



## Course Specification of Veterinary parasitology

**(1)**

I. Course Identification and General Information:						
1	Course Title:	Veterinary parasitology (1)				
2	Course Number & Code:	MI 354				
3	Credit hours:	C.H				Total
		Theoretical	Practical	Training	Seminar	
		3	1	0	0	4
4	Study level/ semester at which this course is offered:	Third year: first semester				
5	Pre –requisite (if any):	PH242, PH243				
6	Co –requisite (if any):					
7	Program (s) in which the course is offered:	Bachelor's degree (B. Sc.) Veterinary Medicine				
8	Language of teaching the course:	English				
9	Location of teaching the course:	Faculty of veterinary medicine				
10	Prepared by:	Dr. hamid Alrefaiey				
11	Date of approval:					

### II. Course description:

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University  
 Prof. Dr. Al-Qassim Mohammed Abbas



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This course consists of theoretical and practical section is intended to familiarize the students with the essential facts and concepts of veterinary parasitology enabling them to control and prevent economical losses, parasitozoonoses. The lectures will discuss principal endo- and ectoparasites of domestic animals, which are of national or international importance to veterinary medical practice. Emphasis is placed on basic knowledge of parasite biology, epidemiology, pathogenesis, diagnosis, chemotherapy and control of parasitic infections. The purpose of the practical courses is to highlight and expand on important parasites presented in lectures, especially identification and diagnostics. At the practicals which follow the lectures the students become familiar with the methods of diagnosis including the interpretation of results. They observe stages of parasites in blood, faecal samples and preparation of a range of specimens.

<b>III. Intended learning outcomes (ILOs) of the course:</b>			
<b>(A) Knowledge and Understanding:</b>			
Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: <b>Knowledge and Understanding.</b>			
Program Intended Learning Outcomes (Sub- PILOs) in: <b>Knowledge and Understanding</b>		Course Intended Learning Outcomes (CILOs) in: <b>Knowledge and Understanding</b>	
After completing this program, students will be able to:		After completing this course, students will be able to:	
<b>A1-</b>	Demonstrate a sound knowledge and understanding of concepts and principles of general culture, basic science, and that support veterinary medicine.	<b>a1-</b>	Define the basic terms in the fields of General and Special Parasitology.
<b>A2-</b>	Clarifies basic concepts, principles, and theories related to animal production, animal health and nutrition, behavior management,	<b>a2-</b>	Identify deferent phyla, class, order, families, species of parasites.

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhamisi

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shawkany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University  
 Prof. Dr. Al-Qassim Mohammed Abbas



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breeding and care that is related to animal ethical codes..			
<b>Teaching And Assessment Methods For Achieving Learning Outcomes:</b>			
<b>Alignment of Learning Outcomes of Knowledge and Understanding to Teaching and Assessment Methods:</b>			
<b>Course Intended Learning Outcomes (CILOs) in Knowledge and Understanding</b>		<b>Teaching strategies/methods to be used</b>	<b>Methods of assessment</b>
completing this course, students will be able to:		<ul style="list-style-type: none"> <li>▪ Lecture by data show</li> <li>▪ Dialogue and discuss</li> <li>▪ Practical practice</li> <li>▪ self directed learning skills.</li> <li>▪ Analyze the results and reach specific conclusion.</li> <li>▪ Writing a review paper to gain the skills of self-learning and presentation.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Written examination</li> <li>▪ Quiz</li> <li>▪ Oral examination</li> <li>▪ Practical examination</li> <li>▪ Activities</li> <li>▪ Reports evaluation</li> </ul>
<b>a1-</b>	Define the basic terms in the fields of General and Special Parasitology.		
<b>a2-</b>	Identify deferent phyla, class, order, families, species of parasites.		

<b>(B) Intellectual Skills:</b>	
Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: <b>Intellectual skills</b>	
<b>Program Intended Learning Outcomes (Sub- PILOs) in Intellectual skills</b>	<b>Course Intended Learning Outcomes (CILOs) of Intellectual Skills</b>
After completing this program, students will be able to:	After completing this course, students will be able to:

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasak Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University

Prof. Dr. Al-Qassim Mohammed Abbas



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<b>B1</b>	Competently practices analytical and critical thinking skills in studying and assessing health problems and reading the results of animal medical examinations that is related to sciences.	<b>b1-</b>	Evaluate the proper approach for Parasites and their life history.
<b>B2-</b>	Predicts an appropriate medical diagnosis for the most common disease states through analysis of clinical story data and the results of medical examinations of a sick animal.	<b>b2-</b>	Investigate reasons and sources of infection.

