UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: MOLECULAR ENDOCRINOLOGY
Code: 13331
Type: ELECTIVE
ECTS credits: 4.5
Degree: 341 - UNDERGRADUATE DEGREE PROGRAMME IN BIOCHEMISTRY
Academic year: 2022-23
Center: 501 - FACULTY OF ENVIRONMENTAL SCIENCES AND BIOCHEMISTRY
Group(s): 40
Year: 4
Duration: First semester
Main language: Spanish
Second language: Spanish
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **ROSARIO SERRANO VARGAS** - Group(s): **40**

Building/Office	Department	Phone number	Email	Office hours
Room 28/Building 6	QUÍMICA INORG., ORG., Y BIOQ.	5484	rosario.serrano@uclm.es	

2. Pre-Requisites

Not established

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

The subject "**Molecular endocrinology",** addresses the study of the physiologic mechanisms involved in neuroendocrine regulation of organ function. Its study is approached from an integrated point of view, including neural, immune and metabolic regulation and interaction in different physiologic and pathological conditions.

The teaching of this subject is based on previous knowledge acquired in the subjects of Signaling, control and cellular homeostasis, 2nd year and Human Physioloy, Metabolism and its regulation and Clinical biochemistry taught in the 3rd course.

From a professional point of view, the subjects provides theorical and practical knowledge of the endocrine system, general concepts of hormone production and release, cellular mechanisms of action as well as the clinical implications of each endocrine organ, that will be necesary for the development of some professional facets of a graduate in Biochemistry in his clinical and research point of view.

4. Degree competences achieved in this course

Course competences

Code	Description
E01	Express themselves correctly in basic biological, physical, chemical, mathematical and computer terms.
E09	Be familiar with the different cell types (prokaryotes and eukaryotes) at the level of structure, physiology and biochemistry and be able to critically explain how their properties are adapted to their biological function.
E29	To interpret the results of the biochemical parameters of a blood and urine analysis, among others, suggesting the orientation of the possible underlying pathologies of the alterations found.
G01	To possess and understand the knowledge in the area of Biochemistry and Molecular Biology at a level that, based on advanced textbooks, also includes cutting-edge aspects of relevance in the discipline
G04	To know how to transmit information, ideas, problems and solutions in the field of Biochemistry and Molecular Biology to a specialized and non-specialized public.
T02	User-level knowledge of Information and Communication Technologies (ICT).
T03	A correct oral and written communication
T05	Organizational and planning skills
T08	Ability to work as a team and, where appropriate, exercise leadership functions, encouraging entrepreneurship

5. Objectives or Learning Outcomes

Course learning outcomes

Description

The professional profile "molecular biomedicine" includes the application of biochemistry in the health sector, so that the student receives a strong biomedical and clinical orientation and also acquires the skills to carry out a professional activity in the field of teaching and research.

Additional outcomes

6. Units / Contents

Unit 1: Introduction to endocrine system

- **Unit 1.1** General principles of endocrine physiology
- **Unit 1.2** Assessment of endocrine function

Unit 2: Molecular Basis of endocrinology

- **Unit 2.1** The Hypothalamus ans Pituitary gland
- **Unit 2.2** Thyroid gland
- **Unit 2.3** Adrenal gland

Unit 2.4 Male and female reproductive system
Unit 2.5 Endocrine pancreas
Unit 2.6 Calcium homeostasis
Unit 3: Laboratory lessons

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		1.08	27	N	-	
Workshops or seminars [ON-SITE]	Combination of methods	E01 G01 G04 T03 T08	0.2	5	Y	N	Non-recoverable activity
Study and Exam Preparation [OFF-SITE]	Self-study	E09 E29 G01 T02 T05	2.7	67.5	N	-	
Final test [ON-SITE]	Assessment tests	E01 E09 E29 G01 G04 T03	0.08	2	Y	Y	Theorical classes. Recoverable activity in the retake exam
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities	E29 T05	0.4	10	Y	Y	Non-recoverable activity
Final test [ON-SITE]	Assessment tests	E09 E29	0.04	1	Y	Y	Practical classes. Recoverable activity in the retake exam
		Total:	**4.5**	**112.5**			
		Total credits of in-class work: 1.8					**Total class time hours: 45**
		Total credits of out of class work: 2.7					**Total hours of out of class work: 67.5**

