

DEGREE IN BIOLOGY (2019-20)

Código: C054	Fecha de aprobación: 22/03/2012	Precio: 20,27 1st-registration credits
Créditos: 240	Título: Undergraduate 3-5 years (ECTS)	

RAMA

Sciences

PLAN

DEGREE IN BIOLOGY

TIPO DE ENSEÑANZA

Face-to-face

CENTROS DONDE SE IMPARTE

Faculty of Science

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

60 créditos

Curso	Título	Créditos	Subject
1	CORE	6	26510 - CHEMISTRY
1	CORE	6	26511 - FUNDAMENTALS OF MATHEMATICS
1	CORE	6	26512 - BIOLOGY
1	CORE	6	26513 - GENETICS
1	CORE	6	26514 - BIOCHEMISTRY I
1	CORE	6	26515 - CELLULAR BIOLOGY
1	CORE	6	26516 - STATISTICS
1	CORE	6	26517 - PHYSICS
1	CORE	6	26518 - GEOLOGY
1	CORE	6	26519 - INTRODUCTION TO RESEARCH IN BIOLOGY

SECOND YEAR

COMPULSORY SUBJECTS

60 créditos

Curso	Título	Créditos	Subject
2	COMPULSORY	6	26520 - HISTOLOGY
2	COMPULSORY	6	26521 - ECOLOGY
2	COMPULSORY	6	26522 - ZOOLOGY I
2	COMPULSORY	6	26523 - BOTANY
2	COMPULSORY	6	26524 - MICROBIOLOGY
2	COMPULSORY	6	26525 - ANIMAL PHYSIOLOGY I
2	COMPULSORY	6	26526 - BIOCHEMISTRY II
2	COMPULSORY	6	26527 - ZOOLOGY II
2	COMPULSORY	6	26528 - PLANT BIODIVERSITY
2	COMPULSORY	6	26529 - PLANT PHYSIOLOGY: NUTRITION, TRANSPORT AND METABOLISM

THIRD YEAR

COMPULSORY SUBJECTS

60 créditos

Curso	Título	Créditos	Subject
3	COMPULSORY	6	26530 - ANIMAL PHYSIOLOGY II
3	COMPULSORY	6	26531 - ECOLOGY OF POPULATIONS AND COMMUNITIES
3	COMPULSORY	6	26532 - GENERAL IMMUNOLOGY
3	COMPULSORY	6	26533 - FURTHER MICROBIOLOGY
3	COMPULSORY	6	26534 - PHYSIOLOGY OF PLANT DEVELOPMENT
3	COMPULSORY	6	26535 - EXTENSION OF GENETICS
3	COMPULSORY	6	26536 - MOLECULAR TECHNIQUES
3	COMPULSORY	6	26537 - STRUCTURAL AND FUNCTIONAL TECHNIQUES
3	COMPULSORY	6	26538 - MODELLING ECOLOGICAL SYSTEMS
3	COMPULSORY	6	26539 - METHODS IN BIODIVERSITY

FOURTH YEAR

COMPULSORY SUBJECTS

24 créditos

Curso	Título	Créditos	Subject
4	END OF DEGREE WORK	18	26999 - FINAL PROJECT
4	COMPULSORY	6	26560 - BIOLOGY PROJECTS

OPTIONAL SUBJECTS

36 créditos

Curso	Título	Créditos	Subject
4	OPTIONAL	6	26500 - TRAINEESHIP A
4	OPTIONAL	6	26501 - TRAINEESHIP B
4	OPTIONAL	6	26540 - HUMAN PHYSIOLOGY
4	OPTIONAL	6	26541 - BIOLOGY OF DEVELOPMENT
4	OPTIONAL	6	26542 - APPLIED GENETICS
4	OPTIONAL	6	26543 - ENZYMATIC BIOTECHNOLOGY AND METABOLIC ENGINEERING
4	OPTIONAL	6	26544 - APPLIED MICROBIOLOGY
4	OPTIONAL	6	26545 - CELL CULTURES AND TISSUE ENGINEERING

4	OPTIONAL	6	26546 - APPLIED IMMUNOLOGY AND IMMUNOPATHOLOGY
4	OPTIONAL	6	26547 - FUNDAMENTALS OF MOLECULAR AND MICROBIAL BIOTECHNOLOGY
4	OPTIONAL	6	26550 - EDAPHOLOGY
4	OPTIONAL	6	26551 - PLANT ECOPHYSIOLOGY
4	OPTIONAL	6	26552 - BIOGEOGRAPHY
4	OPTIONAL	6	26553 - BIOLOGY OF CONSERVATION
4	OPTIONAL	6	26554 - ECOLOGICAL ASSESSMENT OF LAND AND ENVIRONMENTAL IMPACT
4	OPTIONAL	6	26555 - ECOSYSTEM MANAGEMENT AND RESTORATION
4	OPTIONAL	6	26556 - MARINE BIOLOGY
4	OPTIONAL	6	26557 - THE SOIL-PLANT RELATIONSHIP