**Teaching And Assessment Methods For Achieving Learning Outcomes:**

**Alignment of Learning Outcomes of Intellectual Skills to Teaching Methods and Assessment Methods:**

Course Intended Learning Outcomes (CILOs) in Intellectual Skills.		Teaching strategies/methods to be used	Methods of assessment
<b>After completing this course, students will be able to:</b>			
<b>b1-</b>	Evaluate the proper approach for Parasites and their life history	<ul style="list-style-type: none"> <li>▪ Dialogue and discuss</li> <li>▪ Lecture</li> <li>▪ Practical practice</li> <li>▪ Problem solving</li> <li>▪ Working in groups</li> <li>▪ Labor training</li> <li>▪ Researches and projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Written examination</li> <li>▪ Oral examination</li> <li>▪ Practical examination</li> <li>▪ Performance notice</li> <li>▪ Achievement file</li> <li>▪ Reports evaluation</li> <li>▪ Proposal evaluation</li> </ul>
<b>b2-</b>	Investigate reasons and sources of infection.		

**(C) Professional and Practical Skills:**

**Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Professional and Practical Skills**

Program Intended Learning Outcomes (Sub- PILOs) in Professional and Practical Skills	Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills
<b>After completing this program, students will be able to:</b>	<b>After completing this course, students will be able to:</b>

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University  
 Prof. Dr. Al-Qassim Mohammed Abbas



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<b>C2-</b>	Practices practical, diagnostic, clinical and research skills, including the collection of samples in various fields of veterinary medicine and related sciences, in a safe and effective manner, considering the ethics of the profession.	<b>c1-</b>	Practice of preparation of samples of parasites.
<b>C3-</b>	Reads the results of laboratory investigations and diagnostic scans and writes reports and prescriptions for all common cases in a proper way.	<b>c2-</b>	Evaluate of examination of samples for parasitic infection by different methods

**Teaching And Assessment Methods For Achieving Learning Outcomes:**

**Alignment of Learning Outcomes of Professional and Practical Skills to Teaching and Assessment Methods:**

Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		-Practical practice -Problem solving -Working in groups -Collaborative learning	- Written examinations - Oral examinations - Practical examination - Performance notice - Achievement file - Reports evaluation - Proposal evaluation
<b>c1-</b>	Practice of preparation of samples of parasites.		
<b>c2-</b>	Evaluate of examination of samples for parasitic infection by different methods		

**(D) General / Transferable Skills:**

**Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: General and Transferable skills**

Program Intended Learning Outcomes (PILOs) in General / Transferable skills	Course Intended Learning Outcomes (CILOs) in Transferable skills
After completing this program, students will be able to:	After completing this course, students will be able to:

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhamisi

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University  
 Prof. Dr. Al-Qassim Mohammed Abbas



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<b>D1-</b>	Communicates effectively with Professional colleagues and animal owners and expresses his ideas clearly and objectively.	<b>d1-</b>	Communicate effectively with animal's appropriate communication skills.
<b>D4-</b>	Works in normal conditions, crises and epidemics, alone and effectively within a medical team.	<b>d2-</b>	Search the web for a given course topic to review.

**Teaching And Assessment Methods For Achieving Learning Outcomes:**

**Alignment of Learning Outcomes of General and Transferable skills to Teaching and Assessment Methods**

Course Intended Learning Outcomes (CILOs) in General and Transferable Skills		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		<ul style="list-style-type: none"> <li>▪ Dialogue and discuss</li> <li>▪ Working in groups</li> <li>▪ Scientific visits</li> <li>▪ Researches and projects</li> <li>▪ Self learning</li> <li>Problem solving</li> </ul>	<ul style="list-style-type: none"> <li>▪ Achievement</li> <li>▪ Reports evaluation</li> <li>▪ Proposal evaluation</li> <li>▪ Performance</li> <li>Practical examination</li> </ul>
<b>d1-</b>	Communicate effectively with animal's owners using appropriate communication skills.		
<b>d2-</b>	Search the web for a given course topic to build up a review.		

