

### Faculty of Oral & Dental Medicine

### **Botany & Genetics**

Information :

Course Code :	SGS 132	Level	:	Undergraduate	Course Hours :	3.00- Hours

Department : Faculty of Oral & Dental Medicine

### Instructor Information :

Title	Name	Office hours
Associate Professor	Maha Mohamed Youssef Khazendar	16
Associate Professor	Maha Mohamed Youssef Khazendar	16
Associate Professor	Maha Mohamed Youssef Khazendar	16
Lecturer	Abdelfattah Ahmed Abdelkhalek Ahmed Soliman	4
Lecturer	Abdelfattah Ahmed Abdelkhalek Ahmed Soliman	4
Lecturer	Abdelfattah Ahmed Abdelkhalek Ahmed Soliman	4
Lecturer	Sara Seleem Mahmoud Seleem	
Lecturer	Sara Seleem Mahmoud Seleem	
Assistant Lecturer	Dina Magdy Abdel Salam Abdel Aziz	
Assistant Lecturer	Dina Magdy Abdel Salam Abdel Aziz	
Assistant Lecturer	Eman Saeed Korany Muhammed Abdelatti	
Assistant Lecturer	Esraa Hafez Saad Hafez	
Assistant Lecturer	Dina Abd El Hameid Hamdi Abd El Hameid	
Assistant Lecturer	Dina Magdy Abdel Salam Abdel Aziz	
Assistant Lecturer	Dina Abd El Hameid Hamdi Abd El Hameid	
Teaching Assistant	Mariem ElKess Mina Zarief Besada	
Teaching Assistant	Hussien Ali Hussien Morse Khalf	
Teaching Assistant	Doaa Adel Hafez Ahmed Aboalinin	
Teaching Assistant	Hussien Ali Hussien Morse Khalf	
Teaching Assistant	Mariem ElKess Mina Zarief Besada	

## Area Of Study :

<sup>"</sup>Áppreciate the nature of interactions between genes and the

influence of gene interaction on inheritance patterns.

<sup>*"*</sup> Prepare and distinguish Gram +ve and Gram . ve bacteria.

ABegin to develop lab skills in DNA isolation from plant

*A*Be able to understand the different pathogens causing infection and hence know what is infection control strategies in clinics and hospitals.

### **Description :**



Basic microbiolgy (viruses, basic structure - replications - classifications of bacteria). Plant physiolgy (enzymes and enzme kinetics) systematic botany (organizations of prokaryotic and eukaryotics plant cells -characteristic features, fungal, algal, non vascular and vascular plant)

Course out	<u>comes :</u>				
a.Knowled	ge and Understanding: :				
1 -	Explore the system of classification of plants bacteria and fungi				
2 -	Familiarize the students with the general characteristics of microorganisms.				
3 -	Describe the general characteristics of viruses and the different methods of infection and multiplication.				
4 -	Introduce students to the fundamentals of molecular genetics.				
5 -	Explore the DNA structure and replication.				
6 -	Understand the different concepts of plant genetics.				
7 -	Be able to discuss the molecular aspects of chromosome and gene structure, how genes are replicated, expressed and regulated.				
8 -	Appreciate the nature of interactions between genes and the influence of gene interaction on inheritance patterns.				
9 -	Prepare students for heredity diseases in advanced leve	ls.			
b.Intellectu	al Skills: :				
1 -	Use the library and internet resources to develop indepe	ndent study ski	lls through a	ssignments.	
2 -	Distinguish between organic and genetically modified organisms through case studies and debates				
3 -	Prepare and distinguish Gram +ve and Gram . ve bacteria.				
4 -	Identify different fungi microscopically				
5 -	Virus detection by haemagglutination tests				
c.Professio	onal and Practical Skills: :				
1 -	Identify cell structure of the plant.				
2 -	Begin to develop lab skills in DNA isolation from plant				
3 -	Distinguish the microbial pathogens				
4 -	Develop an informed interest in matters of scientific importance and recognize the usefulness, and limitations, of the advances in genetics research.				
5 -	- Conduct experiments and be able to write a report				
d.General a	and Transferable Skills: :				
1 -	- Apply the genetics study in other medicinal disciplines and be stimulated for studies related to the course beyond this introductory level.				
2 -	Apply the study of systematics (bacteria, fungi and viruses) to identify the pathogenic forms.				
3 -	Be able to understand the different pathogens causing infection and hence know what is infection control strategies in clinics and hospitals.				
Course Top	pic And Contents :				
Торіс		No. of hours	Lecture	Tutorial / Practical	
Classificatio	on of living organisms	4	Classificati	Classification of	

on of living living organisms

organisms



Course Topic And Contents :			
Торіс	No. of hours	Lecture	<b>Tutorial / Practical</b>
Bacteria	4	Bacteria	Bacteria
Fungi	4	Fungi	Fungi
Virus	4	Virus	Virus
Introduction to Genetics (mitosis and meiosis)	4	Introductio n to Genetics (mitosis and meiosis)	Introduction to Genetics (mitosis and meiosis)
The genetic code, protein synthesis and Gene regulation	4	The genetic code, protein synthesis and Gene regul	The genetic code, protein synthesis and Gene regul
Mutation, Mendelian inheritance	4	Mutation , Mendelian inheritance	Mutation , Mendelian inheritance
Genes and diseases	4	Genes and diseases	Genes and diseases
Identification of inherited disease	4	Identificati on of inherited disease	Identification of inherited disease
Karyotype. Molecular genetics testing	4	Karyotype. Molecular genetics testing	Karyotype. Molecular genetics testing

Teaching And Learning Methodologies :			
Lectures			
Practical training			
Demonstrations			
Small group discussion			

Course Assessment :				
Methods of assessment	Relative weight %	Week No	Assess What	
1st Mid Term Examination	20.00			
2nd Mid Term Examination	20.00			
Class work	20.00			
Final Written Examination	30.00			
Practical Examination	10.00			



# Recommended books :

Principles of Botany by Uno etal., 2007 Biology of plants by Peter Raven 2008