

**COURSE DATA****Data Subject**

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| Code | 33201 |
| Name | Introduction to experimentation and information and communication technology |
| Cycle | Grade |
| ECTS Credits | 6.0 |
| Academic year | 2024 - 2025 |

Study (s)

| Degree | Center | Acad. Period | year |
|--------------------------------|--------------------------------|---------------------|-------------|
| 1102 - Degree in Biotechnology | Faculty of Biological Sciences | 1 | First term |

Subject-matter

| Degree | Subject-matter | Character |
|--------------------------------|---|------------------|
| 1102 - Degree in Biotechnology | 111 - Incorporation to experimentation and information and communication technologies | Basic Training |

Coordination

| Name | Department |
|--------------------------|-------------------|
| FALCO GARI, JOSE VICENTE | 355 - Zoology |

SUMMARY

"Incorporation to experimentation and to information and communication technologies" is a basic and compulsory subject of the branch of Sciences, which is included in the Subject "Biology", within the Module "Transversal Knowledges and Techniques". It has a total of 6 ECTS credits that are taught throughout the first quarter of the first year of the Degree.

The subject, first of all, is aimed to facilitates the adaptation of the student body to the academic, administrative, social and cultural environment of the University of Valencia, given its impact on academic performance. It is intended, then, to introduce the student body in the research activity, through the acquisition of a series of skills and basic knowledge that allow them to function in the field of experimental sciences. Thus, throughout the course they will have to become familiar with the different sources of scientific information and with new technologies, they will learn how to function in a research laboratory as well as the rules for the use of basic scientific instruments, the handling of biological material and the legislation on experimental animals. In short, it is about acquiring the basic knowledge that will be used throughout the rest of the courses that make up the degree, both from the perspective of searching and preparing information, its presentation in different formats or the use of scientific English,



up to knowing how to use different devices commonly used in the laboratory, handling experimental animals correctly or knowing how to dispose of waste according to its danger. It is also intended that the student body knows professional skills of Biotechnologists and Biotechnology as a profession.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1102 - Degree in Biotechnology

- Capacidad de análisis, síntesis y razonamiento crítico.
- Capacidad de divulgación del conocimiento científico.
- Habilidad para el trabajo en equipo.
- Manejo de material para la experimentación en el laboratorio y en el campo.
- Conocer las normas de seguridad e higiene en el laboratorio.
- Manejo de recursos informáticos de utilidad en Biología.
- Capacidad de análisis crítico de textos científicos.
- Manejo del inglés científico.
- Develop the capacity for organisation and planning.
- Presentación escrita y oral de datos científicos.
- Compromiso ético en el manejo de animales para experimentación.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

- Develop capacity for critical thinking, fostering communication and discussion of content in order to stimulate the creative individual.
- Ability to work in groups when dealing with problematic situations collectively.
- Ability to argue from rational criteria, clearly differentiating what is debatable as they are made or accepted scientific evidence.
- Ability to interact with both the teacher and with peers.
- Interest in social and economic application of science.
- Interest in popular science and the impact of science on culture and consciousness of society.
- Ability to interact seamlessly with the various services and human resources for the benefit and use UVEG individual performance.
- Professional training. Acquisition of scientific and technical knowledge related to Biotechnology and professions that allow civic responsibilities in an ever-increasing technological society.



DESCRIPTION OF CONTENTS

1. INCORPORATION TO THE GRADES AND TO THE UNIVERSITY

Structure of the University of Valencia.
Structure of the degree. Postgraduate studies.

2. RESEARCH IN BIOTECHNOLOGY

Scientific study of biological systems.
Biotechnology and -omic Sciences.

3. SAFETY IN THE LABORATORY

Safety in the laboratory.
Waste management.

4. MANAGEMENT OF EXPERIMENTAL ANIMALS

Basic notions of animal testing manipulation.
Legislation on animal testing.

5. EXPERIMENTAL LABORATORY

Practice 1. - Management of biological material.
Practice 2. - The instruments for the observation of biological samples.
Practice 3. - Differentiation of microbial types.
Practice 4. - Management of laboratory animals.
Practice 5. - Processing of model animals.
Practice 6. - Histological processing of biological samples.
Practice 7. - Effect and activity of enzymes

6. INFORMATION AND COMMUNICATION TECHNOLOGIES

Sources of Bibliographic Information.
Presentation of Scientific Information.

