Faculty of Oral & Dental Medicine

Basic Dental Biomaterials

Information :

Course Code :	DBM 111	**Level :**	Undergraduate	**Course Hours :**	3.00- Hours

Department : Faculty of Oral & Dental Medicine

Instructor Information :

Title	Name	Office hours
Associate Professor	MOHAMED MAHMOUD ABDELFATAH AMMAR	4
Teaching Assistant	Ahmed Mohamed Abdelaleem Mohamed elsaid Shhatah	
Teaching Assistant	Ola Gamal Aly Abdelsalam Youniss	
Teaching Assistant	Dina Ahmed Mohamed Abdallah El Seftawy	

Area Of Study :

ÅTo present the basic properties of dental materials in relation to their clinical manipulation by the dentist.
ÅTo bridge the gap between the knowledge obtained in the basic course in materials science, chemistry, and physics and the dental operatory.
ÅTo analyze the benefits and limitations of dental materials.
ÅTo make rational decisions on the selection of dental materials and use in a clinical practice.

Description :

Structure of matter Basic Mechanical, Physical & Biological properties bonding and applied surface phenomena, polymers , metallergy , tarnish and corrisions

Course outcomes :

a.Knowledge and Understanding: :	
1 -	a.1- Identify microstructure of different categories of dental materials as metals and alloys, polymers and ceramics.
2 -	a.2- Describe different physical, mechanical and electrochemical properties and scientific terms used in dental materials science.
3 -	a.3- Name factors affecting different properties of dental materials.
4 -	a.4- State basic testing methodologies for different properties.
5 -	a.5- Recognize mechanisms involved in hardening of different categories of materials used in dentistry.
6 -	a.6- List challenges facing materials in dental field which may interfere with their successful utilization.
b.Intellectual Skills: :	
1 -	b.1- Relate between microstructure of different dental materials and their properties.
2 -	b.2- Sketch curves describing different properties of dental materials.
3 -	b.3- Compare between related and/or confusing scientific terms used in the science of dental materials.

4 -	b.4- Explain the effect of different treatments of dental materials on the change of their structure, properties and applications.
5 -	b.5- Interpret different causes and signs of failures of different categories of dental materials.
6 -	b.6- Predict methods to improve qualities of dental materials.
c.Professional and Practical Skills: :	
1 -	c.1- Categorize the different materials according to their microstructure.
2 -	c.2- Determine the use of different materials consistent with their physical, mechanical, and electrochemical properties.
3 -	c.3- Recognize the different testing machine and their use.
4 -	c.4- Find out the behavior of different materials during service in oral cavity.
d.General and Transferable Skills: :	
1 -	d.1- Communicate effectively with colleagues, staff members and helping personnel.
2 -	d.2- Demonstrate appropriate professional attitude and behavior in different situations.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
1. Structure of matter.			
2. Physical properties			
3. Adhesion			
4. Mechanical properties			
5. Polymers			
6. Metallurgy			
7. Corrosion			

Teaching And Learning Methodologies :

4.1. Lectures
4.2. Small group sessions.
4.3. Demonstration
4.4. E-Learning
4.5. Self-learning
4.6. Problem based learning (PBL)

Recommended books :

ÅRestorative Dental materials edited by RG Craig.
ÅPhillips' Science of Dental materials.