

**The University of Jordan**

**Accreditation & Quality Assurance Center**

**COURSE Syllabus**

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| **1** | Course title | Medical Parasitology |
| **2** | Course number | 0304368 |
| **3** | Credit hours (theory, practical) | 2, 3 |
| Contact hours (theory, practical) | Tuesday & Thursday (13 - 14) , Sunday (12 - 15) & (15- 18) |
| **4** | Prerequisites/co-requisites | 0303102 |
| **5** | Program title | Bachelor of Medical Laboratory Sciences |
| **6** | Program code |  |
| **7** | Awarding institution | University of Jordan |
| **8** | Faculty | Science |
| **9** | Department | Biology |
| **10** | Level of course | Third Year |
| **11** | Year of study and semester (s) | Second Semester 2015/2016 |
| **12** | Final Qualification | B.Sc. in Medical Laboratory Sciences |
| **13** | Other department (s) involved in teaching the course | none |
| **14** | Language of Instruction | English |
| **15** | Date of production/revision | 2016 |

16. Course Coordinator:

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| Ibrahim Mosleh, PhD  Office:  214 Biology building  Phone number: 22228  Email: i.mosleh@ju.edu.jo  Office hours: Sunday, Wednesday, Thursday (11-12) and by appointment |

17. Other instructors:

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| None |

**18. Course Description:**

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| An important part of this course is the identification of parasites and their association with the diseases they cause. Knowledge of the mechanisms by which those diseases occur provides a basis for laboratory diagnosis. The goal of the lecture portion of this course is to familiarize the student with the characteristics of each of the clinically significant human parasites, including morphology, diseases caused, life cycle, route of infection, appropriate clinical specimens, pathogenesis, host immune response to infection, and prevention and treatment. This information serves as the basis for the laboratory identification of parasites. |

**19. Course aims and outcomes:**

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| **A- Aims:**  This course will enable students to explore and gain further understanding of medical parasitology through the investigation of different parasites that infect human.  Provide students with a broad base of knowledge regarding medical parasitology.  **B- Intended Learning Outcomes (ILOs):** Upon successful completion of this course students will be able to …  1. get a broad knowledge of the important parasites of human and their life cycles.  2. recognize the various parasitic pathogens in relation to body system infections and in terms of their pathogenesis, transmission and diagnosis.  3. be familiar with important techniques of examining these parasites from clinical specimens.  4. have the skills of specimen collection, storage, transport, acceptability and processing procedures.  5. describe immunologic and serologic identification techniques, the prevention and control of significant parasites.  6. discuss and be familiar with new technology in current diagnosis of body system- parasitic diseases.  7. choose the appropriate methods for the examination of parasitology specimens for definitive identification of parasitic pathogens.  8. Report and interpret the results of the testing to the clinician. |

