



IDENTIFYING DATA

Quality management and control

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|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------|
| Subject | Quality management and control | | | |
| Code | V02G030V01911 | | | |
| Study programme | Grado en Biología | | | |
| Descriptors | ECTS Credits | Choose | Year | Quadmester |
| | 6 | Optional | 4th | 1st |
| Teaching language | Spanish | | | |
| Department | | | | |
| Coordinator | Gallardo Medina, Mercedes Cal Arca, Ángela María | | | |
| Lecturers | Barreal Modroño, M. Esther Cal Arca, Ángela María Gallardo Medina, Mercedes Pedrol Bonjoch, María Nuria | | | |
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| Web | | | | |
| General description | The aim of this course is for the student to know and understand the principles of quality management and of the environment, as well as the rules of organization and effective management of a laboratory. In this respect, may acquire competence in the application of the ISO 9000 quality management standard, ISO 14000 of environmental management and ISO 17025 for the management and technical competence of testing and calibration laboratories. | | | |
| | The schedule of the subject is approved in the Faculty Board and can be consulted in the following link: http://bioloxia.uvigo.es/en/teaching/schedules | | | |

Skills

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| 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). |

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| 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 | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------|-------------------|---------------------------------------------|
| To know the standards of management and quality control of processes, systems, research, etc., related to Biology. | A1 | B2 B3 | C27 C32 C33 | D1 D6 D13 D16 |
| Understand the concept of quality systems and their application. Manage and apply the main systems of quality. | A1 A2 | B3 | C27 C31 | D2 D6 D13 D16 |
| Knowledge and get used to methods of validation, calibration, uncertainty calculation, verification tests, quality standards and other parameters and quality systems. | A2 | B2 B4 | C31 C32 | D6 D13 D16 |
| Knowing how to evaluate, verify and accredit quality. | A2 A5 | B4 B7 B11 | C27 C30 | D1 D2 D13 D14 D16 D18 |
| Understand the importance and impact of the implementation of quality systems in professional and social fields. | A4 | B10 B11 | C27 C33 | D11 D13 D14 D16 D18 |
| Obtain information, evaluate and interpret results | A3 | B2 B7 B10 | C25 | D2 |
| Apply knowledge of quality management to advise, supervise and assess scientific-technical, ethical, legal and socio-economical aspects related to biology. | A2 A3 | B10 B12 | C29 | D2 D6 D11 D13 D14 D16 D18 |
| To know and handle the concepts, terminology and scientific-technical instrumentation related to quality management. | 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 |
| Project | 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 |
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| Introductory activities | Introduction to the subject's teaching guide, planning, teachers, activities and evaluation. |
| Lecturing | Exposure by the teachers of the contents on the subject of study, theoretical bases and/or guidelines of a work, exercise or project to be developed by the student |
| Project based learning | Carrying out activities that allow the integration of theoretical knowledge, management tools and formal standards and 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 is carried out in a face-to-face environment in which various topics related to the academic and/or professional field are discussed with professionals of renowned prestige who carry out their main work activity in the field of quality |

Personalized assistance

| Methodologies | Description |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lecturing | The student can ask the questions that arise in the master sessions through email. 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 skill 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 A5 | B2 B3 B7 B10 B12 | C29 C30 C31 C32 C33 | D1 D6 D11 D13 D16 |

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| Project | 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 every 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

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.

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.

During the master 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.

Exam

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.

Project

Of the 70% of the qualification of the Project, 30% corresponds to the Project Work Factor, which depends on the attendance, the work developed in the classroom during the practice time, participation and interest shown in the classroom by the student and the fact of uploading to the FAITIC platform, in the designated times, an improvement of the work done in practice.

The remaining 40% corresponds to the presentation of the final project, where the quality of the project presented is assessed, attending, both the presentation and the written work, among others, in this case factors such as:

- Formal appearance of the deliverable: logos, cover page, paragraph formats, page margins, indexes, spelling mistakes, incorrect expressions, ...
- Inclusion of qualitative aspects of scientific rigor, such as citations of bibliographical references and use of scientific terminology.

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; Gonzalez Babón J, **Gestión integral de la calidad. Implantación, control y certificación.**, 2017

Llorens Montes F.J., **Gestión de la Calidad Empresarial: fundamentos e implantación**, 2005

Complementary Bibliography

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

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 Mamp; 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

Recommendations

Subjects that continue the syllabus

Internships/V02G030V01981

Drafting and execution of projects/V02G030V01801

Final Year Dissertation/V02G030V01991

Subjects that are recommended to be taken simultaneously

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

Plant Production/V02G030V01909

Contingency plan

Description

=== EXCEPTIONAL PLANNING ===

In accordance with the situation generated by the COVID, the University establishes a scenario of adapted normality, i.e., a situation in accordance with the degree of attendance estimated as normal at the time prior to the pandemic. A single alternative scenario is foreseen for temporary situations limited by local restrictions due to outbreaks or closures in the locality where the educational institution is located. These already planned measures guarantee, at the time it is perceptive, the development of teaching in a more agile and effective way by being known in advance (or well in advance) by students and faculty through the standardized and institutionalized tool of DOCNET teaching guides.

=== ADAPTATION OF THE METHODOLOGIES ===

BLENDED LEARNING:

* * Teaching methodologies maintained:

There are no changes in the mentioned teaching methodologies of the guide: Introductory activities, lecturing, Project based learning and Discussion Forum.

* Teaching methodologies modified:

If the number of students enrolled in the subject exceeds the capacity allowed in the classroom, the classes will take place under the blended learning modality. In this case, a group of students (indicated from the planning center) will receive the classes in person and the rest will do it from the remote campus synchronously. For the rotation of the group of students who attend the classes in person, the center indications will be followed.

* Non-attendance mechanisms for student attention (tutoring):

The tutoring sessions will be developed through various methods of communication with students in the form of prior appointment:

- Email with the teachers involved.

- Group tutoring, by work groups or individual, if applicable, through remote campus.

* Modifications (if applicable) of the contents:

The contents will be developed in full according to the teaching planning.

* Additional bibliography to facilitate self-learning:

All necessary information (manuals, web addresses, documents, etc.) will be provided.

*Other modifications:

There are no modifications

=== ADAPTATION OF THE TESTS ===

* Tests already carried out:

Tests of objective questions. [Previous Weight 30%] [Proposed Weight 30%]

Project. [Previous Weight 70%] [Proposed Weight 70%]

* Pending tests that are maintained:

Tests of objective questions. [Previous Weight 30%] [Proposed Weight 30%]

Project. [Previous Weight 70%] [Proposed Weight 70%]

As already indicated in the guide for the exclusively face-to-face modality, of the 70% of the qualification of the project, 30% corresponds to the Project Work Factor, which depends on the attendance, the work developed in the classroom during the practice time, 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 relation to this, it is indicated that there are no changes in this evaluable part of the project's realization. The attendance, participation and interest shown by the student will also be valued through the remote campus.

The remaining 40% corresponds to the presentation of the final project, where the quality of the project presented is assessed, attending, both the presentation and the written work. There are no changes in this evaluable part of the work. If necessary, the presentation of the work will be carried out orally through the remote campus.

As for the face-to-face modality, the evaluable practical activities will be delivered through the FAITIC platform.

* Tests that are modified:

No modification of any test is provided.

* New tests

None

* Additional Information

July convocation: there are no changes foreseen in the type of evaluation for this opportunity. The tests may be carried out in person or through the remote campus, depending on the health measures in force at that time. In the case of being carried out through remote campus, the tests will be non face-to-face, using the tools provided by UVIGO and according to the instructions of the faculty (Faitic, virtual classrooms).