**IV. Course Content:**

**1 – Course Topics/Items:**

**a – Theoretical Aspect**

Order	Topic List / Units	CILOs (symbols)	Sub-topic List	Number of weeks	Contact hours
1	Introduction of parasitology Phylum:Platyhelminthes; class; Trematoda	a1,a2,b1,b2,c1,c2	Definition, classification, parasites and parasitosis	1	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrahman Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University

Prof. Dr. Al-Qassim Mohammed Abbas



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			Platyhelmenthes: Classification  Order: Digenea: Classification , Morphology, Development of Trematoda		
2	Family: Fasciolidae Family: Dicrocoeliidae, Family:Heterophyiidae	a1,a2,b1,b2,c1 ,c2	Genus : Fasciola  Genus:Dicrocoelium, Genus: Heterophyes	2	2
3	Family: Echinostomatidae  Family: Schistosomatidae	a1,a2,b1,b2,c1 ,c2	Genus: Echinochasmus, Genus: Echinostomum Genus: Paramphistomum Genus: Cotylophron, Genus: Carmyerius Genus: Gastrodiscus	3	2
4	Class: Cestoidea; Subclass: Colyloda;  Family: Diphylobothridae  Family: Bothriocephalidae Subclass Eucestoda;  Family: Taeniidae Family: Dilepididae  Family: Hymenolepididae	a1,a2,b1,b2,c1 ,c2	Classification and Morphology, Development of Cestodes  Genus: Diphylobothrium Genus: Spirometra Genus: Polyonchobothrium Genus: Bothriocephalus  Genus: Taenia Genus: Echinococcus  Genus: Dipylidium Genus: Hymenolepis	4	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University  
 Prof. Dr. Al-Qassim Mohammed Abbas



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5	<p>Family: Anoplocephalidae</p> <p>Family: Thysanosomidae</p> <p>Family: Davainiidae</p> <p>Family: Proteocephalidae</p>	a1,a2,b1,b2,c1,c2	<p>Genus: Anoplocephala</p> <p>Genus: Paranoplocephala</p> <p>Genus: Moneizia</p> <p>Genus: Avitellina</p> <p>Genus: Stilesia</p> <p>Genus: Davainea</p> <p>Genus: Railliatina</p> <p>Genus: Cotugnia</p> <p>Genus: Proteocephalus</p>	5	2
6	<p>Family: Caryophyllidae</p> <p>Phylum: Nematelminthes</p> <p>Subclass: Phasimida: order : Ascaridida</p> <p>Superfamily: Ascarididea; Family: Ascaridae</p>	a1,a2,b1,b2,c1,c2	<p>Genus: Caryophylleus</p> <p>Genus: Wynionia</p> <p>Class: Nematoda :Morphology and development of Nematodes</p> <p>Genus: Ascaris</p> <p>Genus: Parascaris</p> <p>Genus: Toxascaris</p>	6	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University  
 Prof. Dr. Al-Qassim Mohammed Abbas





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7	Family: Anisakidae Family: Ascarididae Superfamily: Heterakoidea Family: Heterakoidae Superfamily: Oxyuroidea      Family: Oxyuridae	a1,a2,b1,b2,c1 ,c2	Genus: Toxocara Genus: Anisakis Genus: Ascaridia Genus: Heterakis Genus: Oxyuris Genus: Entrobius Genus: Passalurus Genus : Sublura	7	2
8	Superfamily: Rhabditoidea Family: Rhabditidae Family: Strongyloididae Order: Strongylida Superfamily: Ancylostomatidea Family: Ancylostomatidae Superfamily: Trichostrongylidae Family: Trichostrongylidae	a1,a2,b1,b2,c1 ,c2	Genus : strongyloides Genus: Ancylostoma Genus: Bunostomum Genus : Necator Genus: Haemonchus Genus: Ostertagia Genus: Nematodirus	8	2
9	Family :Dictycaulidae Superfamily: Strongyloidea      Family: Strongylidae	a1,a2,b1,b2,c1 ,c2	Genus: Dictycaulus Genus: Strongylus	9	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University

Prof. Dr. Al-Qassim Mohammed Abbas



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	Family: Trichonematidae  Family: Chabertidae		Genus: Trionotophorus  Genus: Trichonema  Genus: Oesophagostomum  Genus: Chabertia		
10	Family: Syngamidae  Family: Amidostomatidae  Superfamily: Metastrongylidea  Family: Metastrongylidae	a1,a2,b1,b2,c1,c2	Genus: Syngamus  Genus: Amidostoma  Genus: Metastrongylus  Genus: Meullreius  Genus: Protostrongylus	10	2
11	Order: Spirurida Superfamily: spirurtoidea Family: Spiruridae  Family: Camallanidae  Family: Cucullanidae  Family: Acuaridae  Family: Tetrameridae	a1,a2,b1,b2,c1,c2	Genus: Habronema  Genus: Spirocerca  Genus: Paracamellanus  Genus: Camallanus  Genus: Cuculanus	11	2
12	Superfamily: Filarioidea Superfamily: Dracanculoidea  Subclass: Aphasmda	a1,a2,b1,b2,c1,c2	Family: Filaridae  Family: Setaridae  Family: Onchocercidae  Family: Dracunculidae  order: Enoplida	12	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrahman Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University

