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**Department of Biology**

**College of Science**

**Salahaddin University /Erbil**

**Subject: Parasitology(Theoritical)**

**Course Book – Year 2**

**Lecturer's name: Assist.Proff. Dr.Sherwan T. Ahmed**

**Academic Year: 2022/2023**

**Course Book**

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| **1. Course name** | **Parasitology** |
| **2. Lecturer in charge** | **Assist.Proff.Dr.Sherwan T. Ahmed**  |
| **3. Department/ College** | **Biology/Science** |
| **4. Contact** | **e-mail: sherwan.ahmed@su.edu.krd****Tel: (optional)** |
| **5. Time (in hours) per week**  | **Theory: 2** **Practical: 2**  |
| **6. Office hours** | **6hrs** |
| **7. Course code** | **SBIO201** |
| **8. Teacher's academic profile**  | **\*Dr.Sherwan T. Ahmed ….****- 1978-1979 Bachelor in Biological Science from university of Sulaimanya/Iraq****-1993-1994 MSc.degree in Medical Microbiology from university of Salahaddin/Iraq****-2009-2010 PhD. In Invertebrate Zoology from university of Salahaddin/Iraq****-2002 submitting of Duhok University Confrence/College of Medicine****-2011 submitting of Kerkuk University Confrence/College of Science – Department of Biology****-2011 submitting of 1st international Confrence in Applied Science/Malaysia****-2015 Quality Assurance committee/College of Science-Department of Biology****- During 1995-2017 Teaching ( Medical Microbiology,General Microbiology, Human Biology,Parasitology,Invertebrate Zoology) in College of Pharmacy & College of Science-Department of Biology/University of Salahaddin/Kurdistan Region-Iraq****-2011-2015 Supervising of Postgraduate students(Diploma & Master degree)****-2017-2018 Supervising of Postgraduate student( PhD. Student)****\*\*Rezan K.Ahmed** **-1986-1987 Bachelor in Biological Science from university of Salahaddin ,Erbil/Iraq****-1993 - MSc.degree in Microbiology from university of Salahaddin,**  **Erbil/Iraq****-2009- PhD degree in Invertebrate Zoology from university of Salahaddin,**  **Erbil/Iraq****- During 1995-2021 Teaching ( Medical Microbiology, Immunology, Bacterial physiology,Human Biology,Parasitology,Invertebrate Zoology) in College of Science-Department of Biology & College of Pharmacy/University of Salahaddin, Erbil-Iraq.**  |
| **9. Keywords** | **Parasitology,protozoa,helminthes,ectoparasites,epidemiology,pathogenicity.****lifecycle,treatment,prevention .** |
| **10. Course overview:** The lectures for this course will provide you with an introduction to the generalbiology of the parasitic protozoans, helminths, and arthropods of humans and domesticanimals. Lectures will emphasize the morphology, form and function, life cycles,symptomatology, and pathogenesis of representative taxa from these major parasiticgroups. This information will be useful to you when you study animal and protozoanparasites in the laboratory. Moreover, with this foundational understanding ofparasitology in place, you will be in a better position to appreciate the impact thatparasites have had on human civilizations throughout history (see section titled"Additional Readings" below), the applications of parasites to pure and applied researchprograms (see section titled "Journal Articles" below), and the recent contributions ofparasitism to our general understanding of the ecology and evolution (see section titled"The Ecology and Evolution of Parasites" below) of organisms. It has been estimatedthat over 60% of the species on this planet employ parasitic lifestyles. Thus, it is time, asPeter Price so resoundingly stated in his celebrated book *Evolutionary Biology of**Parasites* "to extend the concepts in ecology and evolution, developed largely from anappreciation of larger organisms (i.e. the less representative and the more unusual), toinclude realistic concepts relevant to the very small and the very specialized." |
| **11. Course objective:**The lectures for this course will provide you with an introduction to the generalbiology of the parasitic protozoans, helminths, and arthropods of humans and domesticanimals. Lectures will emphasize the morphology, form and function, life cycles,symptomatology, and pathogenesis of representative taxa from these major parasiticgroups. This information will be useful to you when you study animal and protozoanparasites in the laboratory. Moreover, with this foundational understanding ofparasitology in place, you will be in a better position to appreciate the impact thatparasites have had on human civilizations throughout history (see section titled"Additional Readings" below), the applications of parasites to pure and applied researchprograms (see section titled "Journal Articles" below), and the recent contributions ofparasitism to our general understanding of the ecology and evolution (see section titled"The Ecology and Evolution of Parasites" below) of organisms. It has been estimatedthat over 60% of the species on this planet employ parasitic lifestyles. Thus, it is time, asPeter Price so resoundingly stated in his celebrated book Evolutionary Biology ofParasites "to extend the concepts in ecology and evolution, developed largely from anappreciation of larger organisms (i.e. the less representative and the more unusual), toinclude realistic concepts relevant to the very small and the very specialized." |