LANGUAGE

Superado este bloque se obtiene

DEGREE IN BIOLOGY

ROUTE 1. ENVIRONMENTAL BIOLOGY

OPTIONAL SUBJECTS

30 créditos

Curso	Título	Créditos	Subject
4	OPTIONAL	6	26500 - TRAINEESHIP A
4	OPTIONAL	6	26550 - EDAPHOLOGY
4	OPTIONAL	6	26551 - PLANT ECOPHYSIOLOGY
4	OPTIONAL	6	26552 - BIOGEOGRAPHY
4	OPTIONAL	6	26553 - BIOLOGY OF CONSERVATION
4	OPTIONAL	6	26554 - ECOLOGICAL ASSESSMENT OF LAND AND ENVIRONMENTAL IMPACT
4	OPTIONAL	6	26555 - ECOSYSTEM MANAGEMENT AND RESTORATION
4	OPTIONAL	6	26556 - MARINE BIOLOGY
4	OPTIONAL	6	26557 - THE SOIL-PLANT RELATIONSHIP

Superado este bloque se obtiene

ROUTE 1: ENVIRONMENTAL BIOLOGY

ROUTE 2. BIOTECHNOLOGY AND BIO-HEALTH

OPTIONAL SUBJECTS

30 créditos

Curso	Título	Créditos	Subject
4	OPTIONAL	6	26501 - TRAINEESHIP B
4	OPTIONAL	6	26540 - HUMAN PHYSIOLOGY
4	OPTIONAL	6	26541 - BIOLOGY OF DEVELOPMENT
4	OPTIONAL	6	26542 - APPLIED GENETICS
4	OPTIONAL	6	26543 - ENZYMATIC BIOTECHNOLOGY AND METABOLIC ENGINEERING
4	OPTIONAL	6	26544 - APPLIED MICROBIOLOGY
4	OPTIONAL	6	26545 - CELL CULTURES AND TISSUE ENGINEERING
4	OPTIONAL	6	26546 - APPLIED IMMUNOLOGY AND IMMUNOPATHOLOGY
4	OPTIONAL	6	26547 - FUNDAMENTALS OF MOLECULAR AND MICROBIAL BIOTECHNOLOGY

Superado este bloque se obtiene

ROUTE 2: BIOTECHNOLOGY AND BIO-HEALTH

DEGREE COURSE AIMS

The aim of the degree course is to provide students with a thorough understanding of the morphology, systems, structures, functions and interactions of living organisms and related analysis, whether for teaching, research or applied purposes.

The activities for which the degree qualifies graduates include:

1. The study, identification, analysis and classification of living organisms and of biological agents and materials, together with their remains and signs of activity.
2. Research, development and control of bio-technological processes.
3. Production, transformation, manipulation, conservation, identification and quality control of biologically-sourced materials.
4. The study of the biological effects of products, irrespective of their nature, and the control of their actions.
5. Genetic studies and their application.
6. Ecological studies, evaluation of environmental impacts, planning, management, exploitation and conservation of land and marine populations, ecosystems and natural resources.
7. Scientific divulgation and technical consultancy and teaching regarding biological topics.
8. All activities related to Biology.

- [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

The University of Alicante Degree in Biology course programme comprises a total of 240 credits, spread out over 4 years, each of which is worth 60 ECTS credits. The work is distributed evenly into 30 ECTS per semester. These 240 credits cover all the theoretical and practical learning to be acquired by students.

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

DISTRIBUTION OF CREDITS PER SUBJECT TYPE

Subject type	Credits
Core	60
Compulsory	126
Optional	36
Final Project	18
Total credits	240

GENERAL DESCRIPTION OF THE COURSE PROGRAMME

The Course Programme is structured into four modules: core, compulsory, complementary and optional.

- **The core module** is taken in the first year and is worth 60 credits. 42 of these form core subjects in the area of the Sciences (BR), and comprise the disciplines Mathematics, Physics, Chemistry, Biology and Geography, whilst 12 form core subjects in the area of the Health Sciences (B), and comprise the disciplines Statistics and Biochemistry. In addition, the compulsory cross-disciplinary core course, Introduction to Research in Biology, is worth 6 credits (T) and is aimed at enabling students to acquire practical proficiency in searching for and handling biological information, cross-disciplinary skills such as IT, oral and written communication and reading documents in English (priority cross-disciplinary skills at the University of Alicante), and teamwork. Biochemistry (12 ECTS) is divided into two modules: Core and Compulsory, each worth 6 ECTS.