Prof. Dr. Al-Qassim Mohammed Abbas



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			Superfamily: Trichuriodea  Family: Trichinillidae  Family: Trichuridae		
13	Fish parasites: Phylum: Annelida Class: Hirudinea (leeches)  Family: Psicolidae  Phylum: Acanthocephala  Family: Acanthostomidae  Family: Allocreadida	a1,a2,b1,b2,c1 ,c2	Genus: Psicolida  Genus: Hemichepesis  Genus: Cystobrunchialis  Genus: Acanthosentis  Genus: Acanthocephalans  Genus: Acanthostomum  Genus: Orientocreadium	13	2
14	Family: Paramphistomatidae  Order: Monogenea  Family: Dactylogyridae  Family: Gyrodactylidae  Encysted metacercariae infecte fish	a1,a2,b1,b2,c1 ,c2	Genus: Sandonia sudanesis Genus: Deropristis mllaid  Genus: Dactylogyrus  Genus: Gyrodactylus  spot disease, yellow grup disease.	14	2
<b>Number of Weeks /and Units Per Semester</b>				<b>14</b>	<b>28</b>

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasak Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University

Prof. Dr. Al-Qassim Mohammed Abbas



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<b>b- Training Aspect:</b>				
Order	Training Tasks	CIOs (symbols)	Number of weeks	Contact hours
1	Laboratory procedures in helminthology - Examination of faeces, Macroscopic examination, Direct examination of faecal sample, Concentration methods, Sedimentation technique Flootation technique, Laboratory reagents and solutions	a1,a2,b1,b2,c1,c2	1	2
2	- Collection and processing and identification of helminth parasite (Trematodes, Cestodes and Nematodes) - examination of faecal sample, Collection of helminths: - Fixation; Common fixatives , Preservation: Kaiserling's preservative -Staining, processing, permanent mounting and identification of trematode and cestode parasites - Flattening / Stretching -Staining solutions for trematodes and cestodes -stain Procedure for immediate examination of cestodes -Meggit's rapid staining technique for cestodes.	a1,a2,b1,b2,c1,c2	1	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhamisi

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University

Prof. Dr. Al-Qassim Mohammed Abbas



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	-Processing and identification of nematode parasites -Stepwise procedure for clearing of nematodes			
3	-Common flotation solutions -Preservatives -Fixatives for trematodes and cestodes -Commonly used stains for trematodes and cestodes	a1,a2,b1,b2,c1,c2	1	2
4	Classification, -dentification of trematode parasite eggs	a1,a2,b1,b2,c1,c2	1	2
5	-Fasciola spp. (Composite egg)	a1,a2,b1,b2,c1,c2	1	2
6	-Larval stages of trematode parasite - Eggs of trematode parasites	a1,a2,b1,b2,c1,c2	1	2
7	<b>-Adult stages of trematodes</b> - Schistosomes	a1,a2,b1,b2,c1,c2	1	2
8	<b>Identification of cestode parasites:</b> Identification of cestode parasites Eggs of cestode parasites	a1,a2,b1,b2,c1,c2	1	2
9	<b>-Larval stages of cestodes</b> <b>-Adult stages of cestodes</b> <b>Ruminant cestode:</b> Monezia expansa, Moniezia benedeni, Avitellina lahorea, Thysaniezia giardi Stilesia globipunctata	a1,a2,b1,b2,c1,c2	1	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhamisi

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

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10	<p><b>Equine tapeworms:</b></p> <p>Anoplocephala perfoliata,                  Anoplocephala magna,                  Paranoplocephala mamillana</p> <p><b>Human tapeworms:</b></p> <p>Taenia spp</p>	a1,a2,b1,b2,c1,c2	1	2
11	<p><b>Poultry cestodes</b></p> <p>Davainea proglottina, Raillietina sp,                  Raillietina tetragona, Raillietina                  echinobothrida, Raillietina                  cesticillus, Cotugnia digonopora,                  Choanotaenia infundibulum,                  Amoebotaenia sphenoides</p>	a1,a2,b1,b2,c1,c2	1	2
12	<p><b>Canine tapeworms</b></p> <p>Dipylidium caninum, Taenia                  multiceps, Echinococcus granulosus</p> <p>Diphyllobothrium latum</p>	a1,a2,b1,b2,c1,c2	1	2
13	<p><b>-Identification of nematode eggs</b></p> <p><b>- Larval stages of nematodes</b></p> <p><b>- Bovine nematodes</b></p> <p>Toxocara vitulorum, Strongyloides                  spp, Oesophagostomum radiatum</p> <p>Bunostomum trigonocephalum,                  Haemonchus contortus,                  Mecistocirrus digitatus</p> <p>Trichostrongylus axei, Cooperia                  curticei, Ostertagia circumcincta,                  Nematodirus spathiger, Dictyocaulus                  viviparous, Thelazia rhodesii, Setaria</p>	a1,a2,b1,b2,c1,c2	1	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhamisi

