

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

Operative Dentistry I (Pre-Clinical)

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:	Operative Dentistry I (Pre-Clinical)			
2	Course Code & Number:	-----			
3	Credit Hours:	Credit Hours	Theory Hours		Lab. Hours
			Lecture	Exercise	
		3	2	--	3
4	Study Level/ Semester at which this Course is offered:	3 rd Level / 1 st Semester			
5	Pre –Requisite (if any):	Introduction to Operative Dentistry, Dental material II and Dental morphology II			
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 is provided for third- year students. It is a combination of lectures and laboratory sessions, representing the basic principles of cavity preparations for the currently available restorative materials and their physical and manipulative characteristics and the different techniques and procedures to restore the lost tooth structure to their proper form, function and aesthetics. students will be trained to Identify and classify carious lesions, design cavities, manipulate and place light-cured composite restorative resin and amalgam restorative material, apply liners and bases, finish and polish amalgam & composite restorations on artificial teeth.

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	Describe the classification, diagnosis, clinical features and sequelae of dental caries.		A5	
a2	Describe the physical characteristics of the currently used adhesives and restorative materials.		A4	
a3	List various techniques used to restore different cavity preparations		A4	
B. Intellectual Skills:				
b1	Choose the different restorative options and design cavities on artificial teeth		B5	
b2	Distinguish between the uses of different dental materials in different clinical situations.		B1	
C. Professional and Practical Skills:				
c1	Practice different cavity designs for amalgam and tooth colored restorations on artificial teeth.		C7	
c2	Apply cement, base materials in different cavities.		C4	
c3	Do proper finishing and polishing of restorations on artificial teeth		C7	
D. Transferable Skills:				
d1	Communicate with dental assistants and colleagues easily		D3	

d2	Utilizes modern sources as tools getting information for self-learning and self-evaluation.		D2	
d3	Manage time during lab work		D4	

(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	Describe the classification, diagnosis, clinical features and sequelae of dental caries.	<ul style="list-style-type: none"> ▪ Lectures ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Midterm Exam ▪ Final Exam
a2	Describe the physical characteristics of the currently used adhesives and restorative materials.	<ul style="list-style-type: none"> ▪ Lectures ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Midterm Exam ▪ Final Exam
a3	List various techniques used to restore different cavity preparations	<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	Choose the different restorative options and design cavities on artificial teeth	<ul style="list-style-type: none"> ▪ Lectures ▪ Demonstrations ▪ Discussions 	<ul style="list-style-type: none"> ▪ Quizzes ▪ Midterm Exam ▪ Final Exam ▪ Practical Exams ▪ Semester work
b2	Distinguish between the uses of different dental materials in different clinical situations.	<ul style="list-style-type: none"> ▪ Lectures ▪ Demonstrations ▪ 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	Practice different cavity designs for amalgam and tooth colored restorations on artificial teeth.	<ul style="list-style-type: none"> ▪ Practical Sessions ▪ Demonstrations ▪ Discussions 	<ul style="list-style-type: none"> ▪ Direct observation ▪ Practical Exams ▪ Semester work
c2	Apply cement, base materials in different cavities.	<ul style="list-style-type: none"> ▪ Practical Sessions ▪ Demonstrations ▪ Discussions 	<ul style="list-style-type: none"> ▪ Direct observation ▪ Practical Exams ▪ Semester work
c3	Do proper finishing and polishing of restorations on artificial teeth	<ul style="list-style-type: none"> ▪ Practical Sessions ▪ Demonstrations ▪ Discussions 	<ul style="list-style-type: none"> ▪ Direct observation ▪ Practical Exams ▪ Semester work

(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 with dental assistants and colleagues easily	<ul style="list-style-type: none"> ▪ Self-Learning ▪ Presentation ▪ Seminars 	<ul style="list-style-type: none"> ▪ Direct observation ▪ Practical Exams ▪ Semester work
d2	Utilizes modern sources as tools getting information for self-learning and self-evaluation.	<ul style="list-style-type: none"> ▪ Self-Learning ▪ Presentation ▪ Seminars 	<ul style="list-style-type: none"> ▪ Direct observation ▪ Practical Exams ▪ Semester work
d3	Manage time during lab work	<ul style="list-style-type: none"> ▪ Self-Learning ▪ Presentation ▪ Seminars 	<ul style="list-style-type: none"> ▪ Direct observation ▪ Practical Exams ▪ Semester work

