



## IDENTIFYING DATA

### Quality management and control

Subject	Quality management and control			
Code	V02G030V01911			
Study programme	(*)Grao en Bioloxía			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	4th	1st
Teaching language	Spanish			
Department	Plant Biology and Soil Sciences Business Organisation and Marketing			
Coordinator	Gallardo Medina, Mercedes Pérez Ribas, Francisco Manuel			
Lecturers	Gallardo Medina, Mercedes Pérez Ribas, Francisco Manuel			
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Web				
General description	<p>In this subject pretend that the student know and comprise the principles of the management of the quality and of the means ambiente, like this like the norms of organization and effective management of a laboratory. In this sense, will be able to purchase competitions in the application of the norm ISO 9000 of management of the quality, ISO 14000 of management of the medioambiente and ISO 17025 for the management and technical competition of the laboratories of essay and calibración.</p> <p>The schedule of the subject is approved in the Faculty Board and can be consulted in the following link: <a href="http://bioloxia.uvigo.es/en/teaching/schedules">http://bioloxia.uvigo.es/en/teaching/schedules</a></p>			

## Competencies

Code	
A1	Students should prove understanding and knowledge in this study field that starts in the Secondary Education and with a level that, even though it is supported in advanced books, also includes some aspects that involve knowledge from the vanguard of the study field.
A2	Students should know how to apply their knowledge to their work or vocation in a professional way. They also should have the competences that are usually proved through the elaboration and defence of arguments and the resolution of problems within their study field.
A3	Students should prove ability for information-gathering and interpret important data (usually within their study field) to judge relevant social, scientific or ethical topics.
A4	Students should be able to communicate information, ideas, issues and solutions to all audiences (specialist and unskilled audience).
A5	Students should develop the necessary learning skills to undertake further studies with a high degree of autonomy
B2	Ability of reading and analyzing scientific papers and having critical assessment skills to understand data collection, deducing the main idea from the least relevant ones and basing on the corresponding conclusions.
B3	Acquisition of general knowledge about the basic subjects of biology, both at theory and experimental level, without dismissing a higher specialization in subjects that are oriented to a concrete professional area.
B4	Ability in handling experimental tools, both scientific and computer technology equipment that support the search for solutions to problems related to the basic knowledge of biology and with those of a concrete labour context.
B7	Collection of information about issues of biologic interest, analysis and emission of critical opinions and reason them including the reflection about social and/or ethical aspects related to the issue.
B10	Development of analytic and abstraction skills, the intuition and the logical and rigorous thought through the study of biology and its uses.
B11	Ability to communicate in detail and clearly: knowledge, methodology, ideas, issues and solutions to all audiences (not only qualified but unskilled in Biology).

B12 Ability to identify their own educational necessities in the biology field and in concrete labour areas and to organize their learning with a high grade of autonomy in any context.

C25 Gathering background information, develop experimental work and analysing data results

C27 Developing and monitoring management systems and quality control on Biology

C29 Helping and evaluating scientific, technical, ethical, legal and socioeconomically aspects related to Biology.

C30 Controlling and counselling on every aspect related to Organisms Welfare.

C31 Knowing and handling technical and scientific apparatus.

C32 Knowing and handling basic or specific key concepts and terminology

C33 Understanding the social projection of Biology.