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

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 Center & Quality  
 Assurance

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	digitate, Stephanofilaria assamensis, Microfilaria			
14	<p><b>-Equine nematodes:</b>                      Parascaris equorum, Oxyuris equi, Strongylus vulgaris</p> <p><b>-Canine nematodes:</b></p> <p><b>-Ovine nematodes</b>                      Chabertia ovina, Bunostomum phlebotomum, Oesophagostomum columbianum, Dictyocaulus filaria, Muellerius capillaris</p> <p><b>-Poultry nematodes</b>                      Ascaridia galli, Heterakis gallinae, Subulura brumpti, Syngamus trachea</p> <p><b>-Human nematodes</b>                      Dracunculus medinensis</p> <p><b>- Identification of acanthocephala</b></p>	a1,a2,b1,b2,c1,c2	1	2
<b>Number of Weeks /and Units Per Semester</b>			<b>14</b>	<b>28</b>

<p><b>V. Teaching strategies of the course:</b></p> <ul style="list-style-type: none"> <li>▪ Lectures depending on the sharing efforts of the students and supported with macromedia and multimedia aids.</li> <li>▪ Training in the laboratory</li> <li>▪ Self-learning (Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library).</li> <li>▪ Summer training course.</li> <li>▪ Assays and reviews.</li> <li>▪ Discussion groups.</li> </ul>
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 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

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 Center & Quality  
 Assurance

Rector of Sana'a University

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<ul style="list-style-type: none"> <li>▪ Group work</li> <li>▪ Problem Solving</li> <li>▪ Assignments</li> <li>▪ Brainstorming</li> <li>▪ Log book</li> <li>▪ Field visit</li> </ul>
<b>3-Assessment Methods:</b>
<ul style="list-style-type: none"> <li>▪ Written examination: For assessment of knowledge, back calling and Intellectual skills.</li> <li>▪ Practical examination: For assessment of practical and professional skill.</li> <li>▪ Oral examination: For assessment of knowledge and Intellectual skills.</li> </ul> <p>Student activities: For assessment of knowledge and general and transferable skills.</p>

<b>VI. Schedule of Assessment Tasks for Students During the Semester:</b>					
No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes (CILOs symbols)
1	Participation, quizzes and assignments	2-14	10	10%	a1,a2,b1,b2,c1,c2
2	Mid-Term Exam	8	10	10%	a1,a2,b1,b2,c1,c2
3	Mid-Term Practical Exam	8	10	10%	a1,a2,b1,b2,c1,c2
4	Final Practical Exam	13	10	10%	a1,a2,b1,b2,c1,c2
5	Oral Exam	13	5	5%	a1,a2,b1,b2,c1,c2
6	Final Exam	16	55	55%	a1,a2,b1,b2,c1,c2
<b>Total</b>			<b>100</b>	<b>100%</b>	

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasak Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
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<b>VII. Students' Support:</b>	
<b>Office Hours/week</b>	<b>Other Procedures (if any)</b>
From Saturday to Wednesday at 8:00 a.m. till 2 p.m.	Student can contact with me via e-mail

<b>VIII. Learning Resource (MLA style or APA style)S:</b>	
<b>Required Textbook(s) ( maximum two )</b>	
	<ul style="list-style-type: none"> <li>• Wall, R. and Shearer, D. (1997 ): Veterinary entomology. Published by chapman &amp; hall, 2-6 boundary rows, London SE HN, UK.</li> <li>• Hendrix CH.M. (1998): diagnostic veterinary parasitology (1998) by mosby Inc.</li> </ul>
<b>Recommended Readings and Reference Materials</b>	
	1-Veterinary Helminthology by Angus M.Dunn 2-Parasitology of Veterinarians by Jay George 3- Heminthes, Arthropods and Porotzoa Domesticated Animals by J.L. Soulsby. 4- Diagnostic Veterinary Parasitology by Charles M. Hendrix 5-Notes Book for students Veterinary Parasitology.
<b>Essential References</b>	
	-Abyladze, k. E. et al. (1990) : parasitology and infections disease, agriculturals anima Mir publisher Moscow, ussR in Russian.  - Geffrey, H. C. et al. (1991) : Atlas of medical helminthology and protozoology . Church livingstone, New York .  - Georgi, J. R.; Georgi, N. E. (1990) : parasitology for veterinarians, . 5 Ed., Philadelph London .  - Kassai, T. (1999) : Vet. Helminthology butterwoth – Heinemann .  - Mehlhorn, H.; Duwel, D.; und raether, W. (1993) : Diagnose und Therapie der Paras von Haus-Nutz-und Heimtieren . gustav fischer verlag Stuttgart .

