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
Professor	Alyaa Ragaei Hassan Mohamed Mostafa	
Lecturer	Ahmed Saeed Abdelmawgood Ibrahim	

Area Of Study :

ÅAppreciate the nature of interactions between genes and the influence of gene interaction on inheritance patterns.
ÅPrepare and distinguish Gram +ve and Gram ï ve bacteria.
ÅBegin to develop lab skills in DNA isolation from plant
ÅBe 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 outcomes :

a.Knowledge 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 levels.
b.Intellectual Skills: :	
1 -	Use the library and internet resources to develop independent study skills through assignments.

2 -	Distinguish between organic and genetically modified organisms through case studies and debates
3 -	Prepare and distinguish Gram +ve and Gram ï ve bacteria.
4 -	Identify different fungi microscopically
5 -	Virus detection by haemagglutination tests
c.Professional 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 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 Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Classification of living organisms	4	Classification of living organisms	Classification of living organisms
Bacteria	4	Bacteria	Bacteria
Fungi	4	Fungi	Fungi
Virus	4	Virus	Virus
Introduction to Genetics (mitosis and meiosis)	4	Introduction 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

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Identification of inherited disease	4	Identification 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