- **The Compulsory Module** is taught in the second and third years (semesters, 4, 5, 6 and 7). Students are required to take 96 credits in each of the compulsory Biology courses: Biochemistry, Genetics, Histology, Botany, Zoology, Microbiology, Ecology, and Animal and Plant Physiology. Courses are sub-divided into subjects. Subjects are worth 6 credits and comprise the theoretical and practical contents of each course. External fieldwork, computer work and laboratory work credits are broken down differently for each of the courses.

- Additional third-year compulsory courses also include Molecular Techniques, Structural and Functional Techniques, Biogeochemical Models and Cycles, and Analysing Biodiversity. These instrumental courses (each worth 6 credits) are taught in semester 6. These four courses, along with the compulsory 4th year (Semester 8) Biology Project, **comprise the complementary module**, consisting of subjects that complement the Biology Graduate's education, enabling students to acquire the skills necessary to carry out the regulated professional duties of Biologists. The eminently practical nature of these subjects makes them of particular relevance to the acquisition of skills and expertise, with the aim of rounding off the procedures and learning acquired by students in the compulsory and complementary modules, applying them to solve complex problems and exercising a greater degree of autonomy.

- **The optional module** consists of two routes worth a total of 84 ECTS; the **Environmental Biology** route and the **Biotechnology and Bio-Health** route, each worth 42 ECTS. 14 optional subjects are offered in total, each worth 6 credits, including the optional subjects "Work Experience A" (Environmental Biology route) and "Work Experience B" (Biotechnology and Bio-Health route). The optional courses mainly comprise applied subjects and are aimed at complementing the education of future graduates by offering an insight into Biology as it is applied to different fields. Students are required to choose six optional subjects from one or other of the routes, of the seven offered on each (including work experience). Work experience is worth up to 6 optional credits.

Students are required to take the compulsory course "Biology Projects", worth 6 credits, and complete the Final Project (18 credits).

The **Final Project** is the final phase of the programme and is worth 18 ECTS. These credits are divided into three blocks, each worth 6 ECTS. Two of these blocks are practical, while the other is written. Within the two practical blocks, students may carry out a range of activities, including an information search, data collection and analysis, or research (laboratory, computer, fieldwork, industrial processes, bibliography, etc.), among others. These practical activities can be carried out in research institutes or the research departments of businesses or institutions, according to the scientific activity involved. In their Final Project, students are expected to demonstrate that they have acquired the skills associated with the Degree, through the preparation, presentation, and defence of a report on an original student project related to Biology, which may include experimental, computational or theoretical aspects or a practical project in Biology. Before evaluation their final projects, students must show academic certification verifying fluency in a foreign language to B1 level.

OPTIONAL SUBJECTS AND ROUTES

The Degree in Biology can follow either of two routes: The **Environmental Biology** route or the **Biotechnology and Bio-Health** route, each worth 42 ECTS. 14 optional subjects are offered in total, each worth 6 credits, including the optional subjects "**Work Experience A**" (Environmental Biology route) and "**Work Experience B**" (Biotechnology and Bio-Health route). In semester 7, students are required to choose 5 subjects from the total of 6 offered for each route; in semester 8, they are required to take one of two possible subjects. "Work Experience A" or "Work Experience B" may be taken in either of the two semesters, but the student is required to choose that which corresponds to the route taken. Subjects will be assigned to semesters 7 and 8 on an annual rotation basis.

The Course Programme proposes the following **optional work experience** modalities:

1. Work Experience unrelated to the Final Project (TFG): Successfully completed work experience projects are worth a total of 6 optional credits.
2. Work experience related to the Final Project: 6 optional credits may be taken as work experience, after which students may continue with one or two practical blocks from the Final Project, totalling 18 ECTS.

Students may take up to 12 work experience credits related exclusively to the practical blocks of the Final Project. In this case, the Degree Supplement will specify that work experience comprised part of the student's Final Project.

In accordance with the reglamento approved by Council of Government for the academic recognition of cultural university activities, sportive, of representation estudiantil, solidarias and of cooperation of the University of Alicante, the student will have to have guaranteed the possibility to obtain academic recognition of until a maximum of six credits optativos of the total of the plan of studies cursado, by the participation in cultural university activities, sportive, of representation estudiantil, solidarias and of cooperation. Before the beginning of each academic course, the Council of Government will define the nature of the activities that will have this academic recognition.

