

Republic of Yemen
Ministry of Higher Education & Scientific Research

Emirates International University



Faculty of Dentistry
Department of Conservative Dentistry
Doctor of Dental Surgery (DDS)

Course Specification of
Dental Materials II
Course No. (-----)



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Review committee:

Head of the Department

Quality Assurance head

Dean of Faculty



I. Course Identification and General Information:

1	Course Title:	Dental Materials II			
2	Course Code & Number:	----			
3	Credit Hours:	Credit Hours	Theory Hours		Lab. Hours
			Lecture	Exercise	
		3	2	--	2
4	Study Level/ Semester at which this Course is offered:	2 nd Level / 2nd Semester			
5	Pre –Requisite (if any):	Dental Materials I			
6	Co –Requisite (if any):	None			
7	Program (s) in which the Course is Offered:	Doctor of Dental Surgery (DDS)			
8	Language of Teaching the Course:	English			
9	Study System:	Semester based System			
10	Mode of Delivery:	Full Time			
11	Location of Teaching the Course:	Faculty of Dentistry			
12	Prepared by:	Assoc. Prof. Dr. Ibrahim Z. Al-Shami			

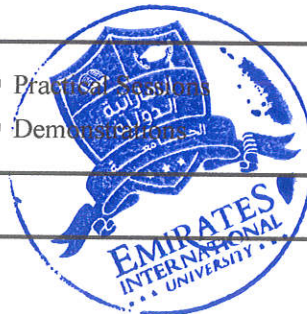
II. Course Description:

This course of the second year will continue to develop the theoretical basis of dental materials with emphasis on the practical application of the theory. It is designed to provide the student with basic knowledge of the composition, properties and manipulation of dental materials used in the dental office and dental laboratory. An understanding of the materials used in dentistry will also improve students' ability to evaluate their work, to troubleshoot clinical problems, and to differentiate between dental materials and selection of the most appropriate ones.

At the end of the course, the student should be able to: Describe the composition, properties and manipulation of various materials used in dentistry, Select the most appropriate material and handle, manipulate various materials used in dentistry.

III. Course Intended Learning Outcomes (CILOs): Upon successful completion of the course, students will be able to:		Referenced PILOs Learning out of program		
A. Knowledge and Understanding:		I, A or E		
a1	Demonstrate the knowledge of direct restorative materials and indirect restorations and their indications.		A5	
a2	Demonstrate the knowledge of properties, handling characteristics, advantages and disadvantages of dental materials		A1	
a3	Recognize the purpose, requirements, classifications as well as general characteristics and technical considerations of different dental materials.		A4	
B. Intellectual Skills:				
b1	Discuss the effect of various clinical procedures on materials' properties		B5	
b2	Interpret and demonstrate the different types of techniques for manipulation of dental materials		B1	
C. Professional and Practical Skills:				
c1	Select and evaluate various dental materials based on scientific understanding of their structure and properties.		C7	
c2	Perform, handle and manipulate various materials used in dentistry.		C7	
D. Transferable Skills:				
d1	Communicate and work effectively and respectfully with staff and colleagues		D3	
d2	Manage time, set priorities and work to prescribed time limits.			

(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:		
Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
a1 Demonstrate the knowledge of direct restorative materials and indirect restorations and their indications.	<ul style="list-style-type: none"> ▪ Lectures ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Midterm Exam ▪ Final Exam
a2 Demonstrate the knowledge of properties, handling characteristics, advantages and disadvantages of dental materials	<ul style="list-style-type: none"> ▪ Lectures ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Midterm Exam ▪ Final Exam
a3 Recognize the purpose, requirements, classifications as well as general Characteristics and technical considerations of different dental materials.	<ul style="list-style-type: none"> ▪ Lectures ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Midterm Exam ▪ Final Exam
(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:		
Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
b1 Discuss the effect of various clinical procedures on materials' properties	<ul style="list-style-type: none"> ▪ Lectures ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Midterm Exam ▪ Final Exam
b2 Interpret and demonstrate the different types of techniques for manipulation of dental materials	<ul style="list-style-type: none"> ▪ Lectures ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Midterm Exam ▪ Final Exam
(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:		
Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
c1 Interpret and demonstrate the different types of techniques for manipulation of dental materials	<ul style="list-style-type: none"> ▪ Practical Sessions ▪ Demonstrations 	<ul style="list-style-type: none"> ▪ Practical Exams ▪ Semester work
c2 Interpret and demonstrate the different types of techniques for manipulation of dental	<ul style="list-style-type: none"> ▪ Practical Sessions ▪ Demonstrations 	<ul style="list-style-type: none"> ▪ Practical Exams ▪ Semester work



