIENCE II	6
ROBOTICS	6
POLYMER PROCESSING TECHNOLOGY	6

### LANGUAGE REQUIREMENT (IN A FOREIGN LANGUAGE)

Students who study an **undergraduate degree** at the University of Alicante must **confirm** a minimum **level of B1 in a foreign language** (a B2 is recommended) in order to **obtain the diploma**.

The required language level is in accordance with the Common European Framework of Reference for Languages.

The language accreditation requirement can be obtained previously or at any time during university studies. However, the language requirement will be necessary in order to be able to **assess the final year project**.

The **different forms** of obtaining such language requirement can be consulted in the additional information in this section.

[+info](#)

### LANGUAGE TEACHING COMPETENCE CERTIFICATE

Students who want to have a career in non-university **teaching** when they finish their studies are **recommended** to obtain the **teaching competence certificate** (Valencian and/or foreign languages).

This certificate can be obtained by taking specific itineraries in your university studies or by taking the **UA teaching competence course in Valencian, German, French and English**.

[+info](#)

### FINAL YEAR PROJECT (TFG)

All the official undergraduate degrees must be completed by preparing and defending a final year project, which must be done in the final phase of the studies and be aimed at the assessment of competences associated to the degree.

The final year project must be an original, independent and personal work. The elaboration of it may be individual or coordinated. Each student will prepare this project under the supervision of a tutor, allowing students to show the received training content in an integrated way, as well as the acquired competences associated to the undergraduate degree.

In order to **register in the final year project**, students must comply with the requirements established in the "Regulations for continuation studies for students registered in undergraduate degrees at the University of Alicante". Among the requirements established to be able to register in the final year project, a minimum of 168 credits must be passed in undergraduate degrees with a total of 240 credits, and a minimum of 228 credits in undergraduate degrees with a total of 300 credits or more.

In order for **the final year project to be assessed**, a B1 level of a foreign language (B2 is recommended) must be confirmed.

[+info](#)



- [Access routes](#)
- [Procedure for applying for admission](#)
- [Recommended applicant profile](#)
- [Number of places and pass marks](#)

## ACCESS ROUTES

Admission to this degree course is open to any applicant who meets one of the following entrance requirements:

1. **SPANISH BACCALAUREATE (LOMCE) UNIVERSITY ENTRANCE EXAM (PAU):** Although students can access university by means of any Baccalaureate specialization, the recommended one is **Sciences**.

**ADMISSION SCORES FOR THIS DEGREE CAN BE IMPROVED BY TAKING THE SPECIFIC MODULES OF THE UNIVERSITY ENTRANCE EXAM (PAU) AS INDICATED IN THE TABLE BELOW WITH THEIR RESPECTIVE WEIGHTINGS.**

TABLE 1

MODULE WEIGHTINGS		PERFORMING ARTS	BIOLOGY	AUDIO VISUAL CULTURE I	TECHNICAL DRAWING II	DESIGN	BUSINESS ECONOMICS	PHYSICS	FUNDAMENTALS OF ART II	GEOGRAPHY	GEOLOGY	GREEK II	HISTORY OF PHILOSOPHY	HISTORY OF ART	LATIN II	MATHEMATICS APPLIED TO SOCIAL SCIENCES II	MATHEMATICS II	CHEMISTRY	
		Academic year 2017/18	0,1		X			X	X				X						
	0,2				X			X									X	X	

2. **PREVIOUS BACCALAUREATES WITH OR WITHOUT A PASS IN THE UNIVERSITY ENTRANCE EXAM (PAU):** Students who have completed their Baccalaureate under previous education systems and have passed the PAU will be able to use the mark obtained in their application.

**HOWEVER, STUDENTS CAN TAKE SPECIFIC EXAM MODULES DURING THE VOLUNTARY PAU EXAM PERIOD IN ORDER TO IMPROVE THEIR ADMISSION SCORE AS SHOWN IN TABLE 1. THEY CAN ALSO SIT FOR THE OBLIGATORY PAU EXAMS, IN WHICH CASE THEY WILL HAVE TO TAKE ALL THE EXAMS SCHEDULED DURING THIS PERIOD.**

3. **VOCATIONAL EDUCATION:** Vocational educational qualifications such as senior technician, senior technician of plastic arts and design, or senior technician in sports is the preferred professional area although access to this degree may be through any professional field.