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhamisi

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
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	<p>- Maff Adas (1986) : Manual of veterinary parasitological laboratory techniques . 3. B reference 418 HMSO, London.</p> <p>- Soulsby, E. J. L. (1986) : Helminths, arthropods and protozoa of domesticated anim Ed. Bailliere tindall, London .</p>
<b>Electronic Materials and Web Sites etc.</b>	
	<p><u>Scientific Journals</u></p> <ul style="list-style-type: none"> <li>☞ The journal of parasitology</li> <li>☞ The journal of veterinary medical science.</li> <li>☞ The journal of Veterinary parasitol.</li> <li>☞ Korean journal of parasitology.</li> </ul> <p><u>Scientific websites</u></p> <ul style="list-style-type: none"> <li>☞ <a href="http://www.cdc.org">http://www.cdc.org</a></li> <li>☞ <a href="http://www.pubmed.org/">http://www.pubmed.org/</a></li> <li>☞ <a href="http://www.sciencedirect.com/">http://www.sciencedirect.com/</a></li> </ul>
<b>Other Learning Material:</b>	
	-

<b>X. Course Policies:</b>	
<b>1</b>	<p><b>Class Attendance:</b></p> <p>MANDATORY TO ATTEND ALL COURSE LECTURES</p>
<b>2</b>	<p><b>Tardy:</b></p> <p>Not allowed at all. Students must be in class 10 minutes prior to the beginning of lectures.</p>

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasak Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
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<b>3</b>	<b>Exam Attendance/Punctuality:</b>  Attendance is mandatory; absence is accepted with valid excuse.
<b>4</b>	<b>Assignments &amp; Projects:</b>  All assignments and projects are to be submitted on their due date. Any assignment turned in after the due date will not be accepted without valid and reasonable excuse.
<b>5</b>	<b>Cheating:</b>  Not tolerated and may lead to EXPELLING the student from the program
<b>6</b>	<b>Plagiarism:</b>  Not tolerated AT ALL and may lead to EXPELLING the student from the program
<b>7</b>	<b>Other policies:</b>  1.All devices must be on silent or at least on vibration during lectures/labs.  2.Before any exam (written, practical, oral) student's identity will be checked (student's card, ID, passport). Without any of these documents, the student will not be allowed in the exam room.  3.Any of type/ form of cheating is not allowed no matter what.  4.Maintain silence during lectures and disturbance is not allowed.

**Course Plan of Veterinary parasitology (1)**

<b>X. - Information about Faculty Member Responsible for the Course:</b>							
<b>Name of Faculty Member</b>	Hamid A. N. Alrefaiey	<b>Office Hours</b>					
<b>Location &amp; Telephone No.</b>	Sana'a mobile 775336921	SAT	SUN	MON	TUE	WED	THU

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

Rector of Sana'a University

Prof. Dr. Al-Qassim Mohammed Abbas



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E-mail	<a href="mailto:Hamid77Ali@gmail.com">Hamid77Ali@gmail.com</a>	8am	8am	8am	8am	8am	-
	nagihamidali@gmail.com	2pm	2pm	2pm	2pm	2pm	

KI. Course Identification and General Information:						
1	Course Title:	Veterinary parasitology (1)				
2	Course Number & Code:	MI 354				
3	Credit hours:	C.H				
		Th.	Seminar	Pr.	F. Tr.	Total
		3	-	1		4
4	Study level/year at which this course is offered:	Third year: first semester				
5	Pre –requisite (if any):	PH242, PH243				
6	Co –requisite (if any):	None				
7	Program (s) in which the course is offered	Bachelor's degree (B. Sc.) Veterinary Medicine				
8	Language of teaching the course:	English				
9	System of Study:	Regular / Semester				
10	Mode of delivery:	Lectures and Practical				
11	Location of teaching the course:	Faculty of veterinary medicine				

II. Course Description:
This course consists of theoretical and practical section is intended to familiarize the students with the essential facts and concepts of veterinary parasitology enabling them to control and prevent economical losses, parasitozoonoses. The lectures will discuss principal

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhamisi

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
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endo- and ectoparasites of domestic animals, which are of national or international importance to veterinary medical practice. Emphasis is placed on basic knowledge of parasite biology, epidemiology, pathogenesis, diagnosis, chemotherapy and control of parasitic infections. The purpose of the practical courses is to highlight and expand on important parasites presented in lectures, especially identification and diagnostics. At the practicals which follow the lectures the students become familiar with the methods of diagnosis including the interpretation of results. They observe stages of parasites in blood, faecal samples and preparation of a range of specimens.