20. Topic Outline and Schedule:

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| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 1 Topics to be Covered  **\*Theory** | | | | | | | | Topic | | | | | No of Weeks | Contact hours | | Introduction to Parasitology - parasites and  parasitism | | | | | 1 | 1 | | Parasitic infections and diseases  The Protozoa: classification and structure of protozoa of medical importance | | | | | 1 | 1 | | Amoebae: Pathogenic (dysentery) amoeba  *Entamoeba histolytica*  Non-pathogenic amoebae: *Entamoeba coli*  *Endolimax nana, lodameba buetschlii*  Pathogenic free-living amoeba: *Naegleria fowleri, Acanthamoeba* sp*.* | | | | | 2 | 4 | | Intestinal and urogenital flagellates: *Giardia* sp.  *Trichomonas* sp.  Intestinal ciliates: *Balantidium coli* | | | | | 1 | 2 | | Blood and tissues flagellates: *Leishmania* sp., *Trypanososma* sp. | | | | | 2 | 3 | | Malaria Parasites: *Plasmodium* sp  Coccidia: *Toxoplasma* sp | | | | | 1 | 2 | | Coccidia contd ... : *Isospora, Sarcocystis*  *Cryptosporidium* | | | | | 1 | 2 | | Introduction to Cestodes: Pseudophyllidean  tapeworm  *Diphyllobothrium latum*  Cyclophyllidean tapeworm: *Taenia saginata, Taenia solium.* | | | | | 1 | 2 | | *Taenia multiceps, Hymenolepis nana, Diphyllidium*  *caninum, Echinococcus granulosus.*  Larval cestodes : cysticercus, hydatid cyst,  coenurus, plerocercoid | | | | | 1 | 2 | | Midterm Exam | | | | | 1 | 1 | | Introduction to Nematodes (Nematoda)  Intestinal worms: *Ascaris* sp.,*Trichuris* sp  *Enterobius* sp | | | | | 2 | 3 | | Hookworm, *Strogyloides* sp  Tissuue worms: Filariae – *Wuchereria* sp,  *Brugia, Loa loa*  *Onchocereca, Dracunculus* sp., -Larva  migrans | | | | | 2 | 3 | | Introduction to trematodes intestinal flukes: *Fasciolopsis buski*, *Heterophyes* | | | | | 1 | 2 | | Hepatic flukes contd .. *Opisthorchis*, *Dicrocoelium*  *dendriticum*  Pulmonary flukes: *Paragonimus* sp. | | | | | 1 | 2 | | Indirect evidence of parasitic infection  Arachnida | | | | | 1 | 2 | | Insecta | | | | | 1 | 2 | | **Final Exam** | | | | | 1 | 2 | | **Practical** | | | | | 1 | 2 | | Introduction: Safety in the laboratory, Care of  Instruments Demonstration on the use of  microscope, the different types of specimens  examined, collection methods and materials | | | | | 1 | 2 | | Demonstration of microtitre plates  Demonstration of parasites. Draw and label  Protozoa: Amoebae - *Entamoebae histolytica*  *Entamoeba coli, Iodamoeba butschlii, Endolimax*  *nana*  Pictures of pathogenic free-living amoebae:  *Naegleria* sp.  *Acanthamoebae* sp. | | | | | 1 | 2 | | 3. Repeat of previous week parasites demonstrated  Protozoa; Intestinal flagellates- *Giardia Intestinalis, Trichomonas hominis*  Ciliates - *Balantidium coli* | | | | | 1 | 2 | | 4. Repeat: Intestinal flagellates, Ciliates  Haemoflagellates: *Leishmania* sp., Trypanosomes  Demonstration: stool examination | | | | | 1 | 2 | | 5. Haemoflagellates continued  Coccidia: Malaria parasites (*Plasmodium* sp), *Toxoxplasma* sp, --*Isospora* sp, *Cryptosporidium*  sp  Stains: Giemsa, Leishman, Methylene blue | | | | | 1 | 2 | | Coccidia cont.  Examination of stool specimens | | | | | 1 | 2 | | **Midterm exam** | | | | |  |  | | Demonstration: collection of blood specimens.  Staining methods using Giemsa and Leishman stains  Concentration of stool specimens. | | | | | 1 | 2 | | Helminths: Nematodes: *Ascaris lumbricoides*  *Trichuris trichuria, Enterobius vermicularis* | | | | | 1 | 2 | | Hookworms, *Strongyloides stercoralis,*  *Dracunculus medinensis,* Filariae.  Examination of stool specimens by students | | | | | 1 | 2 | | Helminths :Cestodes -Pseudophyllidean worm-  *Diphyllobotrium latum*, Cyclophyllidean worm - *Taenia saginata, Taenia solium, Echinococcus granulosus, Hymenolepis nana*  Examination of stool specimens by students | | | | | 1 | 2 | | Cestodes continued,repeat of previous week  Helminths: Trematodes - *Fasciolopsis buski.*  *Fasciola hepatica, Paragonimus* sp | | | | | 1 | 2 | | Entomology: Demonstration of some insects of  medical importance: *Musca domestica*,  *Phlebotomus* sp, Mosquitoes | | | | | 1 | 2 | | **Final Exam** | | | | | 1 | 2 | | Lecture:  30 hr. + 1st + 2nd exams | Tutorial: | Laboratory  26 | Practical/Field work/Internship | Other: | | | |

21. Teaching Methods and Assignments:

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| Development of ILOs is promoted through the following teaching and learning methods:  Interactive lecture using data show and overhead projector  Office hour discussions  Quizzes  Lab reports |

22. Evaluation Methods and Course Requirements:

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| Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:  Short answer questions during the lectures  Quizzes  Exams |

23. Course Policies:

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| A- Attendance policies: Regular class attendance is expected, attendance by seating number.  B- Absences from exams and handing in assignments on time: Reporting a valid reason of absence is accepted.  C- Health and safety procedures: All students should comply with the university health and safety procedures  D- Honesty policy regarding cheating, plagiarism, misbehavior: All students should comply with the university Honesty policy regarding cheating, plagiarism, misbehavior  E- Grading policy: Depends on average  **First Hour Exam 16**  **Second Hour Exam 16**  **Midterm Lab Exam + Quizzes 18**  **Final Theory and Lab Exams 50**  **--------------------------------------------------**  **Total 100**  F- |

24. Required equipment:

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| Available university services that support achievement in the course:  Data Show Projector, internet access  Microscopes  Prepared slides of different stages of the parasites  Preserved specimens of different parasites  Posters of representing the life cycles of different parasites |

**25. References:**

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| 1. Franklin A. Neva and Harold W. Brown 2003.Basic Clinical Parasitology, 7th ed., Prentice Hall Int. 2. Animal Agents and Vectors of Human Diseases, 1985. Paul C. Beaver and Rodney C. Jung, 5th ed., Lea & Febiger 3. Google image demonstration parasitic stages and life cycles |

26. Additional information:

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Name of Course Coordinator: Dr. Ibrahim Mosleh Signature: ------------------------- Date: 02/02/2016

Head of curriculum committee/Department: ------------------------- Signature: ---------------------------------

Head of Department: ……. Signature: ---------------------------------

Head of curriculum committee/Faculty: ------------------------- Signature: ---------------------------------

Dean: ------------------------------------------- -Signature: ---------------------------------

Copy to:

Head of Department

Assistant Dean for Quality Assurance

Course File