



1. General information

Course: PHYSIOLOGY

Type: BASIC

Degree: 376 - UNDERGRADUATE DEGREE PROGRAMME IN PHARMACY

Center: 14 - FACULTY OF PHARMACY

Year: 2

Main language: Spanish

Use of additional
languages:

Web site:

Code: 14314

ECTS credits: 9

Academic year: 2022-23

Group(s): 10

Duration: AN

Second language: English

English Friendly: Y

Bilingual: N

Lecturer: BEATRIZ DOMINGO MORENO - Group(s): 10				
Building/Office	Department	Phone number	Email	Office hours
Facultad de Medicina/Área de Fisiología	CIENCIAS MÉDICAS	2686	beatriz.domingo@uclm.es	
Lecturer: MIRIAM FERNANDEZ FERNANDEZ - Group(s): 10				
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Lecturer: MARIA DEL ROCIO FERNANDEZ SANTOS - Group(s): 10				
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Lecturer: PEDRO ANTONIO TRANQUE GOMEZ - Group(s): 10				
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Lecturer: MANUEL VICENTE RUIZ - Group(s): 10				
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2. Pre-Requisites

There are no prerequisites, although basic knowledge of Biology, Physics and Chemistry is recommended.

3. Justification in the curriculum, relation to other subjects and to the profession

The subject "Physiology" belongs to module 5, Medicine and Pharmacology, of the Degree in Pharmacy. It studies the molecular and cellular aspects that provide the basis for understanding the functioning of the normal human body. In addition, it deals with the study of the functions of the different organs, apparatus and systems of the human body and proposes an integrated vision that allows the understanding of homeostatic mechanisms and adaptation to the environment.

4. Degree competences achieved in this course

Course competences

Code	Description
B01	Proficiency in a second foreign language at level B1 of the Common European Framework of Reference for Languages.
B02	Knowledge of Information and Communication Technologies (ICT).
B03	A correct oral and written communication
B04	Ethical commitment and professional deontology.
B05	Ability to develop those learning skills necessary to undertake further studies.
EM13	Know and understand the structure and function of the human body, as well as the general mechanisms of disease, molecular, structural and functional alterations, syndromic expression and therapeutic tools to restore health.
G03	Know how to apply the scientific method and acquire skills in the handling of legislation, sources of information, bibliography, elaboration of protocols and other aspects considered necessary for the design and critical evaluation of preclinical and clinical trials.
G09	Intervene in health promotion and disease prevention activities at the individual, family and community levels, with an integral and

	multi-professional vision of the health-disease process.
G10	Design, apply and evaluate clinical reagents, methods and analytical techniques, knowing the basic principles of clinical analysis and the characteristics and contents of laboratory diagnostic reports.
G13	Develop communication and information skills, both oral and written, to deal with patients and users of the centre where they carry out their professional activity. Promote the capacity to work and collaborate with multidisciplinary teams and those related to other health professionals.
G14	Know the ethical and deontological principles according to the legislative, regulatory and administrative provisions governing professional practice, understanding the ethical implications of health in a changing social context.
G15	Recognise own limitations and the need to maintain and update professional competence, with particular emphasis on self-learning of new knowledge based on scientific evidence.
T01	Critical thinking skills based on the application of the scientific method
T02	Ability to manage quality scientific information, bibliography, specialized databases and resources accessible through the Internet.
T03	Handling of basic and specific software for the treatment of information and experimental results.
T04	Motivation for quality, safety at work and awareness of environmental issues, with knowledge of the internationally recognised systems for the correct management of these aspects.
T05	Organizational, planning and implementation skills.
T06	Ability to address human resources decision-making and management.
T07	Ability to work as a team and, where appropriate, exercise leadership functions, encouraging entrepreneurship.
T08	Develop interpersonal skills and the ability to function in an international and multicultural context.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Apply physiological and pathophysiological knowledge to understand the mechanisms of action of drugs, medical devices and food in the body.

Develop scientific papers on health and disease related issues or problems

Communicate results and conclusions

Autonomous learning capacity

Basic social communication skills in the performance of their profession.

Critical thinking skills

To instil in the student the attitudes and values (knowing how to be) of the pharmaceutical professional and to stimulate and guide him/her to integrate them into his/her personal attitudes and human qualities.

To apply the knowledge of physiological methodology in the achievement of pharmacological studies.

To apply physiological and pathophysiological knowledge in the performance and interpretation of biological analysis.

Collect information and develop theoretical thematic content and participate in laboratory experiments.

6. Units / Contents

Unit 1: Cellular and General Physiology. Focal areas 1-3

Unit 1.1 PRACTICE 1: Giant squid axon simulation

Unit 2: Nervous System. Focal Areas 4-13

Unit 2.1 PRACTICE 2: Photomotor reflex exploration, somatic sensitivity, hearing, fundus.

Unit 2.2 PRACTICE 3: Examination of tendon reflexes, electromyogram.

Unit 3: Blood. Focal areas 14-15

Unit 3.1 PRACTICE 4: Blood group typing, red blood cell count, hematocrit index, coagulation time, osmotic fragility.

Unit 4: Cardiovascular System. Focal areas 16-19

Unit 4.1 PRACTICE 5: Electrocardiogram recording, blood pressure determination

Unit 5: Respiratory System. Focal areas 20-22

Unit 5.1 PRACTICE 6: Spirometry.

Unit 6: Digestive System. Sub-themes 23-25

Unit 6.1 PRACTICE 7: Digestive physiology practice

Unit 7: Renal and Urinary System. Focal areas 26-29

Unit 7.1 PRACTICE 8: Kidney function tests: Creatinine clearance.

