



## INTRODUCTION

**Brief description:** This course is focused on the study of the scientific document (components, organization, content and formal aspects) so students will learn how to properly write a scientific laboratory report. In addition, they will learn how to search scientific literature using bibliographic databases commonly used by the scientific community: Web of Science and PubMed. We will also study how to use Excel spreadsheet.

- **Degree:** BIOLOGY and BIOCHEMISTRY
- **Module in the Degree Program:** Module I (*Materias instrumentales aplicadas a la biología*)
- **Number of credits:** 3 ECTS
- **Year:** First, 1st semester
- **Type of course:** Required
- **Instructors:** Dr. Inmaculada Pascual (subject coordinator) and Dr. Iker Zuriguel
- **Language:** English
- **Department:** Environmental Biology (*Biología Ambiental*). School of Sciences
- **Lecture schedule:** Room 17, Monday 10h -11h and Wednesday 8h - 9h (the theoretical classes starts on October 6 and end on November 3)

### COMPETENCIES

#### Competencias específicas grado Biología:

CE1 Plantear y resolver problemas cualitativos y cuantitativos en biología a través de hipótesis científicas que puedan examinarse empíricamente y que se basen en los conocimientos y teorías disponibles.

CE10 Comprender las bases de Matemáticas, Física, Química, Estadística e Informática, relevantes para entender los procesos biológicos y los seres vivos, así como para poder aplicar con criterio las técnicas de observación, medida y experimentación propias de la Biología.

#### Competencias específicas grado Bioquímica:

CE3 Aplicar las Matemáticas, la Estadística y la Informática para obtener, analizar e interpretar datos y para elaborar modelos de los sistemas y procesos bioquímicos.

CE5 Comprender, analizar críticamente, discutir, escribir y presentar argumentos científicos, tanto en castellano como en inglés, como lengua de referencia en el ámbito científico.

#### Competencias generales y básicas grado Biología y Bioquímica:

CG1 Planificar y organizar el tiempo y gestionar la propia formación continua, actualizando el conocimiento de las innovaciones del ámbito científico y saber analizar las tendencias de futuro (Biología y Bioquímica)

CG3 Trabajar en equipo, seleccionar y elegir la metodología de trabajo y distribución de funciones. Saber escuchar y hacer uso de la palabra con intervenciones positivas y constructivas (Biología)

CB3 Que los estudiantes tengan la capacidad de reunir e interpretar datos relevantes (normalmente dentro de su área de estudio) para emitir juicios que incluyan una reflexión sobre temas relevantes de índole social, científica o ética (Bioquímica)



CB5 Que los estudiantes hayan desarrollado aquellas habilidades de aprendizaje necesarias para emprender estudios posteriores con un alto grado de autonomía (Bioquímica)

## PROGRAM

### THEORETICAL PROGRAMME

1. Scientific communication. Scientific information sources
2. Bibliographic databases in Science
3. Ethical use of information
4. Scientific report and its components
5. Seminar: scientific paper analysis

### PRACTICAL PROGRAMME

- Excel spreadsheet
- Bibliographic databases: Web of Science and PubMed

### EDUCATIONAL ACTIVITIES

#### - CLASSROOM TEACHING ACTIVITIES -

##### 1. Lectures. 8 hours

Lectures are given by the professor on the themes indicated in the syllabus with the help of blackboard and power point presentations.

##### 2. Seminar. 1 hour

Session aimed at practical application of theoretical concepts. Students will analyse a scientific paper (structure, sections, scientific language, tables and figures, references, etc). The seminar will take place during the last theoretical lecture.

##### 3. Practical classes. 20 hours

Ten training sessions (two hours each), in the computer room 0C04

- Excel spreadsheet: six sessions (12 hours)

- Bibliographic databases: four sessions of Web of Science and Pubmed (8 hours)

##### 4. One-to-one tutorial. 2 hours

Each student may have personal interviews with the professor to help him/her with personal study and learning.

##### 5. Evaluation. 5 hours

Theoretical (November 10, 2025) and practical (December 10, 2025) exams to assess the successful accomplishment of the objectives

#### - PERSONAL WORK -

##### 1. Practical exercises. 7 hours

Students will do practical exercises proposed by the lecturer and solved in subsequent practical sessions, in order to reinforce the concepts studied.



## 2. Personal study. 32 hours

Students should conduct personal study using the professor's notes taken in lectures and recommended books if needed.

## ASSESSMENT

### ORDINARY CALL

The course performance and grading will be determined as follows:

- Theoretical exam (30%): multiple-choice questions
- Excel exam (35%): exercises in computer room
- Bibliographic databases exam (25%): exercises in computer room
- Scientific paper analysis (10%): questions related to the structure and writing of a scientific paper **done during the seminar**

### Requirements to pass the course

To pass this course the following two conditions must be met:

1. Have at least a score of **4 out of 10** on each of the following parts:

- Theoretical exam
- Excel exam
- Data Bases exam

2. Have at least a score of **5 out of 10** when computing the total score

### EXTRAORDINARY CALL

- Theoretical exam (30%): multiple-choice questions
- Excel exam (35%): in computer room
- Bibliographic databases exam (25%): in computer room
- The score of the scientific report analysis (10%) will be maintained always that it is higher than 5 out of 10. If the score of the scientific report analysis is lower than 5 out of 10, the score of the theoretical exam will be considered for this 10%.

In addition, the students that have passed the course in the ordinary call can apply for being assessed again in the extraordinary call of that year. For that, they will have to apply for it at least 5 days before the beginning of the June exam period. The grade of the course will be the grade obtained in the extraordinary call, even though it is lower than that obtained in the previous call.

*Students with special educational needs must contact the Academic Coordination Office of the (faculty/school) in advance to obtain the corresponding authorization for any adaptations (for example, extra time in exams). This authorization must then be sent by the student to the professor. It is recommended that this procedure be completed at the beginning of the semester.*

**PLEASE NOTE:** Any attempt at fraud, copying, plagiarism or other irregular behaviour constitutes a serious offence as set out in Title IV 'Academic Disciplinary Rules for Students' within the Rules of Conduct at the University of Navarra.

### OFFICE HOURS

**Please contact by-email in order to arrange an interview**

**Dra. Inmaculada Pascual ([ipascual@unav.es](mailto:ipascual@unav.es))**



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- Environmental Biology (*Biología Ambiental, Edificio Ciencias*) Office 5C01

Dr. Iker Zuriguel ([iker@unav.es](mailto:iker@unav.es))

- Physics and Applied Mathematics (*Física y Matemática Aplicada, Edificio Castaños*)

## BIBLIOGRAPHY AND RESOURCES

### COMPLEMENTARY BIBLIOGRAPHY

- Pechenik, J.A. 1995. How to write about Biology. Harper Collins, London, UK. [Find it in the Library](#)
- V.V. A.A. 2010. Excel 2010. Eni Ediciones. Barcelona. [Find it in the Library](#)
- Rigolet, P. 2010. Excel 2010 Funciones Integradas. Eni Ediciones. Barcelona. [Find it in the Library](#)
- Microsoft Excel
- Edlund BM and McDougall A. 2014. PubMed Essentials. Form and Kunskap AB. Stallarhomen, Sweden. [Find it in the Library](#)
- Web of Science (<http://www.accesowok.fecyt.es/login/>) and PubMed (<http://www.ncbi.nlm.nih.gov/>).
- PubMed guide: <https://biblioguias.unav.edu/base-de-datos-PubMed>
- Virtual library resources (<http://www.unav.edu/web/biblioteca>)