



**Beni-Suef University
Faculty of Dentistry
Quality Assurance Unit**



Course Specification

University: **Beni-Suef** Faculty: **Dentistry**
Course Title: **Dental biomaterials 1** Course code: **DBM 211**
Program on which the course is given: **Bachelor of Dental Science, Graduate program**
Department offering the course: **Dental biomaterial**
Academic year: **2023/2024** Academic level: **2nd** Semester: **1st**
Date of specification approval: **September 2023**

A-Basic Information

Academic Year:	2023-2024
Course Code:	DBM 211
Lecture hours	2 hours
Practical hours	2 hours
Total credit hours	3 hours
Prerequisite if present:	No

B-Professional Information

1-Overall aims of course

The course aims to introduce knowledge to pregraduate students to the basic structure and properties of materials such as physical, mechanical and other properties and describe their clinical significance in the dental field, also the basic information of different classes of materials such as polymers, metals alloys beside different modes of failure of these materials.

2-Intended learning outcomes of course (ILOs)

a. Knowledge and understanding

a1-Understand atomic structure of matter, different types of bonds, and different crystalline structures.

a2- Identify different physical properties including optical, thermal and electrical

a3-Understand different mechanical properties.

a4- Understand structure of polymers, their classification, polymerization mechanisms and their different properties.

a5- Describe different types of adhesion and factors affecting it.

a6-Identify different modes of failure.

a7-Describe structure of metals, their properties and mechanism of solidification.

a8-Understand different types of investment materials

a9-Identify different types of dental casting alloys, their classification, properties and uses.

b. Intellectual skills

b1-Distinguish different physical and mechanical properties.

b2-Differentiate between different types of polymers.

b3-Differentiate between different modes of failure.

b4-Compare between different casting alloys.

c. Professional and practical skills

c1-Manipulate different investment materials properly.

c2-Manipulate different casting alloys properly.

d. General and transferable skills

d1-Be aware that dental biomaterials are developing rapidly, therefore a continuous update with regard to knowledge and skills is needed, as well as the ways to achieve these.

d2-Use of modern technology such as computer and the internet to search for data and/ or preparing scientific presentations.

3-Contents:

Topic	lecturer	Number of Lecture sessions covering the topic	Number of Practical sessions covering the topic	Total hours	Weighing of the topic	ILOs covered by this topic	Teaching method used for this topic	Assessment methods used for this topic
Structure of matter	Dr/Diaa	1	1	4	7.5%	a1	Interactive lecture Demonstration videos	Course work, Midterm, final, practical
Physical properties	Dr/Diaa	2	2	8	12.5%	a2,b1	Interactive lecture Demonstration videos	Course work, Midterm, final, practical
Mechanical properties	Dr/Diaa	2	2	8	15%	a3,b1	Interactive lecture Demonstration Small group discussion / Brain storming	Course work, Midterm, final, practical
Polymers	Dr/Diaa	1	1	4	10%	a4,b2,d1,d2	Interactive lecture Demonstration	Course work, Midterm, final, practical
Surface	Dr/Diaa	1	1	4	10%	a5	Interactive lecture	Course work , final, practical

phenomenon							Demonstration	
Failure of dental biomaterials	Dr/Diaa	1	1	4	7.5%	a6,b3	Interactive lecture Demonstration Small group discussion / Brain storming	Course work , final, practical
Metallurgy	Dr/Diaa	2	2	8	15%	a7	Online Small group discussion / Brain storming	Course work , final, practical
Investment materials & casting technology	Dr/Diaa	1	1	4	7.5%	a8,c1	Interactive lecture Demonstration videos	Course work , final, practical
Dental casting alloys (online)	Dr/Diaa	2	2	8	15%	a9,b4,c2,d1	Online Small group discussion / Brain storming	Course work , final, practical

4- Teaching and learning methods

Interactive lecture
Demonstration videos
Small group discussion / Brain storming
Demonstrations
Online

5- Student assessment methods

- a. Written, Enumerate and short answer question.
- b. Multiple choice questions (MCQ)
- c. Complete the following
- d. True or False with justifying answer
- e. Give reason
- f. Mid-year exam
- g. Oral exam
- h. Practical exam
- i. Final exam

5.B Assessment schedule

Assignment	Time
Midterm exam	November 2023
Practical exam	December 2023
Oral exam	January 2024
Final exam	January 2024

5.C Weighting of assessments

	Written	Practical	Oral Exam	Midterm and course work	Total
Final Exam	40	20	10	30	100

- List of reference;

- 1- Power Point of lectures
- 2-Text books

- Craig RG: restorative Dental Materials 14th edition 2019

- Philips' Science of Dental Materials 13th edition 2022

Facilities required for teaching and learning

Materials, equipment and devices are needed for more learning requirements

Course director: **Dr/Diaa Elmwafy**

Head of department: **Dr/Ahmed Nabil**

Date: **September 2023**

A handwritten signature in black ink, appearing to read 'Dr. Diaa Elmwafy', is written on the page.