

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:

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.6- List challenges facing materials in dental field which may interfere with their successful utilization.
- 2 a.5- Recognize mechanisms involved in hardening of different categories of materials used in dentistry.
- 3 a.4- State basic testing methodologies for different properties.
- 4 a.3- Name factors affecting different properties of dental materials.
- 5 a.2- Describe different physical, mechanical and electrochemical properties and scientific terms used in dental materials science.
- 6 a.1- Identify microstructure of different categories of dental materials as metals and alloys, polymers and ceramics.

b.Intellectual Skills::

- 1 b.6- Predict methods to improve qualities of dental materials.
- 2 b.5- Interpret different causes and signs of failures of different categories of dental materials.
- 3 b.4- Explain the effect of different treatments of dental materials on the change of their structure, properties and applications.

[&]quot;ÁTo present the basic properties of dental materials in relation to their clinical manipulation by the dentist.

[&]quot;ÁTo bridge the gap between the knowledge obtained in the basic course in materials science, chemistry, and physics and the dental operatory.

[&]quot;ÁTo analyze the benefits and limitations of dental materials."

Áo make rational decisions on the selection of dental materials and use in a clinical practice.



4 -	b.3- Compare between related and/or confusing scientific terms used in the science of dental materials.			
5 -	b.2- Sketch curves describing different properties of dental materials.			
6 -	b.1- Relate between microstructure of different dental materials and their properties.			
c.Professional and Practical Skills: :				
1 -	c.4- Find out the behavior of different materials during service in oral cavity.			
2 -	c.3- Recognize the different testing machine and their use.			
3 -	c.2- Determine the use of different materials consistent with their physical, mechanical, and electrochemical properties.			
4 -	c.1- Categorize the different materials according to their microstructure.			
d.General and Transferable Skills: :				
1 -	d.2- Demonstrate appropriate professional attitude and behavior in different situations.			
2 -	d.1- Communicate effectively with colleagues, staff members and helping personnel.			

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:

"ÁRestorative Dental materials edited by RG Craig.

"ÁPhillips' Science of Dental materials.