	materials		
(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:			
	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
d1	Communicate and work effectively and respectfully with staff and colleagues	<ul style="list-style-type: none"> ▪ Discussions ▪ Practical Sessions 	<ul style="list-style-type: none"> ▪ Direct Observation ▪ Practical Exam ▪ Semester Work
d2	Manage time, set priorities and work to prescribed time limits.	<ul style="list-style-type: none"> ▪ Discussions ▪ Practical Sessions 	<ul style="list-style-type: none"> ▪ Direct Observation ▪ Practical Exam ▪ Semester Work

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Filling materials	<ul style="list-style-type: none"> - Types - Indication - Usage - Silicate and acrylic 	2	4	a1, a2, a3, b
2	Dental cements	<ul style="list-style-type: none"> - Permanent Cement Systems - Classification - composition, - manipulation, - properties and uses 	2	4	a1, a2, a3, b1, b2
3	Dental Amalgam	<ul style="list-style-type: none"> - Chemistry - Types, - Setting Reaction - Properties 	2	4	a1, a2, a3, b1, b2
4	Cavity varnish and Liners	<ul style="list-style-type: none"> - Tissue conditioner - Liners 	1	2	a2, a3, b1, b2
5	Midterm Exam	<ul style="list-style-type: none"> - MCQs and essay questions 	1	2	a1, a2, a3, b1, b2
6	Restorative resins	<ul style="list-style-type: none"> - Dental Polymers - Classification 	2	4	a1, a2, a3, b1, b2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	(composites)	<ul style="list-style-type: none"> - Composition - manipulation - properties and uses 			
7	Bonding Agents	<ul style="list-style-type: none"> - Introduction to adhesion in dentistry - Chemistry - Properties and Performance - Dentin bonding 	1	2	a2, a3, b1, b2, d1
8	temporary filling materials	<ul style="list-style-type: none"> - Types - Indication - Usage 	1	2	a2, a3, b1, b2
9	Dental Ceramics	<ul style="list-style-type: none"> - Composition, classification and technical consideration a. Porcelain fused to metals b. Castable glass ceramics c. Porcelain veneers, inlays, onl 	2	4	a1, a2, a3, b1, b2
10	Polishing and abrasive dental materials	<ul style="list-style-type: none"> - Types - Indication - Usage - Denture cleaners 	1	2	a1, a2, a3, b1
11	Final Exam	<ul style="list-style-type: none"> - MCQs and essay questions 	1	2	a1, a2, a3, b1, b2
Number of Weeks /and Units Per Semester			16	32	

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Week Due	Contact Hours	Learning Outcomes (CILOs)
1	Introduction to materials used in dentistry	3 rd	2	c1, c2, d1, d2
2	<ul style="list-style-type: none"> - Dental Cements: a. Properties of various dental cements, Mixing techniques and clinical handling b. Demonstration of clinical use of various cements as liners, 	4 th - 6 th	6	c1, c2, d1, d2

No.	Tasks/ Experiments	Week Due	Contact Hours	Learning Outcomes (CILOs)
	bases and luting agents			
3	- Metal & Alloys: a. Mixing of dental amalgam both manually and by mechanical amalgamator b. Cavity varnish and Liners	7 th -9 th	6	c1, c2, d1, d2
4	- Restorative resin and their clinical use: - Composite materials manipulations - Bonding Agents	10 th -12 th	6	c1, c2, d1, d2
5	- Abrasive and Polishing Agents: - Demonstration of: a. Porcelain applications b. Metal - ceramic application c. Dentifrices and Denture Cleansers	13 th -14 th	4	c1, c2, d1, d2
6	Practical Exam	15 th	2	c1, c2, d1, d2
Number of Weeks /and Units Per Semester		13	26	