**ADMISSION SCORES CAN BE IMPROVED BY TAKING THE PAU EXAM IN UP TO 4 OF THE MODULES IN TABLE 1.**

4. **STUDENTS FROM EDUCATION SYSTEMS IN COUNTRIES OF THE EUROPEAN UNION OR OTHER STATES WITH WHICH SPAIN HAS AN INTERNATIONAL AGREEMENT:** Accreditation is required and issued by *Universidad Nacional de Educación a Distancia (UNED)*.

**STUDENTS CAN SIT FOR EXAMS IN SUBJECTS INCLUDED IN THE *PRUEBAS DE COMPETENCIAS ESPECÍFICAS (PCE)*, ORGANISED BY THE UNED, IN ORDER TO IMPROVE THEIR ADMISSION SCORE UP TO 14 POINTS AS INDICATED IN THE WEIGHTINGS IN TABLE 1.**

5. **STUDENTS FROM FOREIGN EDUCATION SYSTEMS:** Prior to applying for the validation of their foreign Baccalaureate, students may sit for up to 4 exams in subjects offered by the *Pruebas de Competencias Específicas (PCE)* organised by **UNED** (at least one subject from the core subjects).

**THE WEIGHTINGS INDICATED IN TABLE 1 WILL BE APPLIED TO CORE AND/OR OPTIONAL SUBJECTS.**

6. **OTHER:** University degrees and other similar qualifications. University entrance exam for students over 25 (preferential option: Engineering and architecture). Access on the basis of professional experience (applicants over 40 years of age). Access to applicants aged 45 years or more by means of an exam.

**Weightings of the subjects of the specific phase of the Proof of Access to the University (PAU) in the previous years**

High School Diploma Subjects	Weighting parameters	Music Analysis II	Biology	Earth and Environmental Sciences	Drawing II	Technical Drawing II	Design	Business Economics	Electronics	Physics	Geography	Greek II	History of Music and Dance	Art History	Latin II	Musical Language and Practice	World Literature	Mathematics Applied to the Social Sciences II	Mathematics II	Chemistry	Expressive techniques in the Arts and Crafts	Industrial Technology II
Academic Years 2010-11	0.1																					
2011-12	0.2		x	x		x	x	x	x	x									x	x		x
Academic Years 2012-13	0.1		x	x			x	x														
2013-14																						
2014-15	0.2					x			x	x									x	x		x
2015-16																						
2016-17																						

### PROCEDURE FOR APPLYING FOR ADMISSION: PRE-ENROLMENT AND REGISTRATION

- Anticipated number of places offered during the first pre-enrolment session: 60
- In order to apply for a place, the procedure and pre-enrolment periods established each year must be observed. [Information concerning the application procedure \(Pre-enrolment\)](#).
- Applicants admitted to a course must formally register within the timescale established annually in the enrolment calendar. [Registration Information](#).

### RECOMMENDED APPLICANT PROFILE

As regards the recommended educational background for the Degree in Chemical Engineering, new students should have a basic grounding in mathematics, physics, chemistry and drawing.

Among the qualities the future Chemical Engineering student should possess, the following are of especial relevance:

- Capacity for work (perseverance, method and rigour).
- Capacity for reasoning and critical analysis.
- Scientific spirit.
- Capacity to obtain, interpret and apply knowledge.
- Problem-solving skills.
- Capacity for synthesis and abstraction.
- Recommended complementary education: English and user-level computing skills.

### NUMBER OF PLACES AND PASS MARKS

COURSES	NUMBER OF PLACES	PASS MARKS						
		GENERAL	OVER 25	OVER 40	OVER 45	GRADUATES	SPORTSPEOPLE	DISABLED
2010-11	60	6,160	5,600	---	---	---	---	---
2011-12	60	7,136	5,628	---	---	5,000	---	---
2012-13	60	8,072	5,000	---	---	5,000	---	---
2013-14	60	7,229	5,000	---	---	---	---	---

2014-15	60	8,020	---	---	---	---	5,000	5,000
2015-16	60	7,643	---	---	---	---	7,042	---
2016-17	60	8,204	5,000	---	---	5,000	5,000	---

- "Pass marks" indicated correspond to the results of the first adjudication of June.
- The definitive marks can be inferior to the here collected.

