



# Course Specifications

<b>Course Title:</b>	<b>Dental Biomaterials Science</b>
<b>Course Code:</b>	<b>223 RDS</b>
<b>Program:</b>	<b>BACHELOR OF DENTAL SURGERY (BDS)</b>
<b>Department:</b>	<b>Restorative Dental Science</b>
<b>College:</b>	<b>College of Dentistry</b>
<b>Institution:</b>	<b>Majmaah University</b>

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## A. Course Identification

<b>1. Credit hours:</b> 3 hours
<b>2. Course type</b>
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b> 1 <sup>st</sup> Year / 1 <sup>st</sup> and 2 <sup>nd</sup> Semester
<b>4. Pre-requisites for this course (if any):</b> NA
<b>5. Co-requisites for this course (if any):</b> NA

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	30	50%
2	Blended	NA	NA
3	E-learning	NA	NA
4	Correspondence	NA	NA
5	Other	30	50%

### 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
<b>Contact Hours</b>		
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	-
4	Others (specify)	-
	<b>Total</b>	<b>60</b>
<b>Other Learning Hours*</b>		
1	Study	45
2	Assignments	15
3	Library	15
4	Projects/Research Essays/Theses	-
5	Others (specify)	-
	<b>Total</b>	<b>75</b>

\* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

## B. Course Objectives and Learning Outcomes

### 1. Course Description

Demonstrate the knowledge of properties, handling characteristics, advantages and disadvantages of dental materials covered in this course.

### 2. Course Main Objective

- Increased use of audiovisual aids like models, video, power point presentation and pictures.

Use book site and student resources: useful video, websites, post test questions, quick answer questions.

### 3. Course Learning Outcomes

CLOs	Aligned-PLOs	
	<b>Knowledge:</b>	
<b>K3.11</b>	Student should be able to recall basic concepts of biodental material and understanding of their structures ,properties , indications , manipulation.	<b>K3</b>
	<b>Skills :</b>	
<b>S3.4</b>	To evaluate alternative dental material to be used in a specific situation, with an understanding of the impact of the proposed solution.	<b>S3</b>
<b>S6.4</b>	Student should be able to manipulate different materials and perform various procedures in dental rehabilitation at the preclinical level	<b>S6</b>
	<b>Competence:</b>	
<b>C2.8</b>	Student should be able to demonstrate leadership skills and show good communication and coordination with fellow colleagues to complete the assigned professional task.	<b>C2</b>

## C. Course Content

No	List of Topics	Contact Hours
	Direct restorative material- Amalgam	1
	Properties of dental amalgam	1
•	Manipulation of dental amalgam	1
•	Restorative resins (composites)	1
•	Composition of restorative resins	1
•	Clinical properties and application of composites	1
	Holidays	2
•	Clinical properties and application of restorative resins	1
•	Dental cements: Introduction to dental cements	1
•	Midterm exam	1
•	Types of dental cements	1
•	Introduction to Gypsum products	1
•	Types of gypsum products	1
•	Preventive and intermediary materials	1
•	Introduction to adhesion in dentistry	1
•	Dentine bonding	1
•	Impression materials and its application in dentistry	2
•	Casting investments and procedures	2
•	Casting procedure	1
•	Casting machines	1
•	Midterm exam	
•	Dental casting alloys.	1
•	Soldering and welding	1
•	Basic endodontic, periodontic materials and orthodontic materials	2
•	Denture base resins	2
•	Dental Ceramics , Dental implants	2
<b>Total</b>		

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	<b>Knowledge</b>		
1.1	Demonstrate the knowledge of direct restorative materials and indirect restorations and their indications.	Lectures, Practical lab	Recall/Factual Questions in Written exams , Oral evaluations, OSPE, Assignments
1.2	Select, manipulate and evaluate dental materials based on	Lectures, Practical lab	Recall/Factual Questions in Written exams , Oral

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	scientific understanding of their structure and properties.		evaluations, OSPE, Assignments
...			
<b>2.0</b>	<b>Skills</b>		
2.1	To evaluate alternative dental material to be used in a specific situation, with an understanding of the impact of the proposed solution.	Lectures, Practical lab	Conceptual, Analytical or Evaluative questions in Written exams , Oral evaluations, OSPE, Assignments, weekly assessments
2.2	Able to manipulate dental materials.	Lectures, Practical lab	Conceptual, Analytical or Evaluative questions in Written exams , Oral evaluations, OSPE, Assignments, weekly assessments
<b>3.0</b>	<b>Competence</b>		
3.1	Students are encouraged to study together.	Students will be divided into small groups and tasks will be assigned to the group	The group task / Assignment will be supervised closely and the work done by each student will be evaluated using rubrics
3.2	The students will have the ability to work constructively in a group.	Students will be divided into small groups and tasks will be assigned to the group	The group task / Assignment will be supervised closely and the work done by each student will be evaluated using rubrics

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Midyear exam	7	40
2	Behavior and attitude	-	5
3	Weekly practical assessments	-	5
4	Homework	-	1
5	Presentation	10	2
6	Quiz	8	3
7	Oral exam	15	4
8	Final written exam(25%)	16	25
9	Final practical exam(15%)	7	15

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :**

Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	Phillips Science of Dental Materials- 11 <sup>th</sup> edition Kenneth J. Anusavice
<b>Essential References Materials</b>	Journal of prosthetic dentistry, journal of dental research, journal of american dental association. Craig's Restorative Dental Materials. 13 <sup>th</sup> edition. By Ronald L.Sakaguchi and John M. Powers. Phillips' Science of Dental Materials. By Kenneth J.Anusavice.
<b>Electronic Materials</b>	Electronic material on CD, Web sites.
<b>Other Learning Materials</b>	NONE

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	✓ Lecture room suitable for 30 students Fully equipped lab for practical sessions
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	✓ Projector ✓ Smart board with all the accessories Internet
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	✓ Microscopes ✓ Microscopic slides ✓ Soft tissues specimens and casts of oral structures

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and	Students	✓ Course Evaluation Survey

Evaluation Areas/Issues	Evaluators	Evaluation Methods
assessment		Quality of Exam Survey
	Faculty	<input checked="" type="checkbox"/> CLO Mapping with teaching & assessment. <input checked="" type="checkbox"/> Course Blueprinting <input checked="" type="checkbox"/> Grade Analysis Psychometric Analysis
	Peers	Grade Verification
Extent of achievement of course learning outcomes	Faculty member / Quality assurance committee	<input checked="" type="checkbox"/> Direct assessment outcome analysis Course report preparation
Quality of learning resources, etc	Students / Faculty	<input checked="" type="checkbox"/> Academic advising survey Student experience survey
Effectiveness of teaching and assessment	Students	<input checked="" type="checkbox"/> Course Evaluation Survey Quality of Exam Survey
	Faculty	<input checked="" type="checkbox"/> CLO Mapping with teaching & assessment. <input checked="" type="checkbox"/> Course Blueprinting <input checked="" type="checkbox"/> Grade Analysis Psychometric Analysis

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

<b>Council / Committee</b>	Effectiveness of teaching and assessment
<b>Reference No.</b>	1/1441
<b>Date</b>	2/1/1441