

Degree programme	Type	Course
Medicine	FB	1

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Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

No official prerequisites are defined for this subject. However, it is recommended that the student has acquired the basic knowledge and competences of the subjects corresponding to *Cell Biology*, *Biochemistry* and *Molecular Biology*, and *Biophysics*.

Objectives

The General Physiology subject is programmed during the second semester of the first course of the Degree of Medicine and develops the knowledge of the basic principles of the function of cells and tissues of the human organism. The acquisition of the competences of this subject will allow the student to be well prepared to confront the study of the physiology of the different systems of the human body during the second course.

The general training objectives of the subject are:

- To know the basic mechanisms of the functioning of the body tissues.
- To integrate the Physiology knowledge with concepts learned in other basic subjects that deal with the structure and the cellular and molecular aspects of the organism.
- To train the student to apply the physiological knowledge in deducting the consequences of the diseases.
- To acquire practical skills for performing the most frequent functional tests in the biomedical field.
- To acquire attitudes aimed at the promotion of health and the prevention of disease, oriented towards health medicine, and appropriate for a medical practice based on scientific evidence.

Learning outcomes

1. Describe the general organisation and function of the systems of the human body in health.
2. Identify the scientific bases of human physiology.
3. Identify the main techniques used in physiology laboratories.
4. Identify the basic mechanisms of cell and tissue physiology.
5. Identify the functional variations of the human organism at different stages in life and their principal causes.
6. Describe the function and characteristics of the different components of blood.
7. Make correct use of the international physiological nomenclature.
8. Apply knowledge of physiology to the production of structured review texts.
9. Identify physiological information sources, including textbooks, atlas images, internet resources and other specific bibliographic databases.
10. Organise and plan time and workload in professional activity.
11. Demonstrate basic research skills.
12. Communicate clearly, orally and in writing, with other professionals and the media.
13. Explain the basic functional mechanisms of the different cell types and the tissues they make up.
14. Describe the function of the different body compartments.

Contents

INTRODUCTION TO PHYSIOLOGY

TRANSPORT OF IONS THROUGH THE CELL MEMBRANE

PHYSIOLOGY OF EPITHELIAL CELLS

CELL ELECTRICAL PHENOMENA

SYNAPTIC TRANSMISSION

PHYSIOLOGY OF SKELETAL MUSCLE

PHYSIOLOGY OF CARDIAC MUSCLE

PHYSIOLOGY OF SMOOTH MUSCLE

PHYSIOLOGY OF BLOOD AND HEMATOPOIETIC ORGANS

BLOOD PLASMA

ERYTHROCYTES

LEUKOCYTES

LYMPHOCYTES AND IMMUNITY

BLOOD GROUPS

HEMOSTASIS

[Detailed contents are provided in the Subject Program]

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
CASE RESOLUTION WORK	3	0.12	9, 12, 13
THEORY (TE)	18	0.72	1, 2, 3, 4, 5, 6, 7, 9, 12, 13
PREPARATION OF WRITTEN WORKS / READING OF ARTICLES	7.5	0.3	3, 12, 13
TUTORIALS	2	0.08	2, 3, 4, 5, 6, 7, 8, 9, 12, 13
SELF STUDY	30	1.2	1, 2, 3, 7, 9, 10, 12, 13
LABORATORY PRACTICES (PLAB)	8.5	0.34	3, 12, 13

Theory classes:

Systematic explanation and study of the subject topics, giving relevance to the most important concepts. The student acquires the basic scientific knowledge of the subject in theory classes, which will be complemented by self-study of the themes of the subject program.

Laboratory practices:

Practical sessions for the observation and performance of procedures, the practical learning of physiological techniques and their medical application. Group work and active self-learning are promoted.

Case-based work:

Work on cases or problems of relevance for learning the subject. The knowledge acquired in theory classes, practices and personal study is applied to the resolution of practical cases presented using the Moodle application.

Tutorial teaching:

Availability of tutorials for helping in the autonomous study of physiological concepts and application for the resolution of cases throughout the semester.

Annotation: within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Objective tests on theory knowledge	80%	4	0.16	2, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14
Questionnaires on case and problem solving	5%	1	0.04	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
Practical learning evaluation	15%	1	0.04	1, 3, 4, 6, 8, 9, 11, 12, 13, 14

EVALUATION

The acquisition of the competences described in the subject will be valued, including the learning of the Physiology of the human organism, the general training to distinguish between normality and dysfunction and the ability to integrate theoretical and practical concepts.

The evaluation of the subject will be based on the theoretical and practical syllabus that appears in the Program of the subject.

Evaluation model

Each block or system that integrate the program of the subject will be evaluated individually, both from the theoretical and practical syllabus (laboratory and case practices).

Systems for evaluation in General Physiology are considered:

- Physiology of Blood and Hematopoietic Organs
- Cell Physiology of Nerve, Muscle and Epithelium

To pass the subject it is required to pass each of the two blocks with a minimum grade of 5.0 in the same academic year.

Continuous evaluation

The continuous evaluation of each system will consist of:

A. Midterm exam with:

- multiple-choice items and/or restricted written questions to assess theoretical knowledge of the subject and concepts related to laboratory practices.

The grade of the partial exam will represent 80% of the overall grade of the system.