## PROFESSIONAL PROFILES

Graduates in Chemical Engineering are qualified to work in the manufacturing industry, design and consultancy companies, technical, legal or commercial advisory services, administration, teaching and as self-employed industrial engineer technicians, and to issue reports and expert opinions.

On the basis of the proficiencies and professional profile of Chemical Engineers:

a) Graduates in Chemical Engineering are fully qualified to install facilities and auxiliary services in the chemical industry, particularly as regards the installation of heating, air-conditioning and cooling facilities, sound-proofing, electrical installations, gas and fuel distribution, storage of chemical products, storage of pressurised liquids, water supply facilities, rain-water, waste-water and industrial water installations, fire-prevention installations and pollution control and prevention facilities.

b) Graduates are particularly qualified to participate in the planning and development of chemical processes, applying their scientific and technological grounding to these processes and their products, particularly with regard to production and technical production control, installation and set-up, operation, maintenance and inspection, quality, data-processing, commerce, and the manufacture of equipment and machinery.

c) Graduates are also qualified to write up projects, studies, reports, specifications and procedures within the economic, environmental, and chemical industry, corporate and labour fields, particularly with regard to environmental impact studies, acoustic studies, waste treatment, management and assessment, treatment and use of the complete water cycle, pollution control and prevention, eco-efficiency and eco-design of processes and products, sustainable development, technical, economic and market viability studies, process control, equipment, simulation and optimisation, management of industrial hazards and health and safety in the industry, consultancy, technical assessments and reports in legal, official and private matters, homologation; chemical verification, analysis and testing.

d) Likewise, graduates may work in Public Administration and public organisations, as envisaged in the corresponding regulations, and in engineering and consultancy companies.

e) Chemical Engineering graduates are particularly qualified to sign off on the installations referred to in the foregoing paragraphs.

In general, Graduates in Chemical Engineering Industrial Chemistry are qualified to work as regulated Industrial Engineering Technicians, given that the proposed Course Programme complies with the terms of Order CIN/351/2009 of 9 February establishing the requirements for the validation of official university titles which qualify their holders to exercise as Industrial Engineering Technicians.

## IMPLEMENTATION

The proposed course programme for the University of Alicante Degree in Chemical Engineering will be implemented year by year. This involves phasing out and replacing each year of the Degree in Chemical Engineering programme currently being taught at the University of Alicante Science Faculty (amended 1999 programme). Subjects pertaining to the former degree will no longer be taught once those of the new Degree Course in Chemical Engineering have been implemented.

Implementation of the new University of Alicante Degree (Grado) in Chemical Engineering course will begin in the academic year 2010-2011.

## TIMESCALE

<b>Academic Year</b>	<b>Implementation of the new Degree (Grado) in Chemical Engineering</b>	<b>Phasing out of the current Degree in Chemical Engineering</b>
2010-11	1 <sup>st</sup> Year	1 <sup>st</sup> Year
2011-12	2 <sup>nd</sup> Year	2 <sup>nd</sup> Year
2012-13	3 <sup>rd</sup> Year	3 <sup>rd</sup> Year
2013-14	4 <sup>th</sup> Year	4 <sup>th</sup> Year
2014-15	----	5 <sup>th</sup> Year

**CREDIT EQUIVALENCE BETWEEN SUBJECTS ON THE CURRENT COURSE PROGRAMME AND THE NEW DEGREE (GRADO) IN CHEMICAL ENGINEERING**