**I. Intended learning outcomes (ILOs) of the course:**

After completing this course, students will be able to:

- a1- Define the basic terms in the fields of General and Special Parasitology.
- a2- Identify different phyla, class, order, families, species of parasites.
- b1- Evaluate the proper approach for Parasites and their life history
- b2- Investigate reasons and sources of infection.
- c1- Practice of preparation of samples of parasites.
- c2- Evaluate of examination of samples for parasitic infection by different methods
- d1- Communicate effectively with animal's owners using appropriate communication skills.
- d2- Search the web for a given course topic to build up a review.

**II. Course Content:**

**A – Theoretical Aspect:**

Order	Topics List	Week Due	Contact Hours
1	Introduction of parasitology	1	2

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 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhamisi

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

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	Phylum:Platyhelmenthes; class; Trematoda		
2	Family: Fasciolidae Family: Dicrocoeliidae, Family:Heterophyiidae	2	2
3	Family: Echinostomatidae Family: Schistosomatidae	3	2
4	Class: Cestoidea; Subclass: Colyloda; Family: Diphyllbothridae Family: Bothriocephalidae Subclass Eucestoda; Family: Taeniidae, Family: Dilepididae, Family: Hymenolepididae	4	2
5	Family: Anoplocephalidae, Family: Thysanosomidae, Family: Davainiidae, Family: Proteocephalidae	5	2
6	Family: Caryophyllidae Phylum:Nemathelminthes Subclass: Phasimida: order : Ascarididi Superfamily: Ascarididea; Family: Ascaridae	6	2
7	Family: Anisakidae Family: Ascarididae Superfamily: Heterakoidea Family: Heterakoidae Superfamily: Oxyuroidea Family: Oxyuridae	7	2
8	Mid exam	8	2
9	Superfamily: Rhabditoidea	9	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrahman Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
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	Family: Rhabditidae Family: Strongyloididae Order: Strongylida Superfamily: Ancylostomatidea Family: Ancylostomatidae Superfamily: Trichostrongylidae Family: Trichostrongylidae		
10	Family :Dictycaulidae Superfamily: Strongyloidea Family: Strongylidae Family: Trichonematidae, Family: Chabertidae	10	2
11	Family: Syngamidae, Family:Amidostomatidae Superfamily: Metastrongylidea Family: Metastrongylidae	11	2
12	Order:Spirurida Superfamily: spirurtoidea Family: Spiruridae, Family: Camallanidae Family: Cucllanidae, Family: Acuaridae Family: Tetrameridae	12	2
13	Superfamily: Filaroidea Superfamily: Dracanculoidea Subclass: Aphasmda	13	2
14	Fish parasites: Phylum: Annelida Class: Hirudinea (leeches) , Family: Psicolidae Phylum: Acanthocephala, Family: Acanthostomidae	14	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasak Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

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	Family: Allocreadida		
15	Family: Paramphistomatidae Order: Monogenea: Family: Dactylogyridae Family: Gyrodactylidae Encysted metacercariae infecte fish	15	2
16	Final exam	16	2
<b>Number of Weeks /and Units Per Semester</b>		<b>16</b>	<b>32</b>

<b>b- Training Aspect:</b>			
Order	Training Tasks	Week Due	Contact hours
1	Laboratory procedures in helminthology - Examination of faeces, Macroscopic examination, Direct examination of faecal sample, Concentration methods, Sedimentation technique  Floatation technique, Laboratory reagents and solutions	1	2
2	- Collection and processing and identification of helminth parasite (Trematodes, Cestodes and Nematodes) - examination of faecal sample, Collection of helminths: - Fixation; Common fixatives , Preservation: Kaiserling's preservative -Staining, processing, permanent mounting and identification of trematode and cestode parasites -Flattening / Stretching -Staining solutions for trematodes and cestodes -stain Procedure for immediate examination of cestodes -Meggit's rapid staining technique for cestodes.	2	2

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasch Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

