

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
Professor	Gihan Hafiz Wally Ahamd Atallah	
Lecturer	Khadiga Mostafa Kamel Saad Sadek	1
Teaching Assistant	Ahmed Mohamed Abdelaleem Mohamed elsaid Shhatah	
Teaching Assistant	Layla Mahmoud Mohamed Bakir Alamin	

Area Of Study :

- To present the basic properties of dental materials in relation to their clinical manipulation by the dentist.
- To bridge the gap between the knowledge obtained in the basic course in materials science, chemistry, and physics and the dental operatory.
- To analyze the benefits and limitations of dental materials.
- To 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 , metallurgy , tarnish and corrsions

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 :

- ~ Restorative Dental materials edited by RG Craig.
- ~ Phillips' Science of Dental materials.