



1. General information

Course: MOLECULAR PHYSIOPATHOLOGY

Type: CORE COURSE

Degree: 376 - UNDERGRADUATE DEGREE PROGRAMME IN PHARMACY

Center: 14 - FACULTY OF PHARMACY

Year: 3

Main language: Spanish

Use of additional
languages:

Web site:

Code: 14321

ECTS credits: 6

Academic year: 2022-23

Group(s): 10

Duration: First semester

Second language: English

English Friendly: Y

Bilingual: N

Lecturer: MARIA DEL ROCIO FERNANDEZ SANTOS - Group(s): 10				
Building/Office	Department	Phone number	Email	Office hours
Facultad de Farmacia. Despacho 3.2.	CIENCIA Y TECNOLOGÍA AGROFORESTAL Y GENÉTICA	CIENCIA Y TECNOL8296	mrocio.fernandez@uclm.es	
Lecturer: OLGA GARCÍA ÁLVAREZ - Group(s): 10				
Building/Office	Department	Phone number	Email	Office hours
Agrónomos CR/IREC	CIENCIA Y TECNOLOGÍA AGROFORESTAL Y GENÉTICA	926052868	Olga.Garcia@uclm.es	
Lecturer: JUAN FRANCISCO LLOPIS BORRAS - Group(s): 10				
Building/Office	Department	Phone number	Email	Office hours
Facultad de Medicina	CIENCIAS MÉDICAS	2936	juan.llopis@uclm.es	
Lecturer: YOLANDA LÓPEZ GALLARDO - Group(s): 10				
Building/Office	Department	Phone number	Email	Office hours
	CIENCIAS MÉDICAS		Yolanda.LGallardo@uclm.es	
Lecturer: EDUARDO NAVA HERNANDEZ - Group(s): 10				
Building/Office	Department	Phone number	Email	Office hours
Facultad de Medicina	CIENCIAS MÉDICAS	926053068	eduardo.nava@uclm.es	

2. Pre-Requisites

The student must consider that in order to pass this course he or she must have previously studied and passed the subjects of Physiology, Biochemistry and Anatomy.

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

The subject "Molecular physiopathology" belongs to module 5, Medicine and Pharmacology, of the Degree in Pharmacy. It studies the molecular, cellular and organic aspects that provide the basis for understanding the responses of the human body in a pathological state.

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 understanding the mechanisms of disease production.

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 know the basic mechanisms by which molecular alterations lead to the production of diseases.

Additional outcomes

Apply physiological and pathophysiological knowledge to understanding the mechanisms of disease production. To know the basic mechanisms by which molecular alterations lead to the production of diseases.

Critical thinking skills

Develop scientific papers on health and disease related issues or problems. Communicate results and conclusions

Basic social communication skills in the performance of their profession. Autonomous learning capacity

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.

6. Units / Contents

Unit 1: General pathophysiology.

Unit 1.1 Practical class 1. General pathophysiology.

Unit 2: Physiopathology of the nervous system.

Unit 2.1 Practical class 2. Physiopathology of the nervous system.

Unit 3: Physiopathology of blood.

Unit 3.1 Practical class 3. Physiopathology of blood.

Unit 4: Cardiovascular pathophysiology.

Unit 4.1 Practical class 4. Cardiovascular pathophysiology.

Unit 5: Respiratory pathophysiology.

Unit 5.1 Practical class 5. Respiratory pathophysiology.

Unit 6: Renal pathophysiology.

Unit 6.1 Practical class 6. Renal pathophysiology.

Unit 7: Physiopathology of the digestive system.

Unit 7.1 Practical class 7. Digestive pathophysiology.

Unit 8: Endocrine pathophysiology.

Unit 8.1 Practical class 8. Endocrine pathophysiology

Unit 9: Osteoarticular physiopathology.

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]	Combination of methods	B01 B02 B03 B04 B05 EM13 G03 G09 G10 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	1.44	36	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	0.8	20	Y	Y	
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	3.6	90	Y	N	
Formative Assessment [ON-SITE]	Assessment tests	B03	0.16	4	Y	N	
Total:			6	150			
Total credits of in-class work: 2.4			Total class time hours: 60				
Total credits of out of class work: 3.6			Total hours of out of class work: 90				

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
Final test	0.00%	80.00%	
Assessment of active participation	20.00%	20.00%	
Test	70.00%	0.00%	There will be 2 progress tests. The first progress test (PP1) will comprise items 1-5 and the second (PP2) will comprise items 6-9, as well as the practical contents of item 5. Each progress test will have a value of 40 out of 100 points. These progress tests are not compulsory but can be retaken in a final test covering the whole of the subject corresponding to the ordinary examination, or if the latter is not passed, in the extraordinary examination.
Test	10.00%	0.00%	Students who reach 50 points after adding the points from PP1 + points from PP2 + points from participation and practical training, will be considered successful in the regular call for this subject. Those who do not, will have a final exam (ordinary exam) of the whole subject with a value of 80 points out of 100. The calculation of the score will be done in the following way: ordinary exam mark on ten x 80/100 + participation and practical points. With regard to the latter, given that the practical activities are compulsory and cannot be recovered, the existence of an absence without adequate justification will mean that the student will not be able to pass the course. Students who do not pass this score can opt for another final exam (extraordinary exam) whose characteristics and assessment are identical to those of the ordinary exam.
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:

A system of continuous assessment will be followed so that a cumulative score of 50 out of 100 will be awarded. After the end of the course, the score will be calculated as follows: points PP1 + points PP2 + points participation and practical activities. The students who reach 50 points in this calculation will be considered to have passed in the ordinary call of this course. Those who do not, will have a final exam (ordinary exam) of the whole subject with a value of 80 points out of 100. The calculation of the score will be done in the following way: ordinary exam mark on ten x 80/100 + participation and practical activities points. Regardless of the scores obtained, it is important to bear in mind that in order to pass this course it is essential to have attended and, if necessary, completed the practical activities (compulsory activities that cannot be recovered).

Non-continuous evaluation:

Evaluation criteria not defined

Specifications for the resit/retake exam:

The extraordinary call (resit/retake exam) consists of a single final test exam. Students who have not scored 50 points in the ordinary exam may take the "extraordinary exam" for the whole subject, which is worth 80 points. As in the previous call, the cumulative score of 50 points out of 100 is required to qualify for a pass. The calculation of the score will be made as follows: score of the "extraordinary examination" on ten x 80/100 + participation and practical points. The participation points and practical activities referred to in the above formula correspond to those obtained by the student in the ordinary call (final exam).

Specifications for the second resit / retake exam:

Only students who meet the requirements set out in the UCLM Student Assessment Regulations will be admitted to this competition and will be assessed in accordance with the criteria applied in the extraordinary competition.

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	36
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	20
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Formative Assessment [PRESENCIAL][Assessment tests]	4
Global activity	
Activities	hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	36
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	20
Study and Exam Preparation [AUTÓNOMA][Self-study]	90
Formative Assessment [PRESENCIAL][Assessment tests]	4
Total horas: 150	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Valentina L. Brashers & Neal S. Rote	Fisiopatología. Bases biológicas de la enfermedad	Panamericana	Buenos Aires	978-607-8546-33-6	2020	Recomendable sólo para preparar trabajos Libro de elección para

Juan Pastrana Delgado	Fisiopatología y patología general básicas para ciencias de la salud	Elsevier	978-84-8086-946-1	2013	numerosos temas. Libro sencillo y barato.
Laso, F.J.	Introducción a la medicina clínica. Fisiopatología y semiología	Elsevier-Masson.	978-84-458-2606-5	2015	Libro de elección para numerosos temas. Libro muy completo.
Raul A. Uribe Olivares	Fisiopatología. La ciencia del porqué y el cómo.	Elsevier	978-84-9022-934-7	2018	
Tommie L. Norris	Porth Fundamentos de Fisiopatología	Wolters Kluver Philadelphia	978-84-17949-72-3	2021	Libro muy completo util para la preparación de trabajos