Subject	**Parasitology and Invasiology**
ECTS	8
Course status	obligatory
Course final assessment/evaluation of outsomes	exam
Prerequisites	completion of subjects: Animal Anatomy; Animal physiology

Field of study:	**Veterinary Medicine**
Fprofile of study	Practical
The code of studies (educational level)	SJ
Semester of studies	winter/summer
Language of instruction	English

Course offered by: UCMW

Name od faculty offering the course	UCMW UJ-UR

Learning outcomes of the course:

Symbol of the outcome	Description of learning outcome	Reference to	
		Main field of study outcomes	Discipline
	KNOWLEDGE: - student knows and/or understands:		
PAR_W1	of the biology of parasitic protozoa, arthropods, helminths, describes and explains their development cycles and the spread of diseases they cause, identifies parasites and determines the threats they cause to animal and human health	A.W13	RW
PAR_W2	and uses the terminology of parasitology and veterinary helminthology	A.W13	RW
PAR_W3	knows, describes and interprets clinical symptoms and pathological changes in infected animals and proposes appropriate prevention and treatment of invasive diseases caused by protozoa, arthropods, helminths	B.W3 B.W10	RW
	SKILLS- student id able to:		
PAR_U1	can diagnose with the known methods the type and nature of the invasion	B.U3 B.U6	RW
PAR_U2	can choose the optimal strategy to combat particular parasites and verify its decisions depending on the animal's health condition	B.U13	RW
PAR_U3	implement appropriate preventive measures	B.U25	RW
PAR_U4	cooperate with breeders and owners of animals, as well as with competent administrative services, in the field of combating parasitic diseases of animals	A.U12 C.U4	RW
	SOCIAL COPLETENCE - student is ready to:		

Teaching Contents

Lectures		**60**	**hours**
	General parasitology issues and parasitological terminology. Issues in the field of invasiology.		

Topics of lectures	Interactions in the parasite-host system. Defense and immunopathological reactions as well as Antiparasitic agents. Active substances of drugs. Parasitic arthropods - systematics and biology. Pathology, epidemiology and epizootiology of infestation by external parasites. Akaroses of birds and mammals - systematics and biology. Pathology, epidemiology and epizootiology of invasion. Parasitic mites - systematics and biology. Pathology, epidemiology and epizootiology of invasion. Parasitic orders of insects - systematics and biology. Pathology, epidemiology and epizootiology of invasion. Parasitic flies - systematics and biology. Pathology, epidemiology and epizootiology of invasion. Fighting arthropod infestation. Systematics, morphology and biology of protozoa. Pathology, epidemiology and epizootiology as well as prevention of protozoan invasions. Systematics, morphology and biology of worms. Pathology, epidemiology and epizootiology as well as prevention of flukes invasion. (including Fasciolosis, Dicrocoeliosis, Paramphistomosis). Chemotherapy for parasitosis caused by flukes. Systematics, morphology and biology of tapeworms in carnivorous animals, poultry, horses and ruminants. Pathology, epidemiology and epizootiology as well as the prevention of tapeworms in intermediate and final hosts. (including Mesocestoididae, Taeniidae, Anoplocephalidae, Hymenolepididae, Diphyllobothridae), Chemotherapy of tapeworms in mammals and birds. epizootiology as well as prevention of diseases caused by nematodes. (including Anisakidae, Ascarididae) Gastrointestinal worms. Systematics, morphology and biology of nematodes - Pathology, epidemiology, epizootiology and invasion prevention. (including Strongylidae, Trichostrongylidae) Invasions of lungworms of various animal species - Pathology, epidemiology, epizootiology and invasion prevention. (including Dictyocaulidae, Protostrongylidae, Syngamidae) Chemotherapy of nematode invasions of birds, companion animals, ruminants, horses and pigs.
Accomplished learning outcomes	Symbols of learning outcomes for lectures
Verifivation methods, rules and criteria of outcome assesment	The condition for passing the classes in semester 1 is passing the stage tests of the exercises.
Classes	**60 hours**
Topics of classes	Ticks. Mites, rat mites. Bee mites: Varroa destructor and Acarapis woodi. Diagnostic methods of invasion, symptoms, treatment methods Scabies and Demodex. Cheyletiella. Diagnostic methods of invasion, symptoms, treatment methods Lice, diagnostic methods of invasion, symptoms, treatment methods Fleas. Fluff-shaped. Threads and lice. Flies invasions. Diagnostic methods of invasion, symptoms, Diagnostic methods used in the detection of external parasitoses in animals. External parasitoses in the zoonotic aspect Repertory. Colloquium on external parasites and parasites that cause them. Flagellar invasions in animals: Trypanosoma sp., Leishmania sp. Invasion diagnostic methods, symptoms, treatment methods Invasions Trichomonas sp. and Giardia sp. (Breeding methods; rapid diagnostic tests based on the immunochromatographic method; molecular diagnostics). Toxoplasma gondii, Neospora caninum, Cryptosporidium sp. (Enzyme immunoassay methods - ELISA test; molecular diagnostics). Diagnostic methods of invasion, symptoms, treatment methods. Blood sporangia: Babesia sp., Plasmodium sp. (Thin and thick blood smears: Giemza staining). Diagnostic methods of invasion, symptoms, treatment methods Coccidia. Eimeriosis and isosporosis, diagnostic methods of invasion in various species of animals, symptoms, treatment methods Diagnostic methods used in the detection of internal parasitosis in animals Repertory. Colloquium on protozoal diseases. Completion of the semester.