Subjects in Chemical Engineering	Subjects in the Degree in Chemical Engineering
GRAPHIC EXPRESSION (7.5 credits)	Graphic Engineering (6 ECTS)
PHYSICAL BASES OF ENGINEERING I (4.5)	Physical Bases of Engineering II (6)
PHYSICAL BASES OF ENGINEERING II (6)	Physical Bases of Engineering I (6)
MATHEMATICAL BASES OF ENGINEERING (16.5)	Mathematical Bases of Engineering I (6)
PHYSICAL CHEMISTRY (7.5)	Extended Chemistry (6)
FUNDAMENTALS OF ANALYTICAL CHEMISTRY (7)	Extended Chemistry (6)
FUNDAMENTALS OF ORGANIC CHEMISTRY (7)	Chemical Bases of Engineering (6)
STRUCTURE AND PROPERTIES OF MATERIALS (7)	Chemical Bases of Engineering (6)
INTRODUCTION TO CHEMICAL ENGINEERING (8.5)	Introduction to Chemical Engineering (6)
EXPERIMENTS IN CHEMICAL ENGINEERING II (5) AND EXPERIMENTS IN CHEMICAL ENGINEERING III (6)	Experiments in Chemical Engineering (9)
INORGANIC CHEMISTRY (6.5)	Applied Inorganic Chemistry (6)
ORGANIC CHEMISTRY (6.5)	Applied Organic Chemistry (6)
APPLIED THERMODYNAMICS AND CHEMICAL KINETICS (9)	Applied Physical Chemistry (6)
EXTENDED MATHEMATICS FOR ENGINEERING (13.5)	Mathematical Bases of Engineering II and III (12)
FLUID MECHANICS (5.5)	Fluid Flow Operations (9)
ANALYTICAL CHEMISTRY (6.5)	Fundamentals of Chemical and Instrumental Analysis (6)
HEAT TRANSMISSION (4.5) AND THERMOTECHNICS (4.5)	Thermal Engineering (6)
FUNDAMENTALS OF ELASTICITY AND STRENGTH OF MATERIALS (6)	Mechanical design (6)
DESIGN OF EQUIPMENT AND FACILITIES (6)	Extended Mechanical Design (6)
INDUSTRIAL ORGANISATION AND ECONOMICS (6)	Economics Applied to the Chemical business (6)
ENVIRONMENTAL ENGINEERING (6.5)	Environmental Technology (6)
SEPARATION PROCESSES (7.5)	Separation Processes in Material Transference II (6)
INDUSTRIAL CHEMISTRY (4.5)	Chemistry and Industrial Safety (6)
INDUSTRIAL SAFETY AND HYGIENE (4.5)	Chemistry and Industrial Safety (6)
CHEMICAL REACTORS (7.5)	Reactor Design I (6)
FUNDAMENTALS OF SEPARATION PROCESSES (7.5)	Separation Processes in Material Transference I (6)
CHEMICAL PROCESS EQUIPMENT AND CONTROL (6)	Process Control (6)
EXPERIMENTS IN CHEMICAL ENGINEERING IV (13)	Experiments in Chemical Engineering II (6)
SIMULATION AND OPTIMISATION IN CHEMICAL PROCESSES (6)	Simulation, Optimisation and Design of Chemical Processes (6)
DESIGNING HETEROGENEOUS REACTORS (4.5)	Reactor Design II (6)
HETEROGENEOUS CATALYSIS (4.5) AND ELECTROCHEMICAL REACTORS (4.5)	Heterogeneous Catalysis and Electrochemical Engineering (6)

MANAGEMENT AND TREATMENT OF TOXIC AND DANGEROUS WASTE (4.5)	Management and Treatment of Industrial Waste and Water (6)
MANAGEMENT AND TREATMENT OF WATER (4.5)	Management and Treatment of Industrial Waste and Water (6)
MANAGEMENT AND TREATMENT OF URBAN WASTE (4.5)	Management and Treatment of Industrial Waste and Water (6)
UNIT OPERATIONS IN POLYMER PROCESSING (4.5)	Technology of Polymer Processing (6)
WORK EXPERIENCE IN CHEMICAL ENGINEERING (6)	Work Experience I (6)
INTRODUCTION TO EXPERIMENTS IN PHYSICS (6) AND EQUIPMENT TECHNIQUES IN PHYSICS (6)	Electrotechnology and Electronics (6)
ELECTROTECHNOLOGY (4.5) AND EQUIPMENT TECHNIQUES IN PHYSICS (6)	Electrotechnology and Electronics (6)
INTRODUCTION TO EXPERIMENTS IN PHYSICS (6) AND ELECTROTECHNOLOGY (4.5)	Electrotechnology and Electronics (6)
BIOCHEMISTRY (7.5)	Biochemical Engineering (6)
PROJECTS (6)	Degree's Final Project (6)
<b>TOTAL: 290,5 Credits</b>	<b>TOTAL: 246 ECTS</b>