7. BIOTECHNOLOGY AND DIVERSITY

Animal development.
Diversity: crisis and conservation.
Interaction between populations.

**WORKLOAD**

| ACTIVITY | Hours | % To be attended |
|-----------------------------|---------------|------------------|
| Theory classes | 26,00 | 100 |
| Laboratory practices | 14,00 | 100 |
| Classroom practices | 14,00 | 100 |
| Computer classroom practice | 6,00 | 100 |
| Study and independent work | 90,00 | 0 |
| TOTAL | 150,00 | |

TEACHING METHODOLOGY**USE OF VIRTUAL CLASSROOM (<http://aulavirtual.uv.es>).**

For all activities will use the platform of e-learnig VIRTUAL CLASSROOM of the University of Valencia. The basic tools to use are:

- *E-mail*. Virtual Classroom from the mail module will allow fluid communication student-teacher. Professor continuously used this medium to inform the student of any aspect related to the development of matter.

IMPORTANT: Only accept e-mails from the e-mail account of the University of Valencia (alumni.uv.es). "Hotmails" or other mail account will be automatically deleted.

- *News*. The news module was used as an information standard. The student Virtual Classroom to enter immediately see any news related to the subject.

- *Resources*. The resource kit will be the place to be deposited material of the subject: reference sources, images, animations, tutorials, practice outlines, course schedules ...

- *Activities*. This module will be the starting point for various tasks: concept maps, classroom practices, seminars The exchange of materials teacher-student to be carried out through this module.

- *Questionnaires*. The questionnaire module Virtual Classroom will be used to answer the questionnaires to be proposed along the course. The student / to have a week to answer questionnaires to each block. Each individual questionnaire will have a limited time to answer. After the period in which the student can check your qualification questionnaire and to analyze their responses.

EVALUATION

The following distribution is proposed over a maximum of 100 marks (50 MARKS MUST BE ACHIEVED TO PASS THE COURSE):

*** Evaluation questionnaire (up to 60 marks):**

A presential questionnaire will be carried out in the classroom where multiple choice questions will be collected from all parts of the theory subjects and laboratory practices. It is a necessary condition to pass the questionnaire in order to pass the course. In the case of being able to compensate the note with the one obtained in the activities, it can be done from a minimum of 27 marks.

*** Evaluation of activities (up to 40 marks):**

In this section, all the activities that the student must carry out, both face-to-face and non-face-to-face, will be assessed. It is a necessary condition to be able to evaluate this part that the student performs and passes each one of them. In case of not passing the subject in the first call, the mark of this section of activities will be kept until the second call of the same course.

All these activities must be carried out during the first quarter of the academic year.

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| Development of Popular Articles | 10 marks |
| Literature search and Bibliographic references | 10 marks |
| Summary of popular article readings | 7,5 marks |
| Virtual Panel | 7,5 marks |
| Progress and participation in Blocks I & II | 5 marks |
| TOTAL | 40 marks |

REFERENCES**Basic**

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- Barrass, R. (2002). Scientists must write. Routledge Falmer.
- Berry, R. (1986). How to write a research paper. Oxford, Pergamon Press
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- Fernández, J. Biología y sociedad en España 1952-2002 en Hernández, R., Corral, L y Infante, F. (2002) 50 años de Biología en España. pp 113-127. Conf. Esp. Decanos Biología. Ed. Publicaciones



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Lannon, J. M. (1996). Technical writing. 7th Edition. Scott Foresman & Co.

Madigan M.T., Martinko J.M., Parker J.(1997). Biología de los Microorganismos. Prentice Hall.

Ministerio de Trabajo, Inst Nac de Seguridad e Higiene en el Trabajo. Normativa NTP 276: Eliminación de residuos en el laboratorio: procedimientos generales.

Colegio Oficial de Biólogos de la Comunidad Valenciana <http://www.cobcv.org>

Servei Seguretat, Salut i Qualitat Ambiental. <http://www.uv.es/DSSQA/general/documentacio.htm>

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