Unit 8: Endocrine System. Focal areas 30-36

Unit 8.1 PRACTICE 9: Blood glucose determination. Regulation of thyroid function

Unit 9: Reproductive system. Focal areas 37-39

Unit 9.1 PRACTICE 10: Semen analysis

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	B01 B02 B03 B04 B05 EM13 G03 G09 G10 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	2.1	52.5	Y	N	
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	B01 B02 B03 B04 B05 EM13 G03 G09 G10 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	1	25	Y	Y	
Workshops or seminars [ON-SITE]	Case Studies	B01 B02 B03 B04 B05 EM13 G03 G09 G10 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	0.16	4	Y	N	

Group tutoring sessions [ON-SITE]	Group tutoring sessions	B01 B02 B03 B04 B05 EM13 G03 G09 G10 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	0.12	3	Y	N
On-line debates and forums [OFF-SITE]	Online Forums	B01 B02 B03 B04 B05 EM13 G03 G09 G10 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	0.16	4	Y	N
Study and Exam Preparation [OFF-SITE]	Self-study	B01 B02 B03 B04 B05 EM13 G03 G09 G10 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	4.54	113.5	Y	N
On-line Activities [OFF-SITE]	Self-study	B01 B02 B03 B04 B05 EM13 G03 G09 G10 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	0.66	16.5	Y	N
Formative Assessment [ON-SITE]	Assessment tests	B01 B02 B03 B04 B05 EM13 G03 G09 G10 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	0.26	6.5	Y	N
Total:			9	225		
Total credits of in-class work: 3.64			Total class time hours: 91			
Total credits of out of class work: 5.36			Total hours of out of class work: 134			

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Test	10.00%	20.00%	
Test	70.00%	80.00%	
Assessment of active participation	20.00%	0.00%	
Total:	100.00%	100.00%	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

As it is established in the title memory, to pass this course it will be essential to have completed the laboratory practices (only compulsory activity). Students who repeat the course will have their internship saved for two years.

A system of face-to-face assessment adapted to the regulations of the University of Castilla-La Mancha will be followed. It is a system of continuous evaluation so that the subject is passed by accumulating at least 50 points. The grade will be the sum of the points earned on the three progress tests and the student's participation (maximum of 20 points). If the total points do not reach 50, to pass the course you can choose to take a single final test within the ordinary call for applications.

Non-continuous evaluation:

Evaluation criteria not defined

Specifications for the resit/retake exam:

The extraordinary call for applications consists of a single test with a value of 80 out of 100 points. The student will evaluate theoretical and practical knowledge of the subject as a whole. The student's participation grade earned during the regular school year (maximum of 20 points) will be added to these points to obtain the final grade. The course is passed by accumulating at least 50 points. In order to pass the course through this call for applications, it is essential to have completed the laboratory practices.

Specifications for the second resit / retake exam:

Only students who meet the requirements set out in the current Student Evaluation Regulations of the University of Castilla-La Mancha, which will be evaluated in accordance with the criteria applied in the extraordinary call for applications, will be admitted to this competition. Therefore, a test with a value of 80 points out of 100 will be taken. The student's participation grade obtained during a previous ordinary session (maximum of 20 points) will be added to these points to obtain the final grade. The course is passed by accumulating at least 50 points. In order to pass the course through this call for applications, it is essential to have completed the laboratory practices.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	52.5
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	25
Workshops or seminars [PRESENCIAL][Case Studies]	4
Group tutoring sessions [PRESENCIAL][Group tutoring sessions]	3
On-line debates and forums [AUTÓNOMA][Online Forums]	4
Study and Exam Preparation [AUTÓNOMA][Self-study]	113.5
On-line Activities [AUTÓNOMA][Self-study]	16.5
Formative Assessment [PRESENCIAL][Assessment tests]	6.5
Unit 1 (de 9): Cellular and General Physiology. Focal areas 1-3	
Activities	Hours

Class Attendance (theory) [PRESENCIAL][Lectures]	52.5
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	25
Workshops or seminars [PRESENCIAL][Case Studies]	4
Group tutoring sessions [PRESENCIAL][Group tutoring sessions]	3
On-line debates and forums [AUTÓNOMA][Online Forums]	4
Study and Exam Preparation [AUTÓNOMA][Self-study]	113.5
On-line Activities [AUTÓNOMA][Self-study]	16.5
Formative Assessment [PRESENCIAL][Assessment tests]	6.5
Global activity	
Activities	hours
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	50
Class Attendance (theory) [PRESENCIAL][Lectures]	105
Workshops or seminars [PRESENCIAL][Case Studies]	8
Group tutoring sessions [PRESENCIAL][Group tutoring sessions]	6
On-line debates and forums [AUTÓNOMA][Online Forums]	8
Study and Exam Preparation [AUTÓNOMA][Self-study]	227
On-line Activities [AUTÓNOMA][Self-study]	33
Formative Assessment [PRESENCIAL][Assessment tests]	13
Total horas: 450	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Dee Unglaub Silverthorn	Human Physiology: An Integrated Approach (8th Edition)	Panamericana	Buenos Aires	978-0134605197	2018	
John E. Hall	Guyton and Hall Textbook of Medical Physiology, 13e (Guyton Physiology)	Elsevier	Amsterdam	9781455770052	2016	
Linda S. Costanzo	Physiology 7e	Philadelphia : Wolters Kluwer			2018	
John E. Hall	Guyton y Hall: Tratado de Fisiología médica, 13ª edición Additional resources will be provided on the virtual platform of the Faculty of Pharmacy.	Elsevier	Amsterdam	9788491130246	2016	
Dee Unglaub Silverthorn	Fisiología Humana. Un enfoque integrado. 6ª edición	Editorial médica panamericana	Buenos aires	9786078546220	2018	