



Department of Forestry
College of Agriculture Engineering sciences
Salahaddin University-Erbil

Subject: Microbiology (Theory)
Course Book (Year 2)
Academic Year: 2022/2023

Dr. Asmaa Sayed Ahmed Mohamed

Course Book

1. Course name	Microbiology
2. Lecturer in charge	Asmaa Sayed Ahmed Mohamed
3. Department/ College	Horticulture / Agriculture
4. Contact	e-mail: asmaa.ahmed@su.edu.krd
5. Time (in hours) per week	Theory: 2hr.
6. Office hours	Every Day at Horticulture Department expect Saturday
7. Course code	
8. Teacher's academic profile	<p>For further information visit: https://academics.su.edu.krd/asmaa.ahmed And this is my blog page on Research gates https://www.researchgate.net/profile/Asmaa_Ahmed34</p> <p>I teach General Botany for the 1st stage ,Ecology & climate and General microbiology 2nd stage, Genetics for 2nd stage and Organic Agriculture for 3rd stage students</p>
9. Keywords	Microbiology, Bacteria, Fungi, Algae, Viruses, Soil Microbiology, Food microbiology
10. Course overview:	<p>This course provides an introduction to the relationships, structure, and function of Microorganism and our environmental. Topics include reproduction and development of bacteria and other microorganism, levels of organization, form and function of systems, and a survey of major taxa. Upon completion, students should be able to demonstrate comprehension of microorganism roles.</p>

11. Course objective:

this course, students will be able to:

1-Students are provided with understanding and knowledge on the value of microbes in life rather than as disease agents. It is expected that the students will be motivated to develop their innovation on exploiting microbes for positive purposes in human living.

2-To introduce students to fundamental concepts of microbiology

3-Create awareness among students about the various opportunities available to them for conversion of biological material to add value

12. Student's obligation

- ✓ All students are required to take notes or/and writing up lectures throughout the course as the instructor/lecturer will not provide any hand-out either in word or PowerPoint document.
- ✓ After starting the course, the exam will be taken after four lectures.

The time and date of exams will not be changed after being fixed by the lecturer and the students' representative.

13. Forms of Teaching

Different forms of teaching conducted to gain the objectives of the course, such as:

- 1- Using white board to clarify any related subject
- 2- PowerPoint presentation including video show
- 3- Writing up
- 4- Different forms of teaching conducted to gain the objectives of the course
- 5- Theory part, (Hall 4)

14. Assessment scheme

Lecture, and Seminar

Theory part (15% + practical 35 %).=50% and Final Exam =50%

15. Student learning outcome:

The students will:

1. Helping the students in acquiring the required skills.
2. Easy to do very rapid prototyping
3. Quick to learn, and good documentation
4. A good library of image processing functions
5. The student learns how to get accurate results and their use in matters concerning market.
6. Students learn programming and agriculture engineering in a way.

16. Course Reading List and References:

Cowan M.K and Talaro K.P(2006). Microbiology a systems Approach . McGraw- Hill.

-Kamal, G.P.Rao and D.R.Modi (2005). Concepts of microbiology. First Edition International Book Distributing Co. India.

-Prescott L.M., Harley J.P. and Klein D.A.(1999). Microbiology General topics 4th ed. (chapters 1-27) . WCB/McGraw- Hill.

- Prescott L.M., Harley J.P. and Klein D.A.(2005). Microbiology 6th ed. WCB/McGraw- Hill.

- Stuart Hogg. 2005. Essential microbiology. John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England

-Talaro K. and T. Arthur (1996). Foundation In Microbiology Basic Principles . Time Mirror Higher Education Group , Inc.

Journal

1. Indian journal of microbiology
2. Journal of Industrial Microbiology & Biotechnology.
3. Journal of Applied Microbiology.

Websites

<http://journals.asm.org/>

<http://mic.sgmjournals.org/>

<http://www.microbiology-journal.com/>

<http://www.horizonpress.com/gateway/journals.html>

<http://www.springer.com/life+sciences/microbiology/journal/12275>

<http://www.ncbi.nlm.nih.gov/pmc/journals/1358/>

<http://www.amiindia.org/>

<http://www.e-journals.org/microbiology/>

<http://www.doaj.org/doaj?cpid=71&func=subject>

17.Theory Topics

Course program	
1 st Week	<ul style="list-style-type: none"> ▪ Introduction to microbiology ▪ History of microbiology ▪ Important of microbiology ▪ Useful aspects and harmful aspects of microbes
2 nd Week	<ul style="list-style-type: none"> ▪ Bacteria and it is division ▪ Identification of unknown bacteria ▪ Bacterial morphology and nomenclature ▪ Size and weight ▪ Bacterial colony
3 rd Week	<ul style="list-style-type: none"> ▪ Bacterial structure cell ▪ Cytoplasm and cell wall ▪ Spores and germination
4 th Week	<ul style="list-style-type: none"> ▪ Bacterial staining ▪ Gram and acid fast stain
5 th Week	<ul style="list-style-type: none"> ▪ First exam
6 th Week	<ul style="list-style-type: none"> ▪ Bacterial growth curve ▪ Growth and Reproduction of bacteria ▪ Methods of estimating bacterial growth
7 th Week	<ul style="list-style-type: none"> ▪ The effect of environment upon bacteria ▪ Effect of physical agent ▪ Effect of chemical agent
8 th Week	<ul style="list-style-type: none"> ▪ Nutrition of bacteria ▪ Bacterial enzyme ▪ Respiration of bacteria – biological oxidation
9 th Week	<ul style="list-style-type: none"> ▪ Soil , food, microbiology
10 th Week	<ul style="list-style-type: none"> ▪ Food poison ▪ Types of food poison
11 th Week	<ul style="list-style-type: none"> ▪ Description of Fungi, Algae and viruses ▪ Their identification , division and importance