



## Information about the subject

**Degree:** Bachelor of Science Degree in Biotechnology

**Faculty:** Faculty of Veterinary Medicine and Experimental Sciences

**Code:** 1100210 **Name:** Science, Reason and Faith

**Credits:** 6,00 **ECTS Year:** 2 **Semester:** 2

**Module:** Social and Economic Aspects of Molecular Biosciences and Biotechnology

**Subject Matter:** Social Doctrine of the Catholic Church **Type:** Compulsory

**Department:** Theology, Social Doctrine of the Church and Deontology or Professional Ethics

**Type of learning:** Classroom-based learning

**Languages in which it is taught:** Spanish

### Lecturer/-s:

1102

Jose Manuel Hernández Castellón (**Responsible Lecturer**)

[jm.hernandez@ucv.es](mailto:jm.hernandez@ucv.es)



## Module organization

### Social and Economic Aspects of Molecular Biosciences and Biotechnology

Subject Matter	ECTS	Subject	ECTS	Year/semester
Anthropology	6,00	Anthropology	6,00	1/2
Social Doctrine of the Catholic Church	6,00	Science, Reason and Faith	6,00	2/2
Legal and Economical aspects in Biotechnology	6,00	Legal and Economic Aspects of Biotechnology	6,00	4/2
Ethics and Professional Deontology	6,00	Social Morality, Ethics and Deontology	6,00	4/2
English	6,00	English	6,00	1/2

## Recommended knowledge

No prior knowledge is required



## Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 The student has understood and assimilated the contents of the subject.
- R2 The student is able to solve problems or case studies related to the subject contents, by using different resources (bibliographic, IT, etc.)
- R3 The student is able to write an intelligible and organized text on different aspects of the subject.
- R4 The student is able to present and defend his/her work adequately.
- R5 The student seeks bibliographic information from different sources and can analyze it with a critical and constructive spirit.
- R6 The student collaborates with the teacher and his/her peers throughout the learning process; he/she works in a team; treats everyone with respects, is proactive and fulfills the organization rules of the course.



## Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB1	Students acquire and understand knowledge in their field of study based on general secondary education but usually reaching a level that, although supported on advanced text books, also includes aspects involving state-of-the-art knowledge specific to their area.			X	
CB2	Students are able to apply knowledge to their work in a professional way and have the competences enabling them to state and defend views and opinions as well as perform problem-solving tasks in their field of study.				X
CB3	Students are able to collect and interpret relevant data (generally in their field of study) and give opinions that involve reflection on relevant social, scientific or ethical issues.			X	
CB4	Students can communicate information, ideas, problems and solutions to a specialized or non-specialized audience.			X	
CB5	Students develop the necessary learning skills to undertake further studies with a high level of autonomy.			X	

GENERAL		Weighting			
		1	2	3	4
CG01	Capacity to analyze and synthesize.				X

SPECIFIC		Weighting			
		1	2	3	4
CE22	Knowing and understanding contents, principles and theories related to biotechnology.				X



CE33 Knowing and complying with legislation and ethics of biotechnological processes and applications. X

CE34 Knowing main characteristics of Molecular biosciences and biotechnology communication. X

## TRANSVERSAL

## Weighting

1 2 3 4

CT02 Capacity to organize and plan. X

CT03 Mastering Spanish oral and written communication. X

CT05 Knowing and applying Basic ITC skills related to Biotechnology. X

CT06 Capacity to manage information (capacity to look for and analyze information coming from different types of sources). X

CT07 Problem solving. X

CT09 Capacity to work in interdisciplinary and multidisciplinary team. X

CT10 Interpersonal skills. X

CT11 Understanding multicultural and diverse environment X

CT12 Critical and self-critical capacity. X

CT13 Ethics. X

CT14 Capacity to learn X

CT16 Capacity to produce new ideas (creativity) X

CT19 Capacity to apply theoretical knowledge X

CT20 Research skills X

CT21 Sensitivity to environmental issues X



## Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4, R5, R6	80,00%	Written test
R1, R2, R3, R4, R5, R6	20,00%	Submission of papers

### Observations

According to the general evaluation and qualification regulations, the preferred evaluation system will be by means of continuous evaluation. Throughout the course, different tasks associated with the contents taught will be carried out to reinforce the learning of the same. These tasks are part of the continuous evaluation, so they cannot be done out of time or in second call. In order to count with their score in the final grade, the subject exam must be passed.

Finally, according to article 10 of the current assessment regulations, in the event that it is impossible for students enrolled in a face-to-face degree to attend, they may opt for 'single assessment'. This is an extraordinary and exceptional assessment system available to those students who, in a justified and accredited manner, are unable to undergo the continuous assessment system and request it within the first month of each semester, by the means provided for this purpose. The Dean of the Faculty shall decide on the admission of the student's request for a single assessment.

The use of tools based on artificial intelligence (AI) is subject to the teacher's criteria, who may establish specific limits or conditions depending on the training or assessment activity.



## MENTION OF DISTINCTION:

In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with 9 Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

## Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- M1 Teacher presentation of contents, analysis of competences, explanation and in-class display of skills, abilities and knowledge.
- M2 Group work sessions supervised by the professor. Case studies, diagnostic tests, problems, field work, computer room, visits, data search, libraries, on-line, Internet, etc. Meaningful construction of knowledge through interaction and student activity.
- M4 Supervised monographic sessions with shared participation..
- M5 Application of multidisciplinary knowledge.
- M6 Personalized and small group attention. Period of instruction and/or guidance carried out by a tutor to review and discuss materials and topics presented in classes, seminars, readings, papers, etc.
- M7 Set of oral and/or written tests used in initial, formative or additive assessment of the student
- M8 Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc. to be presented or submitted in theoretical, practical and/or small-group tutoring sessions. Work done on the university e-learning.