D1 Development of capacity of analysis and synthesis

D2 Acquisition of the organization and planning capacity for tasks and time

D6 Research and interpreting of information from different sources

D11 Adquisition of an ethical agreement with the society and the profession

D13 Sensitivity for environmental issues

D14 Adquisition of abilities in the interpersonal relationships

D16 Acceptance of a quaility commitment

D18 Development of negotiating power

### Learning outcomes

Expected results from this subject	Training and Learning Results			
Know the norms of management and of control of quality of processes, systems, in investigation, etc., related with the biology	A1	B2 B3	C27 C32 C33	D1 D6 D13 D16
Comprise the concept of systems of quality and his application Handle and apply the systems of quality more important.	A1 A2	B3	C27 C31	D2 D6 D13 D16
Know and be familiarizado with the methods of validation, calibración, calculation of uncertainties, essays of verificación, standard of quality and other parameters and systems of quality	A2	B2 B4	C31 C32	D6 D13 D16
Know evaluate, verificar and accredit the quality	A2 A5	B4 B7 B11	C27 C30	D1 D2 D13 D14 D16 D18
Comprise the importance and repercussion of the implantation of systems of quality in the professional field and to social level	A4	B10 B11	C27 C33	D11 D13 D14 D16 D18
Obtain information, evaluate and interpret results	A3	B2 B7 B10	C25	D2
Apply knowledges of management of the quality for asesorar, supervise and peritar on scientific appearances-technical, ethical, legal and partner-economic related with the biology	A2 A3	B10 B12	C29	D2 D6 D11 D13 D14 D16 D18
Know and handle the concepts, terminology and scientific instrumentation-relative technician to the management of the quality.	A1 A4	B4 B11	C32	D6 D13 D16

### Contents

Topic

Block 1.- The Quality Management System	Subject 1. The Quality management: concept and historical evolution
	Subject 2. Design and implementation of a Quality Management System
Block 2.- Models and standards for the Quality management	Subject 3. Quality Management. UNE-EN-ISO 9000
	Subject 4. Environmental management: UNE-EN-ISO 14000. EMAS
	Subject 5. Quality management in the laboratory: standards and techniques. Regulation UNE-EN ISO/IEC 17025

Block 4.- Tools for the Quality management	Subject 6. Tools for the Quality management
	Subject 7. The continuous improvement and the participatory management of the quality
Seminars and ABPs	Develop in small groups a project for a company, organization or institution on the implementation of an integrated system of Quality & Environment management, applying ISO 9000 and ISO 14000 standards

### Planning

	Class hours	Hours outside the classroom	Total hours
Introductory activities	2	0	2
Lecturing	18	0	18
Project based learning	25	62.5	87.5
Discussion Forum	2	0	2
Objective questions exam	1	19.5	20.5
Essay	2	18	20

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

	Description
Introductory activities	Presentation of the teaching guide of the subject, planning, teaching staff, activities and evaluation.
Lecturing	Teachers' exposure to the subject matter, theoretical bases and / or guidelines of a work, exercise or project to be developed by the student.
Project based learning	Implementation of activities that allow the integration of theoretical knowledge, management tools and standards and formal models of Quality management. Students, working in small groups, will have to develop an integrated project on the application of Quality and Environmental management systems, using ISO 9000 and ISO 14000 standards as a tool.  With this, students are expected to train, among others, the skills of analysis and synthesis, learning in cooperation, organization, information search, communication and strengthening of personal relationships.
Discussion Forum	Activity developed in a face-to-face environment in which diverse subjects related to the academic and / or professional field are debated with professionals of reputed prestige that develop their main labor activity in the Quality scope.

### Personalized attention

Methodologies	Description
Lecturing	The student will be able to formulate the doubts arisen in the master sessions through the electronic mail. On the other hand, each teacher establishes a reserve of 6 weekly hours of tutoring, for the attention of the students who request it. The schedule of these tutorials is made by the coordinator of the subject, but it will also be available to students both in the area of the subject in the virtual platform TEMA and in the website of the Faculty.
Project based learning	In these activities the teacher has the function of guiding and orienting the students' learning process and helping them to successfully carry out the planned project. For this, an effective monitoring focused on the equipment configured to carry it out will be accomplished. Likewise, the TEMA Platform will be available all the material with presentations of theory classes, previous projects, regulations and other useful documents for the realization of the project. On the other hand, the student may also solve their doubts in an individualized way in the hours for tutorials, which as indicated in the previous section will be communicated through the coordinator of the subject and will be available in the area of the subject in the Platform TEMA, as well as on the website of the Faculty.

### Assessment

	Description	Qualification	Training and Learning Results
Objective questions exam	Tests to evaluate the acquisition of competences that include closed questions with different alternative answers (true / false, multiple choice, pairing of elements ...). Students select a response from a limited number of possibilities.	30	A1 B2 C29 D1 A5 B3 C30 D6 B7 C31 D11 B10 C32 D13 B12 C33 D16