	Paramphistomosis, Dicroceliosis. Diagnostic methods of invasion, symptoms, treatment methods
	Carnivore and ruminant flukes, Fasciolosis. Diagnostic methods of invasion, symptoms, treatment methods, Bird flukes, dioecious flukes. Diagnostic methods of invasion, symptoms, treatment methods
	Diagnostic methods used in the detection of internal parasitosis in animals.
	Tapeworms of carnivores, poultry, horses and ruminants. Diagnostic methods of invasion, symptoms, treatment methods.
	Nematodes - Ascaris of carnivores. Diagnostic methods of invasion, symptoms, treatment methods. Postworms, and pinworms. Diagnostic methods of invasion, symptoms, treatment methods.
	Ruminant gastrointestinal helminths, Hookworms. Diagnostic methods of invasion, symptoms, treatments,
	Helminths of the respiratory system of birds and mammals. Diagnostic methods of invasion, symptoms, treatment methods.
	treatment methods.
	Węgorki, Filariasis. Spikedhead, parasitology section.
	Repertory. Colloquium on nematodes. Completion of the semester.

Accomplished learning outcomes	
Verification methods, rules and criteria of outcome assessment	Students carry out parasitological tests with the use of adequate diagnostic methods, microscopy and draw selected species of parasites - it is necessary to pass all the above-mentioned elements. Passing tests - 2 per semester, according to the scale for correct answers: 60-65% – sufficient 66-75% – sufficient plus 76-85% – good 86-95% – good plus 96-100% – Very good The average of the semester grades for semesters 5 and 6 is 50% of the final grade for

References	
Basic:	Gundłach J.L., Sadzikowski A.B. 2004. Parazytologia i parazyt Bowman D.D. 2012. Parazytologia weterynaryjna Georgis. Els Deryło A.: Parazytologia i akaroentomologia medyczna. PWN Warszawa 2002 Gundłach J.L., Sadzikowski A. B. 1995. Diagnostyka i zwalczanie inwazji pasożytów u zwierząt. Wyd. AR, Lublin.
Supplementary:	Furmaga S. 1983. Choroby pasożytnicze zwierząt domowych. Stefański W. 1968. Parazytologia weterynaryjna, t. I i II, PWRiL. Stefański W., Żarnowski E. 1971. Rozpoznawanie inwazji pasożytniczych u zwierząt, PWRiL.

Structure of learning outcomes			
Dyscipline	Agriculture science - dyscypline veterinary	8,0	ECTS

tructure od student activities:		
		5 ECTS
including	lectures	
	classes	
	consultations	
	participation in research	

mandatory traineships	
participation i examinations	
E- lerning	ECTS
Students own work	3 ECTS