According to University of Alicante regulations, *students who do not wish to take the new degree course subjects are entitled to sit four examinations in the two academic years following the end of each year.* Any students wishing to continue their studies after sitting and failing these tests will be required to follow the new plan, according to the adaptation system established in the new plan. Old (LRU) and new (ECTS) credits are one-to-one equivalent, although overall limits will be established for the credit equivalence system.

Credits taken by Chemical Engineering students not listed in the above table may be validated by means of:

1. Degree course optional credits, up to the maximum number of optional credits established for each degree course.
2. Recognised free-elective credits validated for university, cultural or representational activities will be validated for the degree course, with a maximum of up to 6 academic credits to be validated for various activities, as set out in Art. 12.8 Royal Decree 1393/2007 (participation in cultural, sporting, student representation, charity and cooperation activities).

**DEGREE IN CHEMICAL ENGINEERING. SYLLABUS SUMMARY**
**ESTRUCTURA DEL PLAN DE ESTUDIOS POR TIPO DE MATERIA**

TIPO DE MATERIA	CRÉDITOS
Formación básica (FB)	60
Obligatorias (OB)	144
Optativas incluidas	24
Prácticas Externas (OP)	12
Trabajo Fin de Grado	12
<b>Total créditos</b>	<b>240</b>

**DISTRIBUCIÓN POR CURSOS**

PRIMER CURSO		SEGUNDO CURSO		TERCER CURSO		CUARTO CURSO	
Semestre 1	Semestre 2	Semestre 3	Semestre 4	Semestre 5	Semestre 6	Semestre 7	Semestre 8
Fundamentos Químicos de la Ingeniería 6 ECTS	Fundamentos Físicos de la Ingeniería II 6 ECTS	Fundamentos Matemáticos de la Ingeniería III 6 ECTS	Laboratorio Integrado de Ingeniería Industrial 6 ECTS	Operaciones de Separación de Transferencia de Materia I 6 ECTS	Operaciones de Separación de Transferencia de Materia II 6 ECTS	Experimentación en Ingeniería Química II 6 ECTS	Trabajo Fin de Grado <sup>(1)</sup> 12 ECTS
Fundamentos Matemáticos de la Ingeniería I 6 ECTS	Fundamentos Matemáticos de la Ingeniería II 6 ECTS	Ingeniería Gráfica 6 ECTS	Análisis Químico e Instrumental 6 ECTS	Experimentación en Ingeniería Química I 9 ECTS	Química y Seguridad Industrial 6 ECTS	Simulación, Optimización y Diseño de Procesos Químicos 6 ECTS	
Fundamentos Físicos de la Ingeniería I 6 ECTS	Ampliación de Química 6 ECTS	Diseño Mecánico 6 ECTS	Química Orgánica Aplicada 6 ECTS		Ingeniería Térmica 9 ECTS	Ingeniería Bioquímica 6 ECTS	Proyectos 6 ECTS
Aplicaciones de la Informática para la Ingeniería 6 ECTS	Economía Aplicada a la Empresa Química 6 ECTS	Electrotecnia y Electrónica 6 ECTS	Tecnología de Materiales 6 ECTS	Control de Procesos 6 ECTS		Tecnología del Medio Ambiente 6 ECTS	Asignatura Optativa <sup>(2)</sup> 6 ECTS
Introducción a la Ingeniería Química 6 ECTS	Química Inorgánica Aplicada 6 ECTS	Operaciones de Flujo de Fluidos 6 ECTS	Química Física Aplicada 6 ECTS	Diseño de Reactores I 6 ECTS	Diseño de Reactores II 6 ECTS	Asignatura Optativa <sup>(2)</sup> 6 ECTS	Asignatura Optativa <sup>(2)</sup> 6 ECTS

<sup>(1)</sup> Previamente a la evaluación del Trabajo Fin de Grado, el estudiante debe acreditar las competencias en un idioma extranjero. Entre otras formas de acreditación, en la Universidad de Alicante se considera necesario superar como mínimo, el nivel B1 del Marco de Referencia Europeo para las lenguas modernas, que podrá ser elevado en el futuro.

