

**1. General information****Course:** REPRODUCTIVE HEALTH**Type:** ELECTIVE**Degree:** 376 - UNDERGRADUATE DEGREE PROGRAMME IN PHARMACY**Center:** 14 - FACULTY OF PHARMACY**Year:** 5**Main language:** Spanish**Use of additional languages:****Web site:****Code:** 14346**ECTS credits:** 4.5**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
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2. Pre-Requisites

There are no prerequisites, although the student is recommended to have passed Physiology.

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

The Reproductive Health course is presented as an option for the Pharmacy student to learn new knowledge that will allow them to choose new career opportunities. The importance of sexual and reproductive health for a pharmacist and the importance of identifying, assessing and evaluating problems related to it.

In addition, the presence of the Biology of Reproduction line of the SaBio research group (UCLM) in the teaching staff of the Faculty of Pharmacy allows us to incorporate knowledge of Assisted Reproduction as a discipline in our optional offer. This course would be a further step in the knowledge acquired in subjects such as Physiology, Physiopathology and Pharmacology and Pharmacotherapy. Currently, the world of human assisted reproduction has great social and economic relevance, so the knowledge of it and especially of the pharmacology applied in these treatments, opens new horizons in the profession of pharmacist.

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.
ELF03	Know the ethical and deontological principles and to act according to the legislative, regulatory and administrative provisions that govern the professional practice, collaborating with other health professionals and acquiring teamwork skills.
EM03	Develop hygienic-sanitary analysis (biochemical, bromatological, microbiological, parasitological) related to health, food and the environment.
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.
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.
G12	Develop hygienic-sanitary analyses, especially those related to food and environment.
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

To know the different techniques of assisted reproduction.

Identify the different causes responsible for infertility and infertility and acquire the necessary knowledge to respond to them through the use of assisted reproduction.

To know the concepts of sterility and infertility.

Acquire basic knowledge in male and female sterility epidemiology.

To know the field of research in reproduction as well as its applications in Pharmacology and Medicine.

Distinguish all the effects derived from the pharmacological action in assisted reproduction, specifically analyzing the main effects and side effects after a projection towards the compression and rationalization of therapeutics.

In-depth knowledge of the pharmacology related to assisted reproduction and know how to apply it.

Complement basic and specific training aimed at a certain specialisation of an open, multidisciplinary nature and with direct application in the professional field.

6. Units / Contents

Unit 1: STERILITY AND INFERTILITY STUDY

Unit 1.1 Epidemiology of sterility. Study of the sterile couple. Factors affecting sterility. Epidemiology of sterility.

Unit 1.2 Study of the sterile male: Male infertility. Semen evaluation. Andrological assessment. Hormonal and surgical treatment of male infertility.

Unit 1.3 Female infertility: Uterine factor and tubal factor. Ovarian factor. Endocrinopathies with reproductive impact.

Unit 1.4 Other causes of infertility: infertility of unknown origin. Implantation failure. Repeated miscarriage.

Unit 2: ASSISTED REPRODUCTION

Unit 2.1 Assisted Reproduction Techniques: Freezing and sperm bank. Ovulation induction and scheduled intercourse. Artificial insemination. In vitro fertilization and intracytoplasmic sperm injection. Egg donors. Oocyte donation and endometrial preparation in recipients. Preimplantation genetic diagnosis. Oocyte aspiration. Embryo transfer. Oocyte cryopreservation. Genetics and assisted reproduction treatments. New techniques: Nuclear and cytoplasmic transfer, cloning and stem cells.

Unit 2.2 Pharmacology in Assisted Reproduction: Pharmacology in ovarian stimulation. Corifoliotropin alpha. Gonadotropin-releasing hormone agonists. Gonadotropin-releasing hormone antagonists. Special ovarian stimulation protocols. Natural cycle.

Unit 3: RESEARCH IN REPRODUCTION

Unit 3.1 Research and infertility. Research applied to assisted reproduction techniques. Main lines of research in reproduction.

ADDITIONAL COMMENTS, REMARKS

Practice 1: Preparation of sperm storage media.

Practice 2: Semen evaluation and sperm cryopreservation.

Practice 3: Obtaining and maturing oocytes. In vitro fertilization.

Practice 4: Legislation, ethics and news on assisted reproduction.

Visit to Insittuto Berbaneu (Reproductive Medicine)

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 ELF03 EM03 EM13 G09 G12 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	1.22	30.5	Y	N	
Workshops or seminars [ON-SITE]	Case Studies	B01 B02 B03 B04 B05 ELF03 EM03 EM13 G09 G12 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	0.12	3	Y	Y	
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	B01 B02 B03 B04 B05 ELF03 EM03 EM13 G09 G12 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	0.3	7.5	Y	Y	
Study and Exam Preparation [OFF-SITE]	Self-study	B01 B02 B03 B04 B05 ELF03 EM03 EM13 G09 G12 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	2.7	67.5	Y	N	
Formative Assessment [ON-SITE]	Assessment tests	B01 B02 B03 B04 B05 ELF03 EM03 EM13 G09 G12 G13 G14 G15 T01 T02 T03 T04 T05 T06 T07 T08	0.16	4	Y	Y	
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	Non-continuous	Description
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	assessment	evaluation*	
Oral presentations assessment	10.00%	0.00%	
Assessment of active participation	20.00%	20.00%	
Test	70.00%	80.00%	
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:

A system of continuous assessment will be followed, adapted to the regulations of the University of Castilla-La Mancha, so that the cumulative score of 5 out of 10 will be the result of the pass. To pass through progress tests, it will be necessary to have obtained at least a 5 to be able to add up the participation mark. Students who have not passed the course through progress tests may make it up in a single test in which theoretical knowledge will be assessed. The completion of the Labwork is mandatory.

Non-continuous evaluation:

Evaluation criteria not defined

Specifications for the resit/retake exam:

The extraordinary call consists of a single final test. Students will have a final exam with a value of 8 points out of 10. The student's participation grade earned during the regular meeting will provide the remaining 2 points.

The completion of the Labwork is mandatory.

Specifications for the second resit / retake exam:

Only students who meet the requirements set out in the Student Evaluation Regulations of the University of Castilla-La Mancha will be admitted to this competition and will be evaluated according to the criteria applied in the extraordinary competition. To pass this course it will be essential to have completed the internships and seminars. Students will have a final exam with a value of 8 points out of 10, including theoretical (6 points) and practical (2 points) knowledge. The student's participation grade earned during the regular meeting will provide the remaining 2 points.

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Unit 1 (de 3): STERILITY AND INFERTILITY STUDY	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	26
Workshops or seminars [PRESENCIAL][Case Studies]	3
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	12
Study and Exam Preparation [AUTÓNOMA][Self-study]	67.5
Formative Assessment [PRESENCIAL][Assessment tests]	4
Global activity	
Activities	hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	26
Workshops or seminars [PRESENCIAL][Case Studies]	3
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	12
Study and Exam Preparation [AUTÓNOMA][Self-study]	67.5
Formative Assessment [PRESENCIAL][Assessment tests]	4
Total horas: 112.5	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
José Alejandro Remohí Gimenez y cols.	Manual práctico de Esterilidad y Reproducción Humana. Aspectos clínicos.	Editorial Panamericana		9788491101512	2017	
José Alejandro Remohí Gimenez y cols.	Manual práctico de Esterilidad y Reproducción Humana. Laboratorio de Reproducción asistida.	Editorial Panamericana.		978-8498354577	2021	