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Amalgam cavity	<ul style="list-style-type: none"> - Sequence of class II preparations - General considerations - Types of class II cavity 	1	2	a3, b1

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	preparations Class II	preparation - The extended class II amalgam			
2	Intermediary base materials	- Dental cements materials, - Cavity liners, - Cement, bases - Varnishes - advantages and disadvantages, - uses and manipulation	1	2	a2, b2
3	Dental Amalgam restorations for class II	- Manipulations technique for Class II - Matrix band and retainer. - Condensation of the amalgam restoration. - Carving of amalgam and carving instruments. - Finishing and Polishing	2	4	a2, b2
4	Dental Caries	- Classification - Sites and Progression of Caries - Diagnosis - Prevention and control	3	6	a1, b1
5	Midterm Exam	- MCQs and essay questions	1	2	a1, a2. a3, b1, b2
6	Composite Resin Materials Part I	- History, Composition - Classification - Indication, Contraindication, - Advantages, Disadvantages	1	2	a2,a3, b2,
7	Principles of Tooth preparation for Composite	- Class III, IV and V - Definition - Tooth preparation	2	4	a3, b2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	Restoration	- different designs			
8	Composite Resin Materials Part II	- Etching, - Bonding, - Bonding to enamel and dentin	2	4	a2, a3, b2
9	Composite Cavity Restoration	- class III, IV, V restorations - Restorative Procedures	1	2	a2, b2
10	Finishing and Polishing of Restorations	- Objectives - Instrumentation - Techniques	1	2	a2, b2
11	Final Exam	- 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 the Course, - Distribution of Instruments - Mounting of Plastic Teeth - Review and Practice: Class I Occlusal and Buccal Pit Amalgam Cavity Preparation	1 st	3	b1, b2, c1, d1, d2, d3
2	Demonstration and Practice: Class II Amalgam Cavity Preparation on lower and upper molars	2 ^{ed} 3 rd	6	b1, c1, d1, d2, d3
3	Demonstration and Practice: Class II Amalgam Cavity Preparation on lower and upper premolars	4 th 5 th	6	b1, c1, d1, d2, d3

No.	Tasks/ Experiments	Week Due	Contact Hours	Learning Outcomes (CILOs)
4	Demonstration and Practice: liner and base, Matrix Formation and Placement & Amalgam Restorations	6 th	3	b2, c1, c2, c3, d1, d3
5	Practice: Matrix Placement and Amalgam Restorations on all Class II cavities	7 th	3	b2, c1, c2, c3, d3
6	Demonstration and Practice: Class II (MO-OL) Amalgam Preparation and restoration	8 th	3	b1, c1, d1, d2, d3
7	Demonstration and Practice: Finishing and Polishing of various Amalgam Restorations - Class I and Class II	9 th	3	b2, c1, c2, c3, d3
8	Demonstration and Practice: Cavity Preparation and restorations for Composite Resin on upper and lower centrals and laterals, Class III Lingual Approach,	10 th 11 th	6	b2, c1, c2, c3, d3
9	Demonstration and Practice: Cavity Preparations and restorations for Composite Resin on upper anterior teeth, Class IV (Traumatic)	12 th	3	b2, c1, c2, c3, d3
10	Demonstration and Practice: Preparation and restorations for Composite Resin on anterior and posterior teeth, Class V Facial Cavities	13 th	3	b2, c1, c2, c3, d3
11	Demonstration and Practice: Finishing and Polishing of Composite Resin Restorations	14 th	3	b2, c2, c3, d1, d2, d3
12	Practical Exam	15 th	3	b1, b2, c1, c2, c3, d1, d2, d3
Number of Weeks /and Units Per Semester		15	45	