<sup>(2)</sup> **Optatividad:** 24 créditos a cursar en los semestres 7 y 8 de los 66 créditos que se ofertan. Dentro de las asignaturas optativas se prevé la posibilidad de que el/la alumno/a realice Prácticas Externas en Empresa, bien 6 ECTS optando sólo por una asignatura o bien 12 ECTS optando por las dos.

**ASIGNATURAS OPTATIVAS**

Ampliación de Diseño Mecánico	6 ECTS	Robótica	6 ECTS
Automatización Industrial	6 ECTS	Tecnología de Procesado de Polímeros	6 ECTS
Catálisis Heterogénea e Ingeniería Electroquímica	6 ECTS	Prácticas Externas I	6 ECTS
Gestión Integrada en la Industria Química	6 ECTS	Prácticas Externas II	6 ECTS
Gestión y Tratamiento de Residuos y Aguas Industriales	6 ECTS	Inglés I	6 ECTS
Instalaciones Eléctricas	6 ECTS	Inglés II	6 ECTS
Instalaciones Sostenibles y Recursos Renovables	6 ECTS		





- [Verified Report](#)
- [Resolution from the Universities Council: Positive verification](#)
- [Resolution from the Universities Council: Accreditation renewal](#)
- [Authorization from the Valencian Government](#)


## Internal Quality Assurance System (SGIC) of the Title

---

- Structure of the Centre for Quality
  - [Comission of Internal Quality Guarantee](#)
  - [Other Commissions](#)
- [Handbook SGIC](#)
- [Procedures](#)
  - [Strategic \(PE\)](#)
  - [Key \(PC\)](#)
  - [Support \(PA\)](#)
  - [Measurement \(PM\)](#)
- [Management of the SGIC](#) (Access to ASTUA) 

## Follow-up of the Title

---

- [International quality label](#) 
- [Self-reports UA](#)
- [External reports AVAP](#)
- [Other reports](#)
- [Improvement Plans](#)
- [Progress and Learning Outcomes](#)

Information about the Centre	General information for students
<ul style="list-style-type: none"> <li>• <b>Polytechnic University College</b> Telephone:+ 34 96 590 3648 Fax:+ 34 96 590 3644 <a href="mailto:eps@ua.es">eps@ua.es</a> <a href="http://www.eps.ua.es/">http://www.eps.ua.es/</a></li> <li>• <a href="#">Mobility Programmes</a></li> <li>• <a href="#">Work experience with companies and institutions</a></li> <li>• <a href="#">Reception and welcome events</a></li> <li>• <a href="#">Tutorial Action Programme</a></li> <li>• <a href="#">Frequently asked questions about the implementation of degrees at the implementation of degrees at the Polytechnic University College</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Grants and assistance</a></li> <li>• <a href="#">Accommodation</a></li> <li>• <a href="#">Student refectories and cafeterias</a></li> <li>• <a href="#">Transport</a></li> <li>• <a href="#">Emergency medical care</a></li> <li>• <a href="#">Insurance</a></li> <li>• <a href="#">Services for students with special needs</a></li> <li>• <a href="#">Student representation and participation</a></li> <li>• <a href="#">University student identity card (TIU)</a></li> <li>• <a href="#">Frequently asked questions</a></li> </ul>
UA: General Regulations	+ Information about qualifications
<ul style="list-style-type: none"> <li>• <a href="#">Academic regulations and procedures of the University of Alicante</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Official State Gazette (BOE) on publication of course programmes</a></li> <li>• <a href="#">Presentation document for the Degree in Chemical Engineering</a></li> <li>• <a href="#">Information pamphlet</a></li> <li>• <a href="#">Video presentation of the degree (EPS)</a></li> <li>• <a href="#">Video presentation of the degree (Communication Office)</a></li> </ul>