OPTIONAL SUBJECTS
BIOTECHNOLOGY AND BIO-HEALTH
HUMAN PHYSIOLOGY
BIOLOGY OF DEVELOPMENT
ENZYMATIC BIOTECHNOLOGY AND METABOLIC ENGINEERING
APPLIED MICROBIOLOGY
TISSUE AND MOLECULAR ENGINEERING
APPLIED GENETICS
APPLIED IMMUNOLOGY AND IMMUNOPATHOLOGY
BASICS OF MOLECULAR AND MICROBIAL BIOTECHNOLOGY
WORK EXPERIENCE B
ENVIRONMENTAL BIOLOGY
EDAPHOLOGY
PLANT ECOPHYSIOLOGY
BIOGEOGRAPHY
CONSERVATION BIOLOGY
ECOLOGICAL EVALUATION OF LAND AND ENVIRONMENTAL IMPACT
ECOSYSTEM MANAGEMENT AND RESTORATION
THE SOIL-PLANT RELATIONSHIP
MARINE BIOLOGY
WORK EXPERIENCE A

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](#)
- [A.R.A. Groups \(High academic achievement\)](#)

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																
	0,2		X					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: Sciences). 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 2011-12	0.1																						
	0.2		x	x		x			x	x									x	x			x
Academic Years 2012-13 2013-14 2014-15	0.1			x					X														x
	0.2		x							x									x	x			
Academic Year 2015-16 2016-17	0.1								x														x
	0.2		x	x		x				x									x	x			

PROCEDURE FOR APPLYING FOR ADMISSION: PRE-ENROLMENT AND REGISTRATION

- Anticipated number of places offered during the first pre-enrolment session: 160
- 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

It is recommended that students who wish to study for a degree in Biology have a basic scientific-technical and health sciences education, and should have studied, at least, the subjects Biology and Chemistry in their second year of the high school diploma course. They should also have some knowledge of Earth Sciences, Mathematics II and Physics, in addition to showing awareness of environmental problems.

Among the qualities the future Biology 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

YEARS	NUMBER OF PLACES	PASS MARKS						
		GENERAL	OVER 25	OVER 40	OVER 45	GRADUATES	SPORTSPEOPLE	DISABLED
2010-11	160	9,123	6,835	---	7,025	6,240	---	6,756
2011-12	160	8,886	7,728	---	---	6,790	---	---

2012-13	160	9,401	6,565	---	---	6,180	---	5,000
2013-14	160	8,826	5,345	---	---	5,000	---	---
2014-15	160	9,300	5,000	---	---	6,200	---	5,000
2015-16	160	9,640	6,270	---	---	6,460	8,970	---
2016-17	160	9,850	5,000	---	---	5,000	5,000	---
2017-18	160	9,718	5,000	---	---	5,000	5,000	5,000

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

A.R.A. GROUPS (HIGH ACADEMIC ACHIEVEMENT)

The groups of high performance academician (ARA), to reinforce the potential of the most distinguished students since the beginning of their university studies offering part of teaching in English, as well as a series of aid and support for their training.

Students who want to receive teaching on a group ARA must request it at the time of enrolment take place. Shall be assessed the academic record and accredited knowledge of English.

[General information about ARA groups](#)
[Information pamphlet](#)

PROFESSIONAL PROFILES

According to the Statutes of the Official College of Biologists (COB) specifying the main professional functions of biologists, the principle areas of professional practice include:

- Health professionals in clinical laboratories, human reproduction centres, public health, nutrition and dietetics, and animal and plant health, among others. By means of official training as Consultant Biologists (Biólogo Interno Residente – BIR), graduates may work in clinical laboratories in the fields of biochemistry, clinical analysis, microbiology and parasitology, immunology, radiopharmacy and pharmacology, and radiophysics. They may also seek careers in other fields concerning human health, such as human reproduction, IVF and other assisted reproduction techniques, and genetic counselling (for which they are almost exclusively competent, due to their wide-ranging training in epigenetics and molecular, human and cancer genetics); and in the agro-food and environmental areas of public health, taking part in all aspects of risk analysis (identification, management and communication).
- Research and development in all applied areas and key advances in experimental and life sciences, working in research centres and in the research and development departments of businesses, industries and hospitals. Biology graduates play an important role in the progress of science and its social and economic repercussions (agriculture, food, biotechnology, animal and plant diversity, animal research, genomics, proteomics, the environment, human health and reproduction, etc.).
- Industry professionals, principally in pharmaceuticals, agro-food, cosmetics and chemistry, with responsibilities in technical departments, production and quality control, biochemistry, microbiology, toxicology, physiology, pharmacology and epidemiology, and other scientific perspectives inherent to professional research and development.
- Agriculture professional, optimising current plant, animal and fungus crops and seeking new lines of exploitable live resources. Genetic enhancement via classical methods or genetic engineering, optimising conditions for growth, nutrition and improved reproductive yield are all skills provided by the knowledge acquired on the Degree course. Aspects such as aquaculture and the husbandry of exotic or native species for commercial purposes, and the husbandry of animal, plant, fungus and microbial species for preservation or improvement purposes should also be highlighted.
- The environment, mainly in sectors such as land conservation, management, use and control, management of biological resources – forestry, agricultural, marine, etc., waste management, environmental impact assessment and environmental restoration. Other professional activities include technicians, managers, auditors or consultants in the public sector, businesses or project management firms, the organisation and management of protected natural spaces, gardens and museums, and agricultural, industrial and urban pollution studies. Responsibilities also comprise emitting expert recommendations with regard to sustainability and the planning and rational use of natural resources (COB, 2001).
- Information, documentation and education in museums, natural parks, zoos, botanical gardens, publishing houses, press offices, businesses, scientific foundations, the press and television, as guides, monitors, writers, editors, specialist journalists, publicists, scientific advisors, and science, life and environmental illustrators or photographers.
- Marketing of products and services related to all aspects of biology described in the foregoing paragraphs.
- Business management and organisation, in business environments related to the training of biologists and exercise of the profession.
- Teaching in secondary schools, universities and ongoing and post-graduate professional training, in areas related to scientific knowledge in general and in particular to life sciences and experimental sciences. Biologists also supervise and manage teaching centres, and provide educational consultancy for the dissemination of scientific culture in society (cf. Silgado, 1999).

In addition to these clearly defined professional fields for biologists, recent studies (Michavila & Pérez, 2007) show that in the past decade, UA has seen major growth in graduate employment in sectors such as industry, energy, construction and market services, all fields in which biologists play an increasingly important role.

IMPLEMENTATION*Timescale for the implementation of the Degree Course*

Academic Year	Implementation of the new Degree in Biology (Grado)	Phasing out of the former degree in Biology (Licenciatura)*
2010-2011	1st Year	1st Year
2011-2012	2 nd Year	2 nd Year
2012-2013	3 rd Year	3 rd Year
2013-2014	4 th Year	4 th Year
2014-2015		5 th Year

* This refers to the course no longer being taught. However, students are entitled to sit two annual exams in the two years following the implementation of the new Degree course (grado) in the corresponding course.

The new Degree Course in Biology (Grado) will be implemented from the academic year 2010-2011 onwards. According to this plan, by the academic year 2013-2014, the new Degree plan (Grado) will be fully underway.

CREDIT EQUIVALENCE BETWEEN THE FORMER DEGREE IN BIOLOGY (LICENCIATURA) TO THE NEW DEGREE IN BIOLOGY (GRADO)

Former Degree (Licenciatura)	New Degree (Grado)
Mathematics (6 credits)	Basic Mathematics (6 credits)
Biomathematics (6 credits)	Basic Mathematics (6 credits)
Chemistry (6 credits)	Chemistry (6 credits)
Physics of Biological Processes (6 credits)	Physics (6 credits)
Exogenous Geology (6 credits)	Geology (6 credits)
Endogenous Geology (6 credits)	Geology (6 credits)
Biochemistry (10 credits)	Biochemistry I (6 credits)
Plant and Animal Cytology and Histology (10 credits)	Cellular Biology (6 credits)
	Histology (6 credits)
Botany (10 credits)	Botany (6 credits)
Zoology (10 credits)	Zoology I (6 credits)
	Zoology II (6 credits)
Biostatistics (6 credits)	Statistics (6 credits)
Introduction to Statistical Inference (6 credits)	Statistics (6 credits)
Plant Physiology (10 credits)	Plant Physiology: Nutrition, Transport and Metabolism (6 credits)
Microbiology (10 credits)	Microbiology (6 credits)
Introduction to Research Design and Data Analysis (6 credits)	Introduction to Research (6 credits)
Animal Physiology (10 credits)	Animal Physiology I (6 credits)
General Physiology and Biophysics (6 credits)	Animal Physiology I (6 credits)
Ecology (10 credits)	Ecology (6 credits)
	Ecology of Populations and Communities (6 credits)
Animal Physiology (10 credits)	Animal Physiology II (6 credits)
Physiological Regulation and Integration (4.5 credits)	Animal Physiology II (6 credits)
Genetics (10 credits)	Genetics (6 credits)
Extended Biochemistry (6 credits)	Biochemistry II (6 credits)
Extended Botany (10 credits)	Plant Biodiversity (6 credits)
Biology and Conservation of Arthropods (10 credits)	Zoology II (6 credits)
Basics of Applied Plant Physiology (9 credits)	Physiology of Plant Development (6 credits)
Molecular Genetics and Genetic Engineering (9 credits)	Applied Genetics (6 credits)
Immunology (4.5 credits)	Immunology (6 credits)
Applied Immunology (4.5 credits)	Applied Immunology and Immunopathology (6 credits)
Instrumental Techniques in Biochemistry and Molecular Biology (4.5 credits)	Molecular Techniques (6 credits)
General Physiology and Biophysics (6 credits)	Structural and Functional Techniques (6 credits)
Introduction to the Study of Ecosystems (6 credits)	Analysing Biodiversity (6 credits)
Biogeochemistry (4.5 credits)	Modelling Ecological Systems (6 credits)
Ecology of Systems and Modelling (4.5 credits)	
Biology of Reproduction and Development	Biology of Development (6 credits)

