



Department of ...Biology.....

College ofScience.....

University ofSalahaddin.....

Subject: Practical General Microbiology

Course Book – Year 2

Assistant Lecturer: Niga Othman Hamaameen

Academic Year: 2022-2023

Course Book I

1. Course name	General Microbiology
2. Lecturer in charge	Assistant lecturer Niga Othman Hamaameen
3. Department/ College	Biology/Science
4. Contact	e-mail: niga.hamaameen@su.edu.krd Tel: (optional)
5. Time (in hours) per week	Practical: 6/week
6. Office hours	6 hours
7. Course code	
8. Teacher's academic profile	Assistant Lecturer:- Niga Othman Hamaameen I graduated from Salahaddin University in 2006, worked as assistant biology for three years and assist in many labs. Histology and embryology lab., molecular lab., microbiology lab., genetic lab., general biology and ecophysiology lab. In 2013 I finished my MSc degree and started as Assistant Lecturer Teaching in 2015. I have become member in Biological syndicate in 2007.
9. Keywords	Microbiology,bacteria, cell wall.....
10. Course overview: The importance of studying these subjects to understanding microbiology and learn how to deal with many instruments in the lab during working as a microbiologist especially how to use microscope which is the first and forever friend for any biologist, student able to make slides and identify different types of microorganisms during this year study using different test, staining techniques and lab index. Microbiology is a wide field including different types of microorganisms (bacteria, fungi, viruses...etc) which are closely related to our daily life.	
11. Course objective: Define the science of microbiology and describe some of the general methods used in the study of microorganisms Discuss the historical concept of spontaneous generation and the experiments that were performed to disprove this erroneous idea Describe some of the various activities of microorganisms that are beneficial to humans Describe procaryotic and eucaryotic morphology, the two types of cellular anatomy, and also the distribution of microorganisms among the various kingdoms or domains in which living organisms are categorized Discuss the importance of the field of microbiology to other areas of biology and to general human welfare	
12. Student's obligation * Attendance to the lab on time. * Preparation for sudden exam for the previous lab (quiz)	

- * Must be wearing lab coat, gloves and have biblouse paper with them to clean the micr oscopes after use
- * Treat all microorganisms as potential pathogens.
- * Sterilize equipment and materials.
- * Disinfect work areas before and after use. ...
- * Wash your hands before leaving the laboratory.
- * Never pipette by mouth.
- * Do not eat or drink in the lab, nor store food in areas where microorganisms are stored.
- * Label everything clearly.
- * Long hair should be secured behind your head to minimize fire hazard or contamination of experiments.
- * Always wipe and clean the lenses of your microscope before putting it away. Use the appropriate tissue paper and cleaning solution for this purpose.
- * If you are injured in the laboratory, immediately contact your course instructor or TA.
- * Spills, cuts and other accidents should be reported to the instructor or TA in case further treatment is necessary.

13. Forms of teaching

Different forms of teaching will be used to reach the objectives of the course: black board, paper printing, power point presentations for the head titles and definitions also for explaining the microorganisms we use slides either prepared by the students themselves or previous prepared slides (by company)

14. Assessment scheme

Attendance and participation at all course sessions and completion of all assignments are required to receive credit for the course. Two practical examinations will carry out during the course beside the daily quiz and home works.

Practical examination: 30%

Quiz: 5%

15. Student learning outcome:

After completing this course, students will be able to:

- ❖ Understanding what is the microbiology.
- ❖ Recognized and be able to describe features of different types of pathogenic and normal flora of microorganisms
- ❖ Use microscopy tools for studying microorganisms and identify them.

❖ Critically read literature in the field of practical microbiology.

❖ **16. Course Reading List and References:**

1. Stephen H. Gillespie (2006) Principles and Practice of Clinical Bacteriology Second Edition.
2. Atlas, Ronald M., Lawrence C. Parks and Alfred E. Brown (1995) Laboratory Manual of Experimental Microbiology.
3. Johnson, T.R. and C.L. Case (2007) Laboratory Experiments in Microbiology.
4. Forbers, A. Betty, Daniel F. Sahm and Alice S. Weissfeld (2007)
5. Baily and Scotts Diagnostic Microbiology 12th ed. Mosby Elsevier.
6. Nester, E.W., Anderson, D.G., et al (2001) Microbiology a human perspective, 3rd ed. The McGraw-Hill Companies, Inc; Chicago, USA.
7. Harley, J.P., Prescott, L.M (1996). Laboratory Exercises in Microbiology ; The McGraw-Hill Companies, USA.
8. Jawetz, M.; Adelberg, E. A.; Brooks, G. F.; Butel, J. S.; Melnick, J. and Ornston, L.N. Medical Microbiology, Appleton & Lane. (2010).

17. Topics

18. Practical Topics

Lab 1: Course book (Safety rules)

Lab 2: Microscope, types of Microscope and use of microscope

Lab 3: Control of Microbial growth (sterilization).

Lab 4: Types of Culture media and their preparation

<p>Lab 5: Microflora of the environment</p> <p>Lab 6: The size, shape and arrangement of bacterial cells</p> <p>Lab 7: Cultural characteristics of bacteria</p> <p>Lab 8: Determination of bacterial motility</p> <p>First practical exam</p> <p>Lab 9: Bacterial staining (simple staining and negative staining)</p> <p>Lab 10: Gram staining</p> <p>Lab 11: Capsule staining</p> <p>Lab 12: Spore staining</p> <p>Lab 13: Acid fast staining</p> <p>Second practical exam</p>	
<p>19. Examinations:</p> <p>1. Identifying slide: must be identify the slide perfectly and identifying pointed part if they needed.</p> <p>2. Compositional: In this type of exam the questions usually start with Explain how, what are the reasons for...? Why...? How....? With their typical answers Examples should be provided</p> <p>3. True or false type of exams:</p> <p>In this type of exam, a short sentence about a specific subject will be provided, and then students will comment on the trueness or falseness of this particular sentence. Examples should be provided</p> <p>4. Multiple choices:</p> <p>In this type of exam there will be a number of phrases next or below a statement, students</p>	

will match the correct phrase.

5. Draw and label: in this type question need to draw picture scientifically and labelling all parts of the slide.

20. Extra notes

I would like to be helpful person in my department and support any one wants to understand biology in general and microbiology in specific line.

21. Peer review