

Academic Year/course: 2022/23

25429 - General and descriptive Physiology

Syllabus Information

Academic Year: 2022/23

Subject: 25429 - General and descriptive Physiology

Faculty / School: 127 - Facultad de Ciencias de la Salud

275 - Escuela Universitaria de Enfermería de Huesca

375 - Escuela Universitaria de Enfermería de Teruel

Degree: 559 - Degree in Nursing

560 - Degree in Nursing

561 - Degree in Nursing

ECTS: 10.0

Year: 1

Semester: Annual

Subject Type: Basic Education

Module:

1. General information

1.1. Aims of the course

The general objective is to know the bases of functioning of the human body and apply that knowledge to obtain a comprehensive and integrated understanding of the human body and how changes can lead to the appearance of pathologies. The student will develop skills related to recognizing normal or changing health signs and looking for information, critical analysis, writing and communication of scientific content preparing them for self-learning and for health education.

These approaches and objectives are aligned with the following sustainable development objective (SDGs) of the agenda United Nations 2030 (<https://www.un.org/sustainabledevelopment>), so that the acquisition of learning results of the subject provides training and competence to contribute to some extent to its achievement: Goal 3: Good health and well-being

1.2. Context and importance of this course in the degree

Physiology must be known and understood by the nursing professional since this science provides the functional basis for the performance of their professional practice. In the syllabus of General and Descriptive Physiology, those essential topics for the nursing practice has been included.

Other directly interrelated subjects have been considered, taking into account the timing of the content and its structure

1.3. Recommendations to take this course

No specific requirements are required to study this course

2. Learning goals

2.1. Competences

CE01 - To know and identify the structure and function of the human body

CE02 - To understand the molecular and physiological bases of cells and tissues

CE10 - To know the pathophysiological processes and their manifestations and the risk factors which determine the states of health and disease at different stages of the life cycle

CE58 - To ability to use precise terminology in each situation of your professional activity

CE59 - To know how the physiological sciences interrelate with the rest of the curricular subjects.

2.2. Learning goals

To analyze how the human being is a unit and as such, the control systems are throughout the organism.

To analyze the relationship functions between the different organs and systems.

To understand the anabolic and catabolic processes of vital health processes and disease and relate them to the key processes of intermediary metabolism.

To know the normal functioning of organs and systems.

2.3. Importance of learning goals

The learning outcomes of this subject are relevant because they contribute to the basic knowledge of the functioning of the human body. This knowledge is necessary for the nursing diagnoses and the elaboration of a care plan. Physiology is essential to understand how the different alterations lead to the development of pathology, signs, symptoms and the mechanism of action of therapies. As a basic subject, it supports a wide group of subjects of higher courses

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

-Multiple choice questions. The test will consist of 50 questions, each with 5 answers of which only one will be correct. It will be necessary to obtain at least 32 correct questions to approve the exam. 32 correct questions correspond to a rating of 5 out of 10. It will be considered essential to obtain at least one rating of 5 in the theoretical part to be able to add the mark of the practices.

There will be a partial exam. If the number of correct questions is equal to or greater than 32, the student will only have to take the second partial exam in June.

The mark obtained in theoretical exam will correspond to 90% of the final grade.

-Evaluation of participation in practices sessions. Attendance, active participation, group work, preparation of the requested tasks or material will be evaluated. Class attendance is mandatory. It is necessary to have practices approved to approve the course. Practices will be assessed from 0 to 10. The mark obtained will correspond to 10% of the final grade.

In the case of not having done them or if 30% of the practices have been missed, it will be necessary to take an exam on the content of the practices to be able to pass the subject

The mark obtained will correspond to 10% of the final grade.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. It favors the acquisition of knowledge related to human physiology and human health. A wide range of teaching and learning tasks are implemented, such as lectures and practice sessions.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

Further information regarding the course will be provided on the first day of class.

4.2. Learning tasks

This is a 10 ECTS course organized as follows:

- Lectures (8,5 ECTS): 85 hours.

- Practice sessions (1,5 ECTS): 15 hours.

4.3. Syllabus

The course will address the following topics:

Section 1. CHEMICAL COMPOSITION OF HUMANS

Topic 1. Enzymology

Topic 2. Carbohydrates metabolism

Topic 3. Lipid metabolism

Topic 4. Protein metabolism

Section 2. BLOOD AND CARDIOVASCULAR PHYSIOLOGY

- Topic 1. Composition and function of human blood
- Topic 2. Red blood cells
- Topic 3. Leukocytes. Inflammation. Immunity
- Topic 4. Platelet. Hemostasis and Blood Coagulation.
- Topic 5. Mechanical heart activity
- Topic 6. Rhythmical Excitation of the Heart. The Normal Electrocardiogram
- Topic 7. Vascular physiology

Section 3. RESPIRATORY PHYSIOLOGY

- Topic 8. Pulmonary Ventilation
- Topic 9. Exchange and transport of gases

Section 4. THE BODY FLUIDS AND KIDNEYS

- Topic 10. Kidney. General functions
- Topic 11. Urine Formation by the Kidneys
- Topic 12. Body fluids. Regulation of Acid-Base Balance

Section 5. GASTROINTESTINAL PHYSIOLOGY

- Topic 13. Secretory Functions, Digestion and Absorption in the Gastrointestinal Tract

Section 6. ENDOCRINE PHYSIOLOGY

- Topic 14. Introduction to Endocrinology. Pituitary Hormones and Their Control by the Hypothalamus
- Topic 15. Thyroid Metabolic Hormones
- Topic 16. Calcium and Phosphate Metabolism
- Topic 17. Pancreatic Hormones
- Topic 18. Adrenal glands
- Topic 19. Sex Hormones

Section 7. NEUROPHYSIOLOGY

- Topic 20. General functions of the Nervous System.
- Topic 21. Somatic and Autonomic Nervous System.

Practical sessions:

? Metabolism. Effect of various enzymes and components on the metabolism of carbohydrates, proteins and lipids will be observed. Results obtained will be applied to the resolution of clinical cases.

? Nervous System examination . Techniques will be practiced for the examination of visual acuity, visual field, color sensitivity, binocular vision, detection of hearing loss, examination of the tympanic membrane, photomotor, osteotendinous and superficial reflexes, as well as different examinations of the cognition, gait and balance, among others.

? Cardiovascular examination. Technique for electrocardiograms will be trained, as well as the rest of the complementary tests to assess the cardiac status of a patient. The bases for the interpretation of the performed electrocardiograms will be provided.

? Respiratory examination. Spirometry and pulmonary auscultation will be carried out to identify normality in both respiratory sounds and respiratory volumes and spirometric graphs.

? Blood study. Blood group will be determined and associated clinical cases will be considered.

? Effects of physical exercise on cardiovascular activity. The effects of physical exercise at the metabolic and cardiorespiratory levels will be studied.

4.4. Course planning and calendar

Further information concerning the timetable, classroom, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the "Facultad de Ciencias de la Salud" website (<https://fcs.unizar.es/>)