| **12. Student's obligation**In the performance of all work in this course each student is expected to adhere tothe standards of ethical behavior as stated in the University Undergraduate Catalog. The following are expected:1. students neither give nor receive assistance on exams2. each report is the students own work3. students avoid plagiarism in their written work4. students deal forthrightly and honestly when consulting with facultyIf there is any reason to suspect that you have violated the University honor code,you will automatically receive a zero for the work in question. Your violation will bereported to the Office of the Dean of Students and will probably result in an HonorCouncil hearing. Any student found guilty and sanctioned by the Honor Council isentitled to an appeal. |
| **13. Forms of teaching** A- LectureB.        DemonstrationC.        Laboratory PracticeD.        Audio-Visual programs |
| 14. Assessment scheme‌1st exam ………………..7.5marks2nd exam ……………….7.5 marksPractical exam ………30 marksQuizzes …………………5marksFinal exam(Theoritical)…………..50 marksFinal examTotal………………………100 marks |
| **15. Student learning outcome:** Students should be able to: 1. Give the names of the taxonomic group (common and scientific) and that of the genera and species covered in the course. Taxonomic group can refer to Phylum, Subphylum, Class, Order, Family, Genus and Species. Correct spelling will be used. 2. Recognize significant morphological characteristics for identification of parasites to taxonomic group and the life history stage. 3. Present the life history of the parasitic group as well as that of genera or species including: a. The infective agent for each host and their means of invasion. b. Each host in the life cycle and type of development, multiplication, etc., which occurs in each host. c. Movement routes and sites of development within hosts. d. Free living stages. 4. Understand the treatment, prevention, and control of the parasitic genera and species presented. 5. Understand the evolution of parasitic groups as well as other aspects of the parasites discussed.  |
| 16. Course Reading List and References‌:A.     Leventhal & Cheadle, Medical Parasitology, A Self-Instructional Text, 5th Edition.B.    Reference: Howard, B.J. et al, Clinical and Pathogenic Microbiology, 2nd edition. Mosby, Inc.C.    Reference: Monroe & Spencer, /Color Atlas of Intestinal Parasites. C.V. Thomas Company. |
| 17. **The Topics:** |  |
| Week Lecture Topic Readings1st week : Introduction: definitions; principles and concepts, Intestinal protozoa  Amoebiasis, other amoebic protozoa 2nd : Intestinal Flagellates,Giardiasis, Urogenital Flagellates, Trichomoniasis3rd : , Balantidiasis, Blood and tissue protozoa, Apicomplexa: Malaria4th : Apicomplexa: Toxoplasmosis, Blood and tissue protozoa: Kinetoplasta:  Leishmania. 1st Exam 6 th : Blood and tissue protozoa: Kinetoplasta: Trypanosoms7th: Introduction to phylum Platyhelminthes; Class Trematoda:  subclass Digenea form and function8th :Digenean diversity: orders, Strigeiformes, Echinostomatiformes, Plagiorchiformes, and Opisthorchiformes; 9th : Class Monogenoidea: Class Cestoidea: form and function10th: Tapeworm diversity .11th : phylum Nematomorpha, phylum Acanthocephala12th : Phylum Nematoda: form and function; orders Trichurida, Rhabditida, Strongylida,  13th : Phylum Nematoda: Ascaridida, Oxyurida, Spirurida, 14th : Filaroidea, and Camallanina;  2nd Exam (10:15 a.m.)\*This lecture schedule may be modified depending on the pace of the course  |  |
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| **19. Examinations:***1. Compositional:* Enumerate : 1- six pathogenic symptoms of Trichomoniasis : *2. Multiple choices:* Choose the correct answer : 1. The most commonly involved area in Amoebiasis :

 a- brain b- liver c- cecum d- all of the above e- not all of the above  1. The infective stage *in Trichomonas vaginalis* :

 a- cysts b- trophozoites c- cysts & trophozoites d- all of the above e- not all of the above 3- Their habitat is the large intestine. :  a-*Balantidium coli* b- *Entamoeba histolytica* c- *Entamoeba coli* d- all of the above e- not all of the above |
| **20. Extra notes:** |
| **21. Peer review** ‌‌  |