V. Teaching Strategies of the Course:

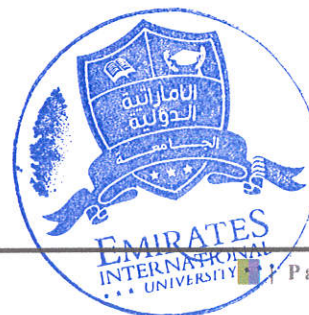
- Lectures
- Presentations
- Demonstrations
- Discussions
- Seminars
- Practical Sessions
- Self-Learning

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	Semester work: - practical laboratory work and Requirements	2 nd – 14 th	10	b1, b2, c1, c2, c3, d1, d2, d3
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	2 nd – 14 th	10	10%	b1, b2, c1, c2, c3, d1, d2, d3
2	Quiz	6 th	5	5 %	a1, a2, a3, b1, b2
3	Midterm Exam	8 th	20	20 %	a1, a2. a3, b1, b2
4	Practical Exam	15 th	15	15 %	b1, b2, c1, c2, c3, d1, d2, d3
5	Final Exam	16 th	50	50 %	a1, a2. a3, b1, b2
Total			100	100 %	

IX. Learning Resources:

1- Required Textbook(s):

- 1- Theodore Roberson, Harald O. Heymann, 2013: Sturdevant's Art and Science of Operative Dentistry, 6th Edition, Mosby, USA.
- 2- Hilton, Thomas J.; Ferracane, Jack L., and Broome, James, 2013: Fundamentals of Operative Dentistry: A Contemporary Approach, Fourth Edition, Quintessence, USA.

2- Essential References:

- 1- A. J. E. Qualtrough, Julian Satterthwaite, Leean Morrow, and Paul Brunton, 2009: Principles of Operative Dentistry, John Wiley & Sons, USA.
- 2- Nisha Garg, Amit Garg, 2015: Textbook of Operative Dentistry. 3rd Edition, JP Medical Ltd, India.
- 3- Harpreet Singh, 2011: Essentials of Preclinical Conservative Dentistry, 2nd Edition, Walter Kluwer, Netherland.

3- Electronic Materials and Web Sites etc.:

Websites:

- 1- Journal of dentistry
<https://www.journals.elsevier.com › journal-of-dentistry>



- 2- Operative Dentistry Journal
<https://www.meridian.allenpress.com/operative-dentistry>
- 3- Dental Materials Journal
<https://www.researchgate.net>
- 4- Digital Restorative Dentistry
<https://www.springer.com/gp/book>

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.
6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
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
Program of Doctor of Dental Surgery (DDS)

Course Plan (Syllabus) of
Operative Dentistry I (Pre-Clinical)

Course No. (-----)

I. Information about Faculty Member Responsible for the Course:						
Name of Faculty Member:	Ibrahim Z. Al-Shami	Office Hours				
Location & Telephone No.:	Sanaa 777980568	4 Hours Weekly				
E-mail:	ibrahimzaed@yahoo.com	SAT 1	SUN	MON 1	TUE 1	WED THU 1



II. Course Identification and General Information:

1	Course Title:	Operative Dentistry I (Pre-Clinical)			
2	Course Code & Number:	-----			
3	Credit Hours:	Credit Hours	Theory Hours		Lab. Hours
			Lecture	Exercise	
		3	2	--	3
4	Study Level/ Semester at which this Course is offered:	3rd Level / 1st Semester			
5	Pre –Requisite (if any):	Introduction to Operative Dentistry, Dental material II and Dental morphology II			
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			

III. Course Description:

This course is provided for third- year students. It is a combination of lectures and laboratory sessions, representing the basic principles of cavity preparations for the currently available restorative materials and their physical and manipulative characteristics and the different techniques and procedures to restore the lost tooth structure to their proper form, function and aesthetics. students will be trained to Identify and classify carious lesions, design cavities, manipulate and place light-cured composite restorative resin and amalgam restorative material,

apply liners and bases, finish and polish amalgam & composite restorations on artificial teeth.