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	80.00%	90.00%	Topics evaluation
Assessment of problem solving and/or case studies	10.00%	0.00%	Workshops evaluation
Laboratory sessions	10.00%	10.00%	Laboratory lessons evaluation
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:

It is compulsory to obtain a score equal to 4 or higher in the laboratory sessions (compulsory attendance + evaluation) to pass the course
It is mandatory to obtain a score equal to 4 or higher in the final test to add all other evaluable parts (labs and seminars)
The subject will only be considered passed if the sum of all the evaluable activities results in a grade of 5 or higher (out of 10)
The modality assigned by default to the student will be the continuous evaluation. Any student may request the change to the modality of non-continuous evaluation (before the end of the class period) by emailing the teacher, provided that he has not completed 50% of the evaluable activities. "

Non-continuous evaluation:

It is compulsory to obtain a score equal to 4 or higher in the laboratory sessions (compulsory attendance + evaluation) to pass the course
It is mandatory to obtain a score equal to 4 or higher in the final test to add all other evaluable parts (labs)
The subject will only be considered passed if the sum of all the evaluable activities results in a grade of 5 or higher (out of 10)

Specifications for the resit/retake exam:

The marks from the laboratory sessions and seminars are maintained until the Make-up Exam.
It is compulsory to obtain a score equal to 4 or higher in the laboratory sessions (compulsory attendance + evaluation) to pass the course
It is mandatory to obtain a score equal to 4 or higher in the final test to add all other evaluable parts (labs and seminars)
The subject will only be considered passed if the sum of all the evaluable activities results in a grade of 5 or higher (out of 10)

Specifications for the second resit / retake exam:

The mark obtained in the exam will be 100% of the final evaluation. It is mandatory to obtain a score equal to 5 or higher.
It is mandatory to have done the laboratory sessions to pass the course.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	hours

Unit 1 (de 3): Introduction to endocrine system

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Workshops or seminars [PRESENCIAL][Combination of methods]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	5

Unit 2 (de 3): Molecular Basis of endocrinology

Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	24
Workshops or seminars [PRESENCIAL][Combination of methods]	4
Study and Exam Preparation [AUTÓNOMA][Self-study]	57.5

Final test [PRESENCIAL][Assessment tests]	2
Unit 3 (de 3): Laboratory lessons	
Activities	**Hours**
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	10
Global activity	
Activities	**hours**
Workshops or seminars [PRESENCIAL][Combination of methods]	5
Final test [PRESENCIAL][Assessment tests]	2
Laboratory practice or sessions [PRESENCIAL][Practical or hands-on activities]	10
Class Attendance (theory) [PRESENCIAL][Lectures]	28
Study and Exam Preparation [AUTÓNOMA][Self-study]	62.5
Total horas:	107.5

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Antonino Jara Albarrán.	Endocrinología - Diabetes y Metabolismo. 2th edition.	Editorial médica panamericana		9788498352351		
David Gardner & Dolores Shoback	Greenspan's Basic & Clinical Endocrinology. 9th ed.	McGraw Hill		9780071622431	2011	
John Hancock.	Cell signaling. 3th edition.	Oxford University Press		9780199232109	2010	
John W. Baynes & Marek H. Dominiczak.	Bioquímica médica 3th edition	Elsevier		978-84-8086-730-6	2011	
Mac E. Hadley	Endocrinología. 4ª edición.	Prentice Hall.		848966014X	1997	
Melmed &Polonsky &Larsen&Kronenberg.	Williams Textbook of Endocrinology. 12th Edition.	Saunders.		9781437736007	2011	
Patricia Molina	Endocrine Physiology, Fourth Edition.	McGraw Hill		780071796774	2013	