(4.5 credits)	
Cellular Bases of Behaviour (4.5 credits)	
Metabolic Regulation (6 credits)	Enzymatic Biotechnology and Metabolic Engineering (6 credits)
Enzymology (6 credits)	Enzymatic Biotechnology and Metabolic Engineering (6 credits)
Human Physiology (6 credits)	Human Physiology (6 credits)
Human Molecular Genetics (6 credits)	Applied Genetics (6 credits)
Molecular and Applied Genetics (6 credits)	Applied Genetics (6 credits)
Industrial Microbiology (4.5 credits)	Applied Microbiology (6 credits)
Clinical Microbiology (6 credits)	Applied Microbiology (6 credits)
Food Microbiology (4.5 credits)	Extended Microbiology (6 credits)
Environmental Microbiology (6 credits)	Extended Microbiology (6 credits)
Marine Microbiology (6 credits)	Extended Microbiology (6 credits)
The Biochemistry and Molecular Biology of Haloarchaea (6 credits)	
Plant Biotechnology (6 credits)	Cell Cultures and Tissue Engineering (6 credits)
Methods and Techniques in Medical Biopathology (6 credits)	Cell Cultures and Tissue Engineering (6 credits)
Biopolymers (6 credits)	Molecular and Microbial Biotechnology (6 credits)
Geographical Information Systems in Ecology (6 credits)	Ecological Evaluation of Land and Environmental Impacts (6 credits)
Environmental Impact (6 credits)	Ecological Evaluation of Land and Environmental Impacts (6 credits)
Human Ecology and Land Use Management (6 credits)	Ecological Evaluation of Land and Environmental Impacts (6 credits)
Edaphology (6 credits)	Edaphology (6 credits)
Applied Edaphology (4.5 credits)	The Soil-plant Relationship (6 credits)
Phytogeography (6 credits)	Biogeography (6 credits)
Population Ecology of Vascular Plants (6 credits)	Ecology (6 credits)
Ecology of Land Vertebrates (6 credits)	Ecology (6 credits)
Plant Ecophysiology (6 credits)	Plant Ecophysiology (6 credits)
Preservation and Restoration of Natural Spaces (6 credits)	Ecosystem Management and Restoration (7 credits)
Managing Biological Resources (6 credits)	Ecosystem Management and Restoration (7 credits)
Conservation and Restoration of Natural Spaces (6 credits)	Biology of Conservation(6 credits)
Evolution and Zoogeography (6 credits)	Biogeography (6 credits)
Work Experience (6 credits)	Work Experience A (6 credits)
Work Experience (6 credits)	Work Experience B (6 credits)
Marine Biology (9 credits)	Marine Biology (6 credits)
Molecular Microbiology (6 credits)	
Physiological Adaptations in Special Environments (6 credits)	Animal Physiology II (6 credits)
Bioactivators in Plant Production (6 credits)	
Biology of Benthos (6 credits)	
Fisheries Biology and Aquaculture (6 credits)	