B. Tests throughout the course on the knowledge acquired in laboratory practices and case study. The grade of these tests will be 20% of the final grade and will be distributed in:

- Evaluation of laboratory practices, by on-site tests and questionnaires carried out in the Moodle application, on the concepts achieved in the practices. This grade will represent 15% of the overall grade of the system.
- Questionnaires on solving cases and practical problems, carried out in the Moodle application, which will represent 5% of the overall grade of the system.

To pass each system it is required to obtain a minimum of 5.0 in the partial examination of theoretical and practical knowledge of the subject (section A) and a minimum of 5.0 in the overall grade of the system (80% partial exam A + 20% questionnaires B).

To pass the subject it will be necessary to have passed each one or of the systems with a minimum of 5.0, so that the overall average is equal to or higher than this grade.

In this case, the final grade will be the weighted average (40% Physiology of Blood and Hematopoietic Organs and 60% Cell Physiology of Nerve, Muscle and Epithelium) of the marks obtained in each of the approved systems.

Final examination

A final recovery exam will be carried out for the students who have not passed the subject in the continuous evaluation. The student must attend only the blocks that he/she has not passed in the continuous evaluation of the same academic year.

The final recovery exam of each system will be composed of multiple-choice questions and will evaluate the knowledge of:

- Theoretic knowledge of the subject, weighted at 75% of the final grade.
- Laboratory practices and cases, weighted at 25% of the final grade.

To pass each system it is required to obtain a minimum of 5.0 in the exam.

To pass the subject it is required to have passed the two systems with a minimum of 5.0.

In this case, the final grade will be the weighted average (by the extension of the system) of the marks obtained in each of the approved systems. In case of not passing any of the systems, the maximum score obtained will be 4.8.

It will be considered as "not evaluable" the student who does not take the evaluation exams both theoretical and practical.

Examination review procedure

Students may submit objections regarding the examination questions within 24 hours of completing the in-person examination.

Grade reviews will be conducted during the period announced at the time the midterm and final examination results are published.

Bibliography

TEXTBOOKS

- Koeppen BM, Stanton B. Berne & Levy Physiology. 8th ed. Elsevier, 2023.
- Hall JE. Guyton Textbook of Medical Physiology. 15th ed. Elsevier; 2026.

- Purves D. Neuroscience. 7th ed. Sinauer; 2026.

- Paulev PE, Zubieta G. New Human Physiology, 2nd ed. <https://www.zuniv.net/physiology/book/>

Software

LABCHART <https://www.adinstruments.com/>

Nernst/Goldman Simulator <https://apps.apple.com/us/app/nernst-goldman-equation-simulator/id1022504095>

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(PLAB) Practical laboratories	1	Catalan	second semester	morning-mixed
(PLABs) Suport a les pràctiques de laboratori	1	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	2	Catalan	second semester	morning-mixed
(PLABs) Suport a les pràctiques de laboratori	2	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	3	Catalan	second semester	morning-mixed
(PLABs) Suport a les pràctiques de laboratori	3	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	4	Catalan	second semester	morning-mixed
(PLABs) Suport a les pràctiques de laboratori	4	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	5	Catalan	second semester	morning-mixed
(PLABs) Suport a les pràctiques de laboratori	5	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	6	Catalan	second semester	morning-mixed
(PLABs) Suport a les pràctiques de laboratori	6	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	7	Catalan	second semester	morning-mixed
(PLABs) Suport a les pràctiques de	7	Catalan	second semester	morning-mixed

laboratori				
(PLAB) Practical laboratories	8	Catalan	second semester	morning-mixed
(PLABs) Suport a les pràctiques de laboratori	8	Catalan	second semester	morning-mixed
(PLAB) Practical laboratories	9	Catalan	second semester	afternoon
(PLABs) Suport a les pràctiques de laboratori	9	Catalan	second semester	afternoon
(PLAB) Practical laboratories	10	Catalan	second semester	afternoon
(PLABs) Suport a les pràctiques de laboratori	10	Catalan	second semester	afternoon
(PLAB) Practical laboratories	11	Catalan	second semester	afternoon
(PLABs) Suport a les pràctiques de laboratori	11	Catalan	second semester	afternoon
(PLAB) Practical laboratories	12	Catalan	second semester	afternoon
(PLABs) Suport a les pràctiques de laboratori	12	Catalan	second semester	afternoon
(PLAB) Practical laboratories	13	Catalan	second semester	afternoon
(PLABs) Suport a les pràctiques de laboratori	13	Catalan	second semester	afternoon
(PLAB) Practical laboratories	14	Catalan	second semester	afternoon
(PLABs) Suport a les pràctiques de laboratori	14	Catalan	second semester	afternoon
(PLAB) Practical laboratories	15	Catalan	second semester	afternoon
(PLABs) Suport a les pràctiques de laboratori	15	Catalan	second semester	afternoon
(PLAB) Practical laboratories	16	Catalan	second semester	afternoon
(PLABs) Suport a les pràctiques de laboratori	16	Catalan	second semester	afternoon
(PLAB) Practical laboratories	17	Catalan	second semester	afternoon
(PLABs) Suport a les pràctiques de laboratori	17	Catalan	second semester	afternoon
(PLAB) Practical laboratories	18	Catalan	second semester	afternoon

(PLABs) Suport a les pràctiques de laboratori	18	Catalan	second semester	afternoon
(TE) Theory	101	Catalan	second semester	afternoon
(TE) Theory	102	Catalan	second semester	afternoon
(TE) Theory	103	Catalan	second semester	morning-mixed
(TE) Theory	104	Catalan	second semester	morning-mixed