COURSE DATA

DATA SUBJECT

Code: 40350
Name: Helminthiasis and Medical Entomology
Cycle: Master's Degree / Doctorate
ECTS Credits: 12
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
2038 - Master's Degree in Tropical Parasitic Diseases	Facultat de Farmácia i Ciències de L'alimentació	1	Annual

SUBJECT-MATTER

Degree	Subject-matter	Character
2038 - Master's Degree in Tropical Parasitic Diseases	Helminthiasis and medical entomology	COMPULSORY

COORDINATION

CORTES CARBONELL ALBA

SUMMARY

Included in the Master Course, the subject on Helminthiasis and Medical Entomology provides the students with a complete parasitological training providing a global overview as well as a detailed study of the main aspects on human helminthiasis and medical entomology. The subject covers the study of the aetiological agents, life cycles, epidemiology, sources of infection, pathology and clinical symptoms, diagnosis, treatment and control mesures of the main trematodiasis, cestodiasis, geo- and ageo-helminthiasis and nematodiasis with vectorial transmission. The subject also includes arachnology and medical entomology focusing mainly on dipterology. The impact of parasites produced by helminths is made unaware of the Sustainable Development Goals (SDG), specifically with Goal 3 aimed at guaranteeing a healthy life and promoting well-being.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

It will be necessary to hold one of the following qualifications (Bachelor's, Double Degree, Licentiate): Pharmacy, Medicine, Veterinary Medicine, Microbiology, Biology, Food Science and Technology, Human Nutrition and Dietetics, Biochemistry and Biomedical Sciences, Biotechnology, Environmental Sciences, Nursing, Physiotherapy. In the case of foreign students, they must hold an official qualification equivalent to one of the previous qualifications.

COMPETENCES / LEARNING OUTCOMES

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Be able to integrate into teams, both as managers or coordinators and for specific and limited functions and in support of the team or of others.

Conocer las enfermedades parasitarias en todos sus aspectos de etiología (caracterización morfoanatómica y molecular, ciclo biológico), epidemiología, clínica (sintomatología y patología), diagnóstico (etiológico, inmunológico y molecular), profilaxis y control.

Conocer la terapéutica antiparasitaria.

Contemplar en conjunto y tener en cuenta los distintos aspectos y las implicaciones en los distintos aspectos de las decisiones y opciones adoptadas, sabiendo elegir o aconsejar las más convenientes dentro de la ética, la legalidad y los valores de la convivencia social.

Ser capaz de asumir cualquiera de las tareas y responsabilidades relacionadas con las enfermedades parasitarias humanas: preparación práctica y formación teórica actualizadas de sanitarios para desempeñar trabajos, funciones y cargos de todo tipo y nivel en el amplio campo de la lucha, control, diagnóstico, difusión, enseñanza y estudio de las enfermedades parasitarias en todo el mundo.

Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

Students should possess and understand foundational knowledge that enables original thinking and research in the field.

DESCRIPTION OF CONTENTS

1. Human Trematodiasis

- In-depth multidisciplinary study of Trematodiases.
- In-depth theoretical and practical study of the main human Trematodiases.
- Specific analysis of the problem of these diseases in tropical and subtropical countries as well as other parts of the world.

- Study of all aspects of these diseases (morphoanatomy and life-cycle), epidemiology, clinical presentation (symptoms, pathology), diagnosis (aetiological, immunological, molecular), treatment, prophilaxis and control.

3. Schistosomiasis and fascioliasis

- Schistosomiasis or Bilharziasis: general analysis of the aetiology, life-cycle, transmission, pathogenesis, symptomatology, diagnosis, treatment and control.
- Fascioliasis: general analysis of the aetiology, life-cycle, transmission, pathogenesis, symptomatology, diagnosis, treatment and control.
- Medical malacology: study of the snails vectors acting as intermediate hosts in the transmission of Schistosomiasis and Fascioliasis , as well as other human helmintiases.

