MEDICAL ENTOMOLOGY

CU characterization:

CU name:
Medical Entomology

Scientific area acronym:
EM

Duration:
Semiannual

Working hours:
296

Contact hours:
109

ECTS:
11

Observations:
In this academic year, the classes of this CU were distributed as follows:
T: 21.5 hours; P: 25.5 hours; S: 4 hours; OT: 55 hours; Rating: 3.5 hours

Teacher in charge and respective teaching load in the CU:
Paulo Almeida - 25 hours

Other teachers and respective teaching load in the CU:
Carla Maia – 16 hours
Carla Sousa – 34.5 hours
Teresa Novo – 47.5 hours
João Pinto – 12 hours
Luís Filipe Lopes – 48 hours

Intended learning outcomes (knowledge, skills and competences to be developed by the students):
After this unit, students should be able to:

1. Define Medical Entomology in the context of International Health
2. Define arthropod vector, describe and distinguish types and mechanisms of transmission of pathogens

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Intended learning outcomes (knowledge, skills and competences to be developed by the students): (continuation)

3. Describe the medical importance, geographic distribution, life cycles and bioecology of arthropod groups: Pentastomida; Scorpionida; Araneae; Acari; Triatominae; Cimicidae; Phtiraptera; Siphonaptera; Simuliidae; Ceratopogonidae; Phlebotominae; Culicidae; Tabanidae; Glossinidae; Muscomorpha
4. Identify specimens of the above arthropods, using dichotomous keys
5. Define the concept of vectorial efficiency, vector competence, vectorial capacity
6. Characterize the epidemiology of vector-borne diseases
7. Describe the techniques for entomological surveys
8. Discuss the methods for vector control
9. Analyze the introduction of exotic species in the context of climate change and vector-borne re/emergent diseases

Syllabus:

I. Medical Entomology in the context of International Health
II. Definition of arthropod Vector; Types and mechanisms of transmission of pathogens by arthropods
III. Main groups of medical importance : scorpions, spiders, mites, ticks, lice, bedbugs, triatomine bugs, fleas, black flies, sand flies, Culicoides, mosquitoes, horseflies, tsetse flies and synanthropic flies; Systematics, geographic distribution, life cycle, bioecology
IV. Identification of arthropods using dichotomous keys
V. Vector Efficiency, vector competence, and Vectorial capacity
VI. Epidemiology of vector-borne diseases
VII. Main techniques for entomological surveys
VIII. Methods for vector control
IX. Introduction of exotic species and its consequences, in the context of climate change, and vector-borne re/emerging diseases

Teaching methodologies (including assessment):

Teaching methods:
1. Lectures (T=19h),
2. Theoretical-practical classes (TP=4h),
3. Laboratory practical classes (PL=24h),
4. Seminar (S=3h).
5. Theoretical and practical tests (O=6h),
6. Tutorial supervision (OT=55h),
7. Teaching hours = 56+55 = 111h
8. Autonomous work (220h).

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Teaching methodologies (including assessment): (continuation)

Evaluation methods:

1. Written essay focusing on current main research lines on a topic within the group "Ticks" (± 2,000 words) 20%.
2. Seminar 20%.
3. Theoretical test (30 multiple-choice questions); Practical test consisting of morphological identification of specimens using identification keys (with consultation) ; T+P tests 60%.

References for consultation / mandatory existence:

- Beaty, B.J. & Marquardt WC (Ed.). 2005. Biology of disease vectors. Elsevier Academic Press, Burlington MA, USA. 632 pp.
- Cook, G.C. & Zumla, A. (Eds.) 2003/2009. Manson's Tropical Diseases. Twentieth first/second edition, W.B. Saunders, Elsevier Science Ltd., London, U.K., 1847 pp.
- Evans GO. 1992. Principles of Acarology. CAB International, Oxon. 563 pp.
- Lane RP. &Crosskey , RW.(Eds). 1993. Medical insects and arachnids. Chapman & Hall, London. 723 pp
- Rodhain F. & Perez C. 1985. Précis d'éntomologie médicale et vétérinarire. Maloine, Paris. 458 pp.
- Service MW. 2000. Medical entomology for students. Cambridge University Press, Cambridge. 283 pp.

  In addition, teachers will indicate free access scientific papers or provide their pdf.