



Department of Biology

College of Science

University of Salahaddin

Subject: Medical Virology

Course Book – 3rd Medical Biology

Lecturer's name (Theory): Dr. Kareem Khoshnow Hamad

Lecturer's name (Practical): Shukur Wasman Smail

Academic Year: 2022/2023

Course Book

1.Course name	Medical Virology
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2. Lecturer in charge	Kareem Khoshnow Hamad
3. Department/ College	Biology department/ college of science
4. Contact	e-mail: kk_hamad@yahoo.com kareem.hamad@su.edu.krd .
5. Time (in hours) per week	Theory: 11 (divided by 2 semesters) Practical: 17 (divided by 2 semesters)
6. Office hours	8 hours per week
7. Course code	-
8. Teacher's academic profile	<p>I awarded M.Sc. in fish parasitology in 1993 and pursuit in biology department, college of science, Salahaddin university in 1995 as assistance lecturer. Then, I started to work in the same department, as an assistant lecturer. Then I finished the Ph.D. in university of Agriculture-Faisalabad, Pakistan and then upgrading to lecturer in 2014.</p> <p>The teaching experience is theoretical Medical Virology</p> <p>Kareem Khoshnow Hamad* Department of Parasitology, University of Agriculture-38040 Faisalabad, Pakistan *Corresponding author's e-mail: kk_hamad@yahoo.com</p> <p><i>Review article</i> 4- “Control of antinematicidal-resistant gastrointestinal nematodes in tamed small ruminants: achievements, trends and prospectives” ZANCO Journal of Pure and Applied Sciences ZJPAS (2017), 29 (3); 62-77 Year of publication: 2017</p> <p>Kareem Khoshnow Hamad^{1*}, Fikry Ali Kadir¹ and Hero Omar Hamad³ ¹Department of Biology, College of Science, Salahaddin University-Erbil ²Department of Medical Laboratory Technique, Medical Technical Institute, Kurdistan Region -Iraq</p> <p><i>Review article</i> 5- “Phytotherapeutics: As anticipating substitutes to</p>

	<p>synthetic drugs in combating antinematicidal-resistant gastrointestinal nematodes of small ruminants”</p> <p>ZANCO Journal of Pure and Applied Sciences ZJPAS (2018), 30 (4); 102-114 Year of publication: 2018</p> <p>Kareem Khoshnaw Hamad, Sherwan Tayib Ahmed, Rezan Kamal Ahmed, Qaraman Mamakhidr Koyee Department of Biology, College of science, Salahaddin University, Kurdistan Region of Iraq</p> <p><u>6-</u> “Assessment of <i>Azadirachta indica</i> seed kernel extracts to restrict the rampancy of antinematicidal-resistant <i>Haemonchus contortus</i> in ovine”</p> <p>ZANCO Journal of Pure and Applied Sciences ZJPAS (2018), 30 (5); 29-43 Year of publication: 2018</p> <p>Kareem Khoshnaw Hamad Department of Biology, College of science, Salahaddin University, Kurdistan Region of Iraq</p>
9. Keywords	Viral diseases, immunological disorders, Epidemic ailments, Bacterial diseases, Fish habitats
<p>10. Course overview:</p> <p>These basic sciences are scientific branches that deal with human disorders. Credit hours will be designated for theory lectures and three credit hours for laboratory. The course will contain an introductory part, in which basic concepts of basic sciences are introduced and major terms are defined; then, specialized topics will be tackled in a systematic approach to cover the major diseases of human being in addition to zoonotic diseases.</p> <p>Epidemiology and virology are dynamic fields that have always been on the frontier of clinical investigation within the scope of human disease, therefore student can get secure employment through having more scientific knowledge about all blood disorder. The best way for investing</p>	

their quality in making private laboratory.

11. Course objective:

The course is especially planned for undergraduate students who intend to work in diagnostic laboratories. Upon the completion of the course, students would have benefited from the following objectives of the course:

- A- Teaching students the risks of viral diseases and their diagnosis, protection.
- B- Students will understand the spread of different ailments.
- C- The functions of immune system and its components.

12. Student's obligation

- Students should attend all lectures and not miss any lecture time.
- Additionally, for each lecture, the student should prepare and follow up with sufficient studying time to cover the material presented in the class during that lecture.
- It is highly advised not to accumulate material until before the examination time. Cramming will definitely weaken the student's ability to understand and retain valuable information.
- Students prefer to attend all the seminars on time which held in our department especially seminar about basic sciences.

13. Forms of teaching

Teaching with technology can deepen student learning by supporting instructional objectives.

- Data Show Projector
- Blackboard
- Video

14. Assessment scheme

Breakdown of overall assessment and examination

Grading System:

Exam No. 1 (Theory): 12.5%

Exam No.2 (Theory) : 12.5%

Mean Examination (Theory) : 12.5 %

Practical Examination : 7.5%

Total =20 %

Final examination: 10 practical + 20 theory = 30%

20+30 = **50%**

15. Student learning outcome:

1. Interpret basic sciences for diagnosis purposes.
- 2- Understand and be able to communicate the normal physiology and pathophysiological conditions associated with dysfunction of various organ diseases.
3. Understand the aetiology, pathophysiology and laboratory diagnosis or a wide range of conditions including viral, bacterial and immunological disorders.
4. Communicate scientific concepts clearly, concisely and logically.
5. Practise basic sciences within the laboratory environment safely and with due regard to occupational health and safety guidelines.

16- Course contents: they are incorporated in attached files of lectures

20. References:

1- Principles of Immunology. Basant Kumar Sinha, 1st edition, 2007.

2-Virella, G., 1997. Microbiology and Infectious Diseases. 3rd Ed., Mass Publishing Company.

3-Brooks, G.F., J.S. Butel and S.A. Morse, 2001. Medical Microbiology. 26th Ed., Lange Medical Books/McGraw-Hill.

4-Radostits, O.M., C.C. Gay, D.C. Blood and K.W. Hinchcliff, 2003. Veterinary Medicine, a text book of the diseases of cattle, sheep, pigs, goats, and horses. 9th Ed., WB Saunders.

5- A textbook of Virology and Viral Diseases, by Dilip K. Sharma, 2009.

6- The Merck Manual, 9th edition, 1998

21. Peer review یو د پینداچوونه

Practical Comparative Anatomy: Second Course (Spring semester), 2022-2023

Room: BioLab (9): Wednesday, 8:30-4:00PM

Instructors: Shukur W. Smail

Office Hours: *12-1pm T & Th, or during labs, or by appointment

Phone: 009647504491092

Emails: shukur.smail@su.edu.krd

*To schedule appointments outside office hours or outside of lab, please email us with your availability.

Course Objectives and Goals:

At the end of the course, the student should be able to understand and describe the following, in the context of the medically important viruses listed in the syllabus below:

1. The morphology and genomic organization of the virus

2. The epidemiology of the viral infection
3. The clinical presentation of the viral illness
4. The immune-pathogenesis of the infection
5. The laboratory diagnosis of the virus, including conventional and molecular approaches
6. Prophylaxis and treatment of infection

Grading:

Points

Lab:

1 Exam:	(15 pts)
12 Quizzes (0.5 pts each)	6
Participation and activity	6
Seminar	12
Total possible points	35

Attendance/Participation: Required for all lectures and laboratories. Students must be punctual to class. Attendance and participation are components in your evaluation. Only rarely are course exams allowed to be made up, and then only with a written medical excuse from your physician. We cannot make up labs in summer session. You are welcome to perform the lab on your own. You will be docked 5 points for each lab and each dissection that is missed.

It is imperative that you come prepared to lecture and laboratory. The laboratory reading assignments should be read **BEFORE** coming to lab. We will be lenient on the first lab if needed. All of these materials will be on Canvas. If you have to miss lab for any reason that is not a medical emergency, we expect that you will make time to conduct your own dissection at home.

Recommended Reading:

Books (latest edition):

- Reviews of Medical Microbiology by Jawetz
- Lennette's Laboratory Diagnosis of Viral Infections
- Clinical Virology Manual (ASM)
- Medical Virology by White and Fenner
- Mandell, Douglas and Bennett's Principles and Practice of Infectious Diseases
- Field's Virology
- Virology by Topley and Wilson

Syllabus for Medical Virology Lab

(The syllabus is a guide and may change according to unexpected events. Please be flexible)

Week	Date	Lab (8:30 AM – 04:00 PM)
	Lab 1	Introduction to virus
	Lab 2	Diagnosis of virus
	Lab 3	Clinical virology
	Lab 4	Viral immunology

3	Lab 4	Virus Bioinformatics
	Lab 5	Bioinformatics databases and tools in virology research
	Lab 6	Multiple Sequence Alignment for SARS-CoV-2
	Lab 7	First exam
	Lab 8	Visualizing Viral Protein Structures

Lab 9	Database and Analytical Resources for Viral Research
Lab 10	Respiratory and Hepatic virus diseases
Lab 11	Oncogenic viruses and cancer
Lab 12	Viral Genomics: Nucleotide sequence Databases, its Analysis and Identification.
Lab 13	Sequence databases: GeneBank, EMBL Nucleotide sequence databank, DNA Data Bank of Japan (DDBJ), database formats.
Lab 14	Drug design for virus

16- Course contents: they are incorporated in attached files of lectures

20. References:

1- Principles of Immunology. Basant Kumar Sinha, 1st edition, 2007.

2-Virella, G., 1997. Microbiology and Infectious Diseases. 3rd Ed., Mass Publishing Company.

3-Brooks, G.F., J.S. Butel and S.A. Morse, 2001. Medical Microbiology. 26th Ed., Lange Medical Books/McGraw-Hill.

4-Radostits, O.M., C.C. Gay, D.C. Blood and K.W. Hinchcliff, 2003. Veterinary Medicine, a text book of the diseases of cattle, sheep, pigs, goats, and horses. 9th Ed., WB Saunders.

5- A textbook of Virology and Viral Diseases, by Dilip K. Sharma, 2009.

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