4. Cestodiasis

- Cestodiasis caused by adult stages: Diphyllobothriasis, Taeniasis, Hymenolepiasis, Dipylidiasis, unusual Cyclophyllids.

- Cestodiasis caused by larval stages: esparganosis, cysticercosis, hydatidosis, alveococosis, coenurosis, unusual metacestodiases.

5. Geohelminthiasis and Ageohelminthiasis

- Characterization and general study of human ageohelminths: *Trichuris trichiura, Ascaris lumbricoides* and *Enterobius vermicularis*.
- Detailed analysis of Trichurosis or Tricocefalosis, Ascariosis and Oxiuriosis or Enterobiosis;
- Characterization and general study of other Trichuridae and Ascarididae and of the parasitoses caused.
- Specific analysis of Anisakiosis.
- Characterization and general study of human geohelminths: *Strongyloides stercoralis, Ancylostoma duodenale* and *Necator americanus*.
- Detailed analysis of Strongiloidosis or Anguilulosis and of human Ancilostomosis.
- Characterization and general study of other Strongylidae and of the parasitoses caused.

6. Nematodiases of vectorial or indirect transmission

- Nematodiases transmitted by vectors: lymphatic filariasis: Wuchereriasis and Brugiasis; dermic filariasis: Loiasis and Onchocercosis; other filariases: Mansonellosis; Dirofilariasis

- Nematodiasis transmitted by accidental ingestion of the vector: Dracunculiasis

- Brief study of the morphology and biology of vectors: Culicids, Crhysops horsefly, Simulids, Culicoides and Cyclops

7. Arachnology and Medical Entomology

-Arachnids of medical importance: mites (Sarcoptidae, Trombiculidae, Demodicidae and others), ticks (Ixodidae and Argasidae) and cockroaches (Blattaria).

-Non-Diptera insects: lice and pubic lice (Anoplura), fleas (Sophonaptera), bedbugs (Cimicidae and Triatominae

8. Parasite Dipterology

- Dipteran Nematocera: black-flies (Simulidae); phlebotomine sand-flies (Phlebotominae); biting midges (Ceratopogonidae); mosquitoes (Culicidae), culicine and anopheline.

- Dipteran Brachycera: horse-flies (Tabanidae); house and vector flies (Cyclorrapha).

- Human myiasis caused by dipteran larvae, mainly flies.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	2,00
Theory	56,00
Seminar	2,00
Laboratory	60,00
Total hours	**120,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	20,00
Independent study and work	65,00
Preparation of lessons	15,00
Preparation for assessment activities	65,00
Resolution of case studies	15,00
Total hours	**180,00**

TEACHING METHODOLOGY

Theoretical master class, allowing the teacher to highlight the most important aspects of every lesson. Each master class will be accompanied by graphical material. Tutorial or meeting between the teacher and a group of students with the purpose of exchanging information, analysing, orientating or evaluating a problem or a project, of debating a topic etc. useful for the academic and personal development of the student. Participative model in the practical classes, guiding the work of the student in the laboratory, so that the knowledge acquired in the theoretical classes is practically applied and correct microscopic vision of the studied parasites is achieved.

EVALUATION

A student will pass the module with a minimum of 5 points out of 10.

Taking a written **obligatory examination** (90%), which includes questions, topics to be developed, concepts, problems or questions of reasoning, tests, drawings or schemes with questions, etc. The contents will include that the theoretical/practical lessons. The mark of the **continuous evaluation** (partial questionnaires, partial tasks, participation, motivation, assistance, etc.) makes up 10% of the final mark of the module.

You will not be able to take any exam again to raise your grade.

The copy or manifest plagiarism of any task that is part of the evaluation will imply the impossibility of passing the subject, then submitting to the appropriate disciplinary procedures.

Please note that, in accordance with Article 13. d) of the University Student Statute (RD 1791/2010, of December 30), it is the duty of a student to refrain from using or cooperating in fraudulent procedures in the evaluation tests, in the works carried out or in official documents of the university.

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