<i>Biology and Control of Weeds (6 credits)</i>	
<i>Biology and Control of Agroforestry Pests (6 credits)</i>	
<i>Biopathology (6 credits)</i>	
<i>The Biochemistry and Molecular Biology of Plants (6 credits)</i>	
<i>Economic Botany (6 credits)</i>	
<i>Air and Water Pollution (6 credits)</i>	
<i>Controlled Crops (6 credits)</i>	
<i>Molecular Diagnosis and Gene Therapy (6 credits)</i>	
<i>Dynamics of Marine Populations (6 credits)</i>	
<i>Ecotechnology and Eco Audits (6 credits)</i>	
<i>Ecotoxicology (6 credits)</i>	
<i>Environmental Education (6 credits)</i>	
<i>Medical-Veterinary Entomology (6 credits)</i>	
<i>The Physiology of Exercise (6 credits)</i>	
<i>Physiology and Technology of Harvested Fruit and Vegetables (6 credits)</i>	
<i>Physiopathology (6 credits)</i>	
<i>Phytopathology (6 credits)</i>	
<i>Environmental geology (6 credits)</i>	
<i>Palaeontology (6 credits)</i>	<i>Geology (6 credits)</i>
<i>Hydrogeology (6 credits)</i>	
<i>Industrial Immunology (6 credits)</i>	
<i>Immunopathology (6 credits)</i>	<i>Applied Immunology and Immunopathology (6 credits)</i>
<i>Introduction to Chaos Theory and Fractals. Biological Applications (6 credits)</i>	
<i>Tropical Medicine and Clinical Parasitology (6 credits)</i>	
<i>Methods and Techniques in Palaeobiology, Palaeopathology and Forensic Biology (6 credits)</i>	
<i>Vertebrate Zoology (6 credits)</i>	<i>Zoology I (6 credits)</i>
<i>Biological Oceanography (6 credits)</i>	
<i>Chemical Oceanography and Marine Pollution (6 credits)</i>	
<i>Propagation of Plant Species (6 credits)</i>	
	<i>Biology Projects</i>
	<i>Final Project</i>

Two routes for credit equivalence recognition have been established, both requiring application by the interested party and subject to approval by the Commission for Credit Recognition and Transfer and Assessment of Academic Records.

Individual equivalences by subject:

The above Table details credit equivalence for credits taken on the former Degree in Biology (*Licenciatura*) at the University of Alicante, and the new Degree (*Grado*) in Biology.

For students transferring from other centres, the Commission for Credit Recognition and Transfer and Assessment of Academic Records will

consider the case, on the basis of the above Table of Credit Equivalence

Equivalence recognition by subject blocks:

- a) Students who have successfully completed the first full year will be considered as having passed the first year of the new Degree (*Grado*). This in addition to the application of the credit equivalences listed in the above Table for subjects corresponding to the remaining academic years.
- b) Any core, compulsory and optional subjects taken by students on the current Degree (*Licenciatura*) programme in Biology which do not have direct equivalence with subjects on the Degree (*Grado*), will be given credit equivalence as Optional credits.
- c) Any other equivalence recognition requested will be considered by the Commission for Credit Recognition and Equivalence, in accordance with current legislation.

Correspondence between degree courses in the Faculty of Sciences at the UA:

The Faculty of Sciences at the University of Alicante has proposed five degree courses in the area of the Sciences (Biology, Marine Sciences, Geology, Chemistry and Mathematics) and one degree course in the area of Health Sciences (Optics and Optometry). In order to facilitate mobility between courses at the end of the first year, it has been agreed that recognition will be given to all credits obtained in their first year of study for students joining the Biology Degree from other Science Faculty degree programmes, whether or not they are from the Sciences. This may mean that in the second year of the Degree, some students lack a basic foundation, which could hinder the progress of their studies. In these cases, tutorial help will be offered to students in order to remedy this lack and provide guidance in certain fundamental areas.

DEGREE IN BIOLOGY. SYLLABUS SUMMARY

ESTRUCTURA DEL PLAN DE ESTUDIOS POR TIPO DE MATERIA

TIPO DE MATERIA	CRÉDITOS
Formación básica (FB)	60
Obligatorias (OB)	126
Optativas incluidas	36
Prácticas Externas (OP)	18
Trabajo Fin de Grado	18
Total créditos	240

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
Química 6 ECTS	Genética 6 ECTS	Histología 6 ECTS	Fisiología Animal I 6 ECTS	Fisiología Animal II 6 ECTS	Inmunología General 6 ECTS	Asignatura Optativa de Itinerario ⁽²⁾ 6 ECTS	Proyectos en Biología 6 ECTS
Fundamentos Matemáticos 6 ECTS	Bioquímica I 6 ECTS	Bioquímica II 6 ECTS	Ecología 6 ECTS	Ecología de Poblaciones y Comunidades 6 ECTS	Técnicas Moleculares 6 ECTS	Asignatura Optativa de Itinerario ⁽²⁾ 6 ECTS	
Biología 6 ECTS	Biología Celular 6 ECTS	Zoología I 6 ECTS	Zoología II 6 ECTS	Ampliación de Microbiología 6 ECTS	Técnicas Estructurales y Funcionales 6 ECTS	Asignatura Optativa de Itinerario ⁽²⁾ 6 ECTS	Trabajo Fin de Grado ⁽¹⁾ 18 ECTS
Física 6 ECTS	Estadística 6 ECTS	Botánica 6 ECTS	Biodiversidad Vegetal 6 ECTS	Ampliación Genética 6 ECTS	Modelización de Sistemas Ecológicos 6 ECTS	Asignatura Optativa de Itinerario ⁽²⁾ 6 ECTS	
Geología 6 ECTS	Iniciación a la Investigación en Biología 6 ECTS	Microbiología 6 ECTS	Fisiología Vegetal: Nutrición, Transporte y Metabolismo 6 ECTS	Fisiología del Desarrollo Vegetal 6 ECTS	Métodos en Biodiversidad 6 ECTS	Asignatura Optativa de Itinerario ⁽²⁾ 6 ECTS	Asignatura Optativa de Itinerario ⁽²⁾ 6 ECTS