- M9 Student's study: Individual preparation of readings, essays, problem-solving, seminars, papers, reports, etc. to be presented or submitted in theoretical, practical and/or small-group tutoring sessions. Work done on the university e-learning platform.

## IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
ON-CAMPUS CLASS M1	R1, R2, R3, R4, R5, R6	28,00	1,12
PRACTICAL CLASSES M2, M4	R1, R2, R3, R4, R5, R6	26,00	1,04
SEMINAR M4, M5	R1, R2, R3, R4, R5, R6	0,60	0,02
GROUP PRESENTATION OF ASSIGNMENTS M5	R1, R2, R3, R4, R5, R6	0,60	0,02
TUTORIAL M1, M6	R1, R2, R3, R4, R5, R6	4,40	0,18
ASSESSMENT M7	R1, R2, R3, R4, R5, R6	2,40	0,10
<b>TOTAL</b>		<b>62,00</b>	<b>2,48</b>

## LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
AUTONOMOUS GROUP WORK M2, M4, M5, M6, M8	R1, R2, R3, R4, R5, R6	24,00	0,96
AUTONOMOUS INDIVIDUAL WORK M9	R1, R2, R3, R4, R5	64,00	2,56
<b>TOTAL</b>		<b>88,00</b>	<b>3,52</b>





## Description of the contents

Description of the necessary contents to acquire the learning outcomes.

### Theoretical contents:

Content block	Contents
Science and religion.	<ol style="list-style-type: none"><li>1.Science and religion.</li><li>2.Scientific knowledge and religious knowledge.</li><li>3.Relations between science and religion</li></ol>
Scientific materialism	<ol style="list-style-type: none"><li>1.Scientific materialism</li></ol>
History of the science-faith relationship.	<ol style="list-style-type: none"><li>1.Science and Christian faith. Holy Fathers and the Middle Ages.</li><li>2.The birth of modern science.</li><li>3.The Galileo case.</li><li>4.Cosmology and Creation.</li><li>5.Darwin and the theory of evolution.</li><li>6.The origin of life and man.</li><li>7.Modern scientists and the question about God.</li></ol>
Dialogue between science and faith.	<ol style="list-style-type: none"><li>1.Science and ethics.</li><li>2.Science, religion and the environment.</li></ol>
Christianity and history of religions.	<ol style="list-style-type: none"><li>1.Christianity and the history of religions</li></ol>



## Organization of the practical activities:

	Content	Place	Hours
PR1.	Science and religion	Lecture room	5,00
PR2.	Scientific Materialism	Lecture room	3,00
PR3.	History of the science-faith relationship	Lecture room	6,00
PR4.	Science - faith dialogue	Lecture room	6,00
PR5.	History of religions	Lecture room	6,00

## Temporary organization of learning:

Block of content	Number of sessions	Hours
Science and religion.	6,00	12,00
Scientific materialism	4,00	8,00
History of the science-faith relationship.	6,00	12,00
Dialogue between science and faith.	8,00	16,00
Christianity and history of religions.	7,00	14,00



## References

### Basic bibliography

Artigas, M. (1983). Ciencia, razón y fe. Iniciación filosófica. Editorial EUNSA: Pamplona(Navarra)

Escudero, E. (2002). Creer es razonable: fenomenología y filosofía de la religión.

EdicionesSiquem: Valencia

Pablo VI. (1965). Gaudium et spes. Recuperado

de:[http://www.vatican.va/archive/hist\\_councils/ii\\_vatican\\_council/documents/vat-ii\\_const\\_19651207\\_gaudium-et-spes\\_sp.html](http://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_const_19651207_gaudium-et-spes_sp.html)

Papa Francisco. (2013). Lumen fidei. Recuperado

de:[http://w2.vatican.va/content/francesco/es/encyclicals/documents/papa-francesco\\_20130629\\_enciclica-lumen-fidei.html](http://w2.vatican.va/content/francesco/es/encyclicals/documents/papa-francesco_20130629_enciclica-lumen-fidei.html)

Papa Francisco. (2015). Laudato si. Recuperado

de:[http://w2.vatican.va/content/francesco/es/encyclicals/documents/papa-francesco\\_20150524\\_enciclica-laudato-si.html](http://w2.vatican.va/content/francesco/es/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html)

Pío XII. (1950). Humani generis. Recuperado

de:[http://w2.vatican.va/content/pius-xii/es/encyclicals/documents/hf\\_p-xii\\_enc\\_12081950\\_humani-generis.html](http://w2.vatican.va/content/pius-xii/es/encyclicals/documents/hf_p-xii_enc_12081950_humani-generis.html)

Ratzinger, J. (2011). Fe y ciencia. Un diálogo necesario. Editorial Sal terrae: Maliaño(Cantabria)

San Juan Pablo II. (1995). Evangelium

vitae.[http://w2.vatican.va/content/john-paul-ii/es/encyclicals/documents/hf\\_jp-ii\\_enc\\_25031995\\_evangelium-vitae.html](http://w2.vatican.va/content/john-paul-ii/es/encyclicals/documents/hf_jp-ii_enc_25031995_evangelium-vitae.html)

San Juan Pablo II. (1998). Fides et ratio. Recuperado

de:<https://www.google.es/search?q=Fides+et+ratio&oq=Fides+et+ratio&aqs=chrome..69i57j0l5.4791j0j4&sourceid=chrome&ie=UTF-8>

Udías, A. (2010). Ciencia y religión. Dos visiones del mundo. Editorial Sal terrae:

Maliaño(Cantabria)