V. Teaching Strategies of the Course:

- Lectures
- Practical Sessions
- Demonstrations
- Discussions

VI. Assessment Methods of the Course:

- Quizzes
- Midterm Exam
- Final Exam
- Practical Exam
- Semester work
- Direct Observation

VII. Assignments:				
No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	<ul style="list-style-type: none"> ▪ Semester work: - (Practical Requirements) 	3 rd - 14 th	10	c1, c2, d1, d2
Total			10	

VIII. Schedule of Assessment Tasks for Students During the Semester:					
No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Assignments	3 rd - 14 th	10	10 %	c1, c2, d1, d2
2	Quizzes	6 th	5	5 %	a1, a2, a3, b1, b2, d1
3	Midterm Exam	8 th	20	20 %	a1, a2, a3, b1, b2
4	Practical Exam	15 th	15	15 %	c1, c2, d1, d2
5	Final Exam	16 th	50	50 %	a1, a2, a3, b1, b2
Total			100	100%	

IX. Learning Resources:	
1- Required Textbook(s):	
1- Kenneth Anusavice, Chiayi Shen H., Ralph Rawls, 2012: Phillips Science of Dental Materials- 12 th edition, Saunders, USA. 2- Ronald Sakaguchi, Jack Ferracane, John Powers, 2011: Craig's Restorative Dental Materials. 13th edition, Mosby, USA.	
2- Essential References:	
1- John Powers, John Wataha, 2012: Dental Materials: properties and manipulation 10 th edition, Mosby, USA. 2- John F. McCabe, Angus Walls, 2008: Applied dental materials, 9th edition, Blackwell, USA.	
3- Electronic Materials and Web Sites etc.:	
Websites:	

- 1- Academy of Dental Materials
<https://www.journals.elsevier.com/dental-materials>
- 2- International Journal of Dental Materials (IJDM)
<https://www.ijdm.co.in>
- 3- Dental Materials Journal
<https://www.academydentalmaterials.com>

X. Course Policies: (Based on the Uniform Students' By law (2007))

1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
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7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

Faculty of Dentistry
Department of Conservative Dentistry
Doctor of Dental Surgery (DDS)

Course Plan (Syllabus) of
Dental Materials II

Course No. (-----)

I. Information about Faculty Member Responsible for the Course:							
Name of Faculty Member:	Dr. Ibrahim Z. Al-Shami	Office Hours					
Location & Telephone No.:							
E-mail:		SAT	SUN	MON	TUE	WED	THU

II. Course Identification and General Information:

1	Course Title:	Dental Materials II			
2	Course Code & Number:	----			
3	Credit Hours:	Credit Hours	Theory Hours		Lab. Hours
			Lecture	Exercise	
		3	2	--	2
4	Study Level/ Semester at which this Course is offered:	2nd Level / 2nd Semester			
5	Pre –Requisite (if any):	Dental Materials I			
6	Co –Requisite (if any):	None			
7	Program (s) in which the Course is Offered:	Doctor of Dental Surgery (DDS)			
8	Language of Teaching the Course:	English			
9	Study System:	Semester based System			
10	Mode of Delivery:	Full Time			
11	Location of Teaching the Course:	Faculty of Dentistry			
12	Prepared by:	Assoc. Prof. Dr. Ibrahim Z. Al-Shami			

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At the end of the course, the student should be able to: Describe the composition, properties and manipulation of various materials used in dentistry, Select the most appropriate material and handle, manipulate various materials used in dentistry.



IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

A. Knowledge and Understanding:	
a1	Demonstrate the knowledge of direct restorative materials and indirect restorations and their indications.
a2	Demonstrate the knowledge of properties, handling characteristics, advantages and disadvantages of dental materials
a3	Recognize the purpose, requirements, classifications as well as general characteristics and technical considerations of different dental materials.
B. Intellectual Skills:	
b1	Discuss the effect of various clinical procedures on materials' properties
b2	Interpret and demonstrate the different types of techniques for manipulation of dental materials
C. Professional and Practical Skills:	
c1	Select and evaluate various dental materials based on scientific understanding of their structure and properties.
c2	Perform, handle and manipulate various materials used in dentistry.
D. Transferable Skills:	
d1	Communicate and work effectively and respectful with staff and colleagues
d2	Manage time, set priorities and work to prescribed time limits.

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Filling materials	<ul style="list-style-type: none"> - Types - Indication - Usage - Silicate and aesthetic 	2	4
2	Dental cements	<ul style="list-style-type: none"> - Permanent luting systems - Classification 	2	4

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		<ul style="list-style-type: none"> - composition, - manipulation, - properties and uses 		
3	Dental Amalgam	<ul style="list-style-type: none"> - Chemistry - Types, - Setting Reaction - Properties 	2	4
4	Cavity varnish and Liners	<ul style="list-style-type: none"> - Tissue conditioner - Liners 	1	2
5	Midterm Exam	<ul style="list-style-type: none"> - MCQs and essay questions 	1	2
6	Restorative resins (composites)	<ul style="list-style-type: none"> - Dental Polymers - Classification - Composition - manipulation - properties and uses 	2	4
7	Bonding Agents	<ul style="list-style-type: none"> - Introduction to adhesion in dentistry - Chemistry - Properties and Performance - Dentin bonding 	1	2
8	temporary filling materials	<ul style="list-style-type: none"> - Types - Indication - Usage 	1	2
9	Dental Ceramics	<ul style="list-style-type: none"> - Composition, classification and technical consideration a. Porcelain fused to metals b. Castable glass ceramics c. Porcelain veneers, inlays, onl 	2	4
10	Polishing and abrasive dental materials	<ul style="list-style-type: none"> - Types - Indication - Usage 	1	2

V. Course Contents:				
A. Theoretical Aspect:				
No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		- Denture cleaners		
11	Final Exam	- MCQs and essay questions	1	2
Number of Weeks /and Units Per Semester			16	32

B. Case Studies and Practical Aspect:			
No.	Tasks/ Experiments	Week Due	Contact Hours
1	Introduction to materials used in dentistry	3 rd	2
2	- Dental Cements: a. Properties of various dental cements, Mixing techniques and clinical handling b. Demonstration of clinical use of various cements as liners, bases and luting agents	4 th - 6 th	6
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4	- Restorative resin and their clinical use: - Composite materials manipulations - Bonding Agents	10 th - 12 th	6
5	- Abrasive and Polishing Agents: - Demonstration of: a. Porcelain applications b. Metal - ceramic application	13 th - 14 th	4

B. Case Studies and Practical Aspect:			
No.	Tasks/ Experiments	Week Due	Contact Hours
	c. Dentifrices and Denture Cleansers		
6	Practical Exam	15 th	2
Number of Weeks /and Units Per Semester		13	26

VI. Teaching Strategies of the Course:	
<ul style="list-style-type: none"> ▪ Lectures ▪ Practical Sessions ▪ Demonstrations ▪ Discussions 	

VII. Assessment Methods of the Course:	
<ul style="list-style-type: none"> ▪ Quizzes ▪ Midterm Exam ▪ Final Exam ▪ Practical Exam ▪ Semester work ▪ Direct Observation 	

VIII. Assignments:			
No.	Assignments	Week Due	Mark
1	Semester work: (Practical Requirements)	3rd - 14th	10
Total			10

Ix. Schedule of Assessment Tasks for Students During the Semester:

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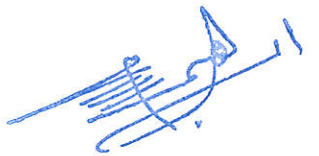


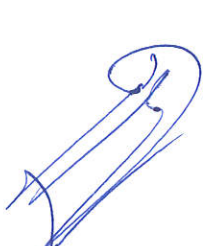
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Dental Materials I

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