Essay	The students, in group, will present, in written and oral form, the result obtained from the Project-Based Learning (ABP) carried out in the seminars. In each session it's necessary that each of the members of the group upload the task, individually, to the platform enabled in FAITIC; this platform will allow the opening and closing window for the correct control of the effectiveness of the work developed by the student in the practice. Furthermore will be enabled another time window to improve the task developed in the classroom. It will be conducted in small groups through oral presentation and writing of the BPA.	70	A2 B2 C25 D1 A3 B4 C27 D2 A4 B7 C29 D6 A5 B10 C30 D11 B11 C31 D13 B12 C32 D14 C33 D16 D18
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### Other comments on the Evaluation

In order to take the theoretical exam, it is necessary to attend 100% of the seminars. Only the lack of assistance for justified reasons duly documented in the 24 hours after the end of the practice can be excused. To pass the subject it is necessary to obtain a grade of 5. In addition, to pass the subject it will be essential to obtain, at least, a score of 40% in each of the tests: specifically 1.2 points (out of a maximum of 3) in the objective questions test and 2.8 (out of a maximum of 7) in the Project. Also, the 30% corresponding to the work factor of the project depends on the attendance, the work developed in the classroom during the practice, the participation and interest shown in the classroom by the student and the fact of uploading to the FAITIC platform, in the assigned times, an improvement of the work done in practice.

In the evaluation of the 40% corresponding to the Presentation of the final project, the quality of the project presented is assessed, attending, both in the presentation and in the written work, among others, to factors such as:

Formal appearance of the deliverable: logos, cover page, paragraph formats, page margins, indexes, **spelling mistakes, bad expressions, ...**

Inclusion of qualitative aspects of scientific rigor, such as citations of bibliographical references and use of scientific terminology.

During the theoretical classes, four attendance controls will be carried out randomly; the attendance to each of them will add 0.125 points to the final grade obtained in the subject.

In case of obtaining a lower grade than indicated, that part will be suspended until the new July session. No qualification will be saved for the next course. If you do not pass the Project, you must correct the incorrect parts, complete any sections that may be missing, etc., depending on the comments of the evaluation or even repeat it in its entirety.

### Timetable:

Classes will be held during the first semester in the morning. The specific schedule of each of the scheduled activities is approved at Faculty Board and is listed in the following link:

<http://bioloxia.uvigo.es/en/teaching/schedules>

The **exam calendar** can be found in the following link:

<http://bioloxia.uvigo.es/en/teaching/exams>

### Sources of information

#### Basic Bibliography

Camisón C, **Gestión de la calidad: conceptos, enfoques, modelos y sistemas**, 2006

Cuatrecasas L, **Gestión integral de la calidad. Implementación, control y certificación.**, 2010

López Lemos, Paloma, **Como documentar un sistema de Gestión de calidad según ISO 9001:2015**, 2015

#### Complementary Bibliography

Vilar Barrio JF, **Las Siete nuevas herramientas para la mejora de la calidad**, 1998

Cláver Cortés E, **Gestión de la calidad y gestión medioambiental**, 2011

López Lemos, Paloma, **Novedades ISO 9001:2015**, 2015

Varios autores, **Herramientas para la Calidad**, 2004

Woodside G, **Auditoría de sistemas de gestión ambiental: introducción a la norma ISO 14001**, 2001

Granero J. y Ferrado M, **Cómo implantar un sistema de gestión ambiental según la norma ISO 14001:2004**, 2011

Seoánez Calvo M & Angulo Aguado L, **Manual de gestión medioambiental de la empresa: sistemas de gestión medioambiental, auditorías medioambientales, evaluaciones de impacto ambiental y otras estrategias**, 1999

Rubio Romero JC, **Gestión de la prevención de riesgos laborales: OHSAS 18001 - Directrices OIT para su integración con calidad y medioambiente**, 2002

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**Recommendations**

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**Subjects that continue the syllabus**

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Internships/V02G030V01981

Drafting and execution of projects/V02G030V01801

Final Year Dissertation/V02G030V01991

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**Subjects that are recommended to be taken simultaneously**

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Agri-food analysis and diagnostic/V02G030V01901

Clinical diagnosis and analysis/V02G030V01903

Environmental analysis and diagnosis/V02G030V01902

Biodiversity: management and conservation/V02G030V01905

Pollution/V02G030V01906

Environmental impact evaluation/V02G030V01904

Management and Conservation of spaces/V02G030V01910

Animal production/V02G030V01907

Microbial Production/V02G030V01908

Vegetable production/V02G030V01909

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