⁽¹⁾ El alumno deberá acreditar, previamente a la evaluación del Trabajo Fin de Grado, conocimientos de un idioma extranjero a nivel B1 mediante certificación académica. El alumno podrá realizar hasta 12 créditos de prácticas externas ligadas exclusivamente a los bloques experimentales del Trabajo de Fin de Grado. En este caso el suplemento al título especificará que el alumno ha realizado parte del trabajo de fin de grado en prácticas externas.

⁽²⁾ El grado en Biología consta de dos itinerarios: **Itinerario Biología Ambiental** e **Itinerario Biotecnología y Biosanitaria**, de 54 ECTS cada uno. Se ofertan en total 18 asignaturas **optativas** de 6 créditos, incluidas las asignaturas optativas "Prácticas Externas A" (Itinerario Biología Ambiental) y "Prácticas Externas B" (Itinerario Biotecnología y Biosanitaria). En cada itinerario se ofertan, en los semestres 7 y 8, un total de nueve asignaturas (incluidas las prácticas externas). Para constituir un itinerario, el alumnado puede elegir cursar un mínimo de cinco asignaturas optativas, del itinerario correspondiente. Las asignaturas "Prácticas Externas A" o "Prácticas Externas B" pueden ser cursadas por el estudiante en cualquiera de los dos semestres, pero sólo una de ellas, atendiendo al itinerario escogido.

Las **Prácticas Externas optativas** se pueden realizar según las siguientes modalidades:

- 1.- Prácticas no vinculadas al Trabajo Fin de Grado: Las prácticas externas, una vez realizadas y aprobadas, podrán ser reconocidas por 6 créditos optativos.
- 2.- Prácticas externas relacionadas con el Trabajo Fin de Grado: Se pueden realizar 6 créditos optativos como prácticas en empresa y continuar con uno o dos de los bloques experimentales del Trabajo Fin de Grado con un máximo de 18 ECTS.

ITINERARIO: BIOLOGÍA AMBIENTAL		ITINERARIO: BIOTECNOLOGÍA Y BIOSANITARIA	
Edafología	6 ECTS	Fisiología Humana	6 ECTS
Ecofisiología Vegetal	6 ECTS	Biología del Desarrollo	6 ECTS
Biogeografía	6 ECTS	Biotecnología Enzimática e Ingeniería Metabólica	6 ECTS
Biología de la Conservación	6 ECTS	Microbiología Aplicada	6 ECTS
Evaluación Ecológica del Territorio e Impacto Ambiental	6 ECTS	Cultivos Celulares e Ingeniería Tisular	6 ECTS
Gestión y Restauración de Ecosistemas	6 ECTS	Genética Aplicada	6 ECTS
Relación Suelo-Planta	6 ECTS	Inmunología Aplicada e Inmunopatología	6 ECTS
Biología Marina	6 ECTS	Fundamentos de Biotecnología Molecular y Microbiana	6 ECTS
Prácticas Externas A	6 ECTS	Prácticas Externas B	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

- [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"> ● Faculty of Sciences Telephone:+ 34 96 590 3557 Fax:+ 34 96 590 3781 facu.ciencias@ua.es http://ciencias.ua.es/en/ ● Mobility Programmes ● Work experience with companies and institutions ● Reception and welcome events ● Tutorial Action Programme 	<ul style="list-style-type: none"> ● Grants and assistance ● Accommodation ● Student refectories and cafeterias ● Transport ● Emergency medical care ● Insurance ● Services for students with special needs ● Student representation and participation ● University student identity card (TIU) ● Frequently asked questions
UA: General Regulations	+ Information about qualifications
<ul style="list-style-type: none"> ● Academic regulations and procedures of the University of Alicante 	<ul style="list-style-type: none"> ● Official State Gazette (BOE) on publication of course programmes ● Own Web ● Information pamphlet ● Video presentation of the degree