Course Unit Descriptor

Study Programme: PHYTOMEDICINE

Course Unit Title: ACAROLOGY AND NEMATOLOGY

Course Unit Code: 19.FTM013

Name of Lecturer(s): prof. Aleksandar Jurišić, PhD; prof. Aleksandra Petrović, PhD, doc. Ivana Ivanović, PhD

Type and Level of Studies: Undergraduate academic studies

Course Status (compulsory/elective): compulsory

Semester (winter/summer): summer

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated: 6

Prerequisites: none

Course Aims:
Student education and training for independent identification of mites, chiggers, ticks and nematodes in given natural and laboratory conditions of importance for agriculture, veterinary and human medicine. Training students to apply appropriate control measures in accordance with good agricultural practice, veterinary and medical ethics.

Learning Outcomes:

Students will gain theoretical and practical knowledge in identification of mite, chigger, tick and nematode species, determining the vector potential, damage threshold, type and degree of damage in agriculture, veterinary and medicine, as well as the ability to adequately assess and apply appropriate preventive measures and control methods.

Syllabus:

Theory
Importance and aim of acarology. General features and biology of mites, chiggers and ticks. Morphology and anatomy. Reproduction and development. Environmental factors influencing the emergence and maintenance of populations. Eriophydae, Tetranychoidae, Tarsonemoidea, Acaroidea, Glycyphagidae, Acaroidea, Oribatuloidea - damage threshold, vector potential and control. Acarines - predatory species. Ixodidae, Argasidae and Nuttalliellidae - vectors of human and animal diseases, monitoring and control. Introduction to nematology. Nematode morphology and anatomy. Evolution, systematics and taxonomy of nematodes. Biology, ecology, reproduction and life cycle. Parasitism and trophic relations of nematodes. Sedentary and migratory endoparasites and ectoparasites. Taxonomy, monitoring and control of phytophagous nematodes. Quarantine species of mites and nematodes. Phytosanitary regulations and measures.
Practice
Methods for mite collection and identification. Determination of mites: Eriophydae, Tetranychidae, Bryobidae, Tenuipalpidae, Tarsonemidae, Acaridae (Tyroglyphidae), Glycyphagidae, Acaridae (Tyroglyphidae), Oribatulidae, Phytoseidae, Ixodidae, Argasidae. Nematodes sampling and preparation. Nematode identification: Heterodera, Globodera, Meloidogyne, Ditylenchus, Aphelenchoides, Aphelenchus, Bursaphelenchus, Anguina, Pratylenchus. Collection and extraction of nematodes.

Required Reading:

Petanović R. (2004): Atlas – štetne grinje ukrasnih biljaka. Beografik, Beograd.
Krantz G.W., Walter D.E. (2009): A Manual of Acarology, 3rd edition. Texas Tech University press.
Helle W., Sabelis M.W. (1985): Spider Mites, their biology, natural enemies and control. Elsevier.
Radivojević M. (2019): Fitonematologija. Poljoprivredni fakultet, Beograd-Zemun. Univerzitet u Beogradu.
Chen, Z. X., Chen, S.Y., Dickson, D.W. (eds) (2003): Nematology - Advances and Perspectives. Volume II: Nematode Management and Utilization. Tsinghua University Press China & CABI.

Weekly Contact Hours:	**Lectures: 45**	**Practical work: 45**

Teaching Methods:

Lectures: presentations and consultations;
Practical classes: independent laboratory exercises with microscopic and macroscopic samples, calculations

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	30
Practical work	5	oral exam	30
Preliminary exam(s)	30	…….	
Seminar(s)			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			