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	-Processing and identification of nematode parasites -Stepwise procedure for clearing of nematodes		
3	-Common flotation solutions -Preservatives -Fixatives for trematodes and cestodes -Commonly used stains for trematodes and cestodes	3	2
4	Classification, -dentification of trematode parasite eggs	4	2
5	-Fasciola spp. (Composite egg)	5	2
6	-Larval stages of trematode parasite - Eggs of trematode parasites	6	2
7	<b>-Adult stages of trematodes</b> - Schistosomes	7	2
8	Mid exam	8	2
9	<b>Identification of cestode parasites:</b> Identification of cestode parasites Eggs of cestode parasites	9	2
10	<b>-Larval stages of cestodes</b> <b>-Adult stages of cestodes</b> <b>Ruminant cestode:</b> Monezia expansa, Moniezia benedeni, Avitellina lahorea, Thysaniezia giardi Stilesia globipunctata	10	2
11	<b>Equine tapeworms:</b>	11	2

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 Dr. Abdu Alraoof Al-

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 Affairs  
 Dr. Abdulrasheed Alkhami

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	Anoplocephala perfoliata, Anoplocephala magna, Paranoplocephala mamillana  <b>Human tapeworms:</b>  Taenia spp		
12	<b>Poultry cestodes</b>  Davainea proglottina, Raillietina sp, Raillietina tetragona, Raillietina echinobothrida, Raillietina cesticillus, Cotugnia digonopora, Choanotaenia infundibulum, Amoebotaenia sphenoides	12	2
13	<b>Canine tapeworms</b>  Dipylidium caninum, Taenia multiceps, Echinococcus granulosus  Diphyllobothrium latum	13	2
14	<b>-Identification of nematode eggs</b>  <b>- Larval stages of nematodes</b>  <b>- Bovine nematodes</b>  Toxocara vitulorum, Strongyloides spp, Oesophagostomum radiatum  Bunostomum trigonocephalum, Haemonchus contortus, Mecistocirrus digitatus  Trichostrongylus axei, Cooperia curticei, Ostertagia circumcincta, Nematodirus spathiger, Dictyocaulus viviparus, Thelazia rhodesii, Setaria digitate, Stephanofilaria assamensis, Microfilaria	14	2
15	<b>-Equine nematodes:</b>  Parascaris equorum, Oxyuris equi, Strongylus vulgaris  <b>-Canine nematodes:</b>  <b>-Ovine nematodes</b>	15	2

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 Affairs  
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 Shaukany

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	Chabertia ovina, Bunostomum phlebotomum, Oesophagostomum columbianum, Dictyocaulus filaria, Muellerius capillaris  -Poultry nematodes  Ascaridia galli, Heterakis gallinae, Subulura brumpti, Syngamus trachea  -Human nematodes  Dracunculus medinensis  - Identification of acanthocephala		
16	Final exam	16	2
<b>Number of Weeks /and Units Per Semester</b>		<b>16</b>	<b>32</b>

**III. Teaching strategies of the course:**

- Lectures depending on the sharing efforts of the students and supported with macromedia and multimedia aids.
- Training in the laboratory
- Self-learning (Electronic learning, Seminars, scientific search on related websites, international, national and local journals, related books in faculty library).
- Summer training course.
- Assays and reviews.
- Discussion groups.
- Group work
- Problem Solving
- Assignments
- Brainstorming
- Log book
- Field visits.

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasheed Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

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**IV. Assessment Methods:**

- Written exam
- Practical exam
- Oral exam
- Quizzes
- Report assignments
- Discussion.

No.	Type of Assessment Tasks	Week Due	Mark	Proportion of Final Assessment
1	Participation, quizzes and assignments	2-14	10	10%
2	Mid-Term Exam	8	10	10%
3	Mid-Term Practical Exam	8	10	10%
4	Final Practical Exam	13	10	10%
5	Oral Exam	13	5	5%
6	Final Exam	16	55	55%
<b>Total</b>			<b>100</b>	<b>100%</b>

**V. Learning Resources:**

1.

**1- Required Textbook(s) ( maximum two ).**

- Wall, R. and Shearer, D. (1997 ): Veterinary entomology. Published by Chapman & Hall, 2-6 Boundary Row, London SE 8 4BN, UK.
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Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrahman Alkhami

Dean of the Faculty  
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 Shaukany

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 Assurance

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2- Essential References.	
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3- Electronic Materials and Web Sites etc.	
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<b>XI. Course Policies:</b>

Prepared by  
 Dr. Abdu Alraoof Al-

Vice Dean For Quality  
 Affairs  
 Dr. Abdulrasch Alkhami

Dean of the Faculty  
 Ass. Prof. Dr. Abdu Alraoof Al-  
 Shaukany

Dean of Development  
 Center & Quality  
 Assurance

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 Shaukany

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