IV. Course Intended Learning Outcomes (CILOs):

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

A. Knowledge and Understanding:	
a1	Describe the classification, diagnosis, clinical features and sequelae of dental caries.
a2	Describe the physical characteristics of the currently used adhesives and restorative materials.
a3	List various techniques used to restore different cavity preparations
B. Intellectual Skills:	
b1	Choose the different restorative options and design cavities on artificial teeth
b2	Distinguish between the uses of different dental materials in different clinical situations.
C. Professional and Practical Skills:	
c1	Practice different cavity designs for amalgam and tooth colored restorations on artificial teeth.
c2	Apply cement, base materials in different cavities.
c3	Do proper finishing and polishing of restorations on artificial teeth
D. Transferable Skills:	
d1	Communicate with dental assistants and colleagues easily
d2	Utilizes modern sources as tools getting information for self-learning and self-evaluation.
d3	Manage time during lab work

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
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V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Amalgam cavity preparations Class II	<ul style="list-style-type: none"> - Sequence of class II preparations - General considerations - Types of class II cavity preparation - The extended class II amalgam 	1	2
2	Intermediary base materials	<ul style="list-style-type: none"> - Dental cements materials, - Cavity liners, - Cement, bases - Varnishes - advantages and disadvantages, - uses and manipulation 	1	2
3	Dental Amalgam restorations for class II	<ul style="list-style-type: none"> - Manipulations technique for Class II - Matrix band and retainer. - Condensation of the amalgam restoration. - Carving of amalgam and carving instruments. - Finishing and Polishing 	2	4
4	Dental Caries	<ul style="list-style-type: none"> - Classification - Sites and Progression of Caries - Diagnosis - Prevention and control 	3	6
5	Midterm Exam	<ul style="list-style-type: none"> - MCQs and essay questions 	1	2
6	Composite Resin Materials Part I	<ul style="list-style-type: none"> - History, Composition - Classification - Indication, Contraindication, - Advantages, Disadvantages 	1	2

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
7	Principles of Tooth preparation for Composite Restoration	<ul style="list-style-type: none"> - Class III, IV and V - Definition - Tooth preparation - different designs 	2	4
8	Composite Resin Materials Part II	<ul style="list-style-type: none"> - Etching, - Bonding, - Bonding to enamel and dentin 	2	4
9	Composite Cavity Restoration	<ul style="list-style-type: none"> - class III, IV, V restorations - Restorative Procedures 	1	2
10	Finishing and Polishing of Restorations	<ul style="list-style-type: none"> - Objectives - Instrumentation - Techniques 	1	2
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	<ul style="list-style-type: none"> - Introduction to the Course, - Distribution of Instruments - Mounting of Plastic Teeth - Review and Practice: Class I Occlusal and Buccal Pit Amalgam Cavity Preparation 	1 st	3
2	Demonstration and Practice: Class II Amalgam Cavity	3 rd	6

B. Case Studies and Practical Aspect:			
No.	Tasks/ Experiments	Week Due	Contact Hours
	Preparation on lower and upper molars		
3	Demonstration and Practice: Class II Amalgam Cavity Preparation on lower and upper premolars	4 th 5 th	6
4	Demonstration and Practice: liner and base, Matrix Formation and Placement & Amalgam Restorations	6 th	3
5	Practice: Matrix Placement and Amalgam Restorations on all Class II cavities	7 th	3
6	Demonstration and Practice: Class II (MO-OL) Amalgam Preparation and restoration	8 th	3
7	Demonstration and Practice: Finishing and Polishing of various Amalgam Restorations - Class I and Class II	9 th	3
8	Demonstration and Practice: Cavity Preparation and restorations for Composite Resin on upper and lower centrals and laterals, Class III Lingual Approach,	10 th 11 th	6
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11	Demonstration and Practice: Finishing and Polishing of Composite Resin Restorations	14 th	3
12	Practical Exam	15 th	3
Number of Weeks /and Units Per Semester		15	45

VI. Teaching Strategies of the Course:

- Lectures
- Presentations
- Demonstrations
- Discussions
- