

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Microbiology(1)
Course number	BIOL2304
Faculty	
Department	
Course type	College Needs
Course level	2
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1	- Introduction to the microbial world
2	- Diversity of prokaryotes, their development, structure and function. Prokaryotic metabolism, nutrition and growth. Microbial genetics and control
3	- Fundamental principles of the interrelationships of microorganisms with human
4	- Virology: Introduction, viral families and replication
5	- Mycology: Introduction, classification of fungi and fungal diseases
6	- Parasitology: introduction to protozoa, classification and human pathogenic protozoa

Intended Learning Outcomes

Knowledge and Understanding	* Understanding the different groups of microorganisms
Intellectual Skills	* Interpret the metabolic pathways carried out in bacteria in order to grow, reproduce
	* Introduction in virology, parasitology, phycology and mycology

Course Contents

- 1 - Structure and function of prokaryotic cells, shapes and size of bacteria
- 2 - Cell membrane, cell wall (Gram + and Gram- bacteria)
- 3 - Ribosomes, inclusions, bacterial genome and plasmids
- 4 - Nutrition and growth of bacteria; major growth elements, trace elements, carbon and energy source for bacterial growth
- 5 - Effect of physical and chemical conditions on bacterial growth; Temp, Oxygen, pH, water availability.
- 6 - The diversity of metabolism in prokaryotic cell, energy-generating metabolism (Glycolysis and citric acid cycle)
- 7 - The diversity of metabolism in prokaryotic cell, energy-generating metabolism (Electron transport chain) and Fermentation
- 8 - Biosynthesis of secondary metabolites
- 9 - Introduction to virology; structure of viruses, classification and pathogenicity
- 10 - Introduction to mycology; structure of fungi, their classification and disease
- 11 - Introduction to phycology; structure of algae, their classification and their role in environment
- 12 - Introduction to protozoa; structure of protozoa, their classification and disease

Teaching and Learning Methods

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| 1 - Lectures |
| 2 - Revision and Discussion sections |
| 3 - Student presentation |
| 4 - Exams |

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
First Midterm Exam	60minutes	20
Second Midterm Exam	60minutes	20
Presentations		10
Final Exam	120minutes	50

Books and References

Recommended books	2006 Brock, Biology of microorganisms, Madigan, Martinko, and Parker
	2008 Kenneth Todar, Textbook of bacteriology. University of Wisconsin, Madison, Wisconsin