

## Faculty of Oral & Dental Medicine

### Biomaterials

#### Information :

**Course Code :** PROS 242

**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	
Associate Professor	Amr Mohamed Rabieh Elsharawy	2
Lecturer	MOHAMED MAHMOUD ABDEL FATAH AMMAR	20
Assistant Lecturer	WALAA MOSTAFA NEMR BAYAA	6
Teaching Assistant	Ahmed Mohamed Abdelaleem Mohamed elsaid Shhatah	8

#### Area Of Study :

- 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 :

Models and die materials , investment materials waxes impression materials , dental casting and base metal alloys , casting technology and joining of metals amalgam and dental ceramics , porcelain metal restorations , dental cements , denture base resin , direct esthetic restorative materials

#### Course outcomes :

##### **a. Knowledge and Understanding: :**

1 -	Understanding chemistry of setting, basic principles and technical products list the different die materials used in dentistry	considerations of gypsum /
2 -	Recognize the requirements, components and types of investment	materials
3 -	Recognize the purpose, requirements, classifications, and general materials list the different types, properties, compositions of waxes	characteristics of impression
4 -	Identify casting procedures and the possible defects	
5 -	Recognize the different types of dental casting alloys, their properties, uses.	methods of casting and
6 -	Identify the different types of wrought base metal alloys and their terminology	properties Express metal joining
7 -	Describe soldering and welding procedures	
8 -	Recognize the structure, properties and technical considerations of dental amalgam.	
9 -	Identify the types, properties, processing techniques of denture base	resins.
10 -	List the different resilient liners and tissue conditioners for dentures.	

11 -	Identify the different types of direct esthetic restorative materials, their properties and clinical applications.	requirements, compositions,
12 -	Recognize the different classes of ceramics, their compositions and	method of strengthening.
13 -	Discuss dental cements, their classification, uses and properties.	
14 -	Discuss the newly introduced materials and describe a criterion for their	selection.

**b. Intellectual Skills: :**

1 -	Demonstrate appropriate professional attitudes and behavior in dealing with staff members & helping personnel.	
2 -	Apply the information technology as a mean of communication for data collection and analysis and for life-long learning..	
3 -	Handle with care any materials and equipments.	

**c. Professional and Practical Skills: :**

1 -	Identify the different dental materials and their mode of supply.	
2 -	Properly manipulate the different dental materials.	
3 -	Select the appropriate material suitable for each clinical situation.	
4 -	Point out the different prosthesis.	

**d. General and Transferable Skills: :**

1 -	Communicate effectively with colleagues, staff members and helping personnel	
2 -	Demonstrate appropriate professional attitude and behavior in different Situations	

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Model and Die Materials	4	Impression Materials	Impression Materials
Investment Materials	4	Impression Materials	Impression Materials
Casting technology	4	Model and Die Materials	Model and Die Materials
Dental Casting Alloys	4	Investment Materials	Investment Materials + Casting Technology
Impression Materials	4	1st mid-term exam +	Ceramics
Dental Cements	4	Non-Metallic Denture Base Materials	Non-Metallic Denture Base Materials
Direct Esthetic Restorative Materials	4	Dental Cements	Dental Cements
None Metallic Denture Base	4	Dental Cements	Dental Cements

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Dental Ceramics	4	Dental Amalgam	Dental Amalgam
Dental Amalgam	4	2nd mid-term exam + Dental Amalgam	Dental Amalgam
Wrought Wire Alloys	4	Direct Anterior Esthetic Materials	Direct Anterior Esthetic Materials
Joining of metals and alloys	4	Direct Anterior Esthetic Materials	Direct Anterior Esthetic Materials

**Teaching And Learning Methodologies :**

Lectures  
Practical  
small group sessions.

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Final written Examination	25.00	16	
first mid term	15.00	5	knowledge and understanding
Oral Examination	10.00	16	knowledge and understanding.
Practical Examination	15.00	15	practical skills
second mid term	15.00	10	knowledge and understanding
Semester Work	20.00		practical skills

**Course Notes :**

Hand out : available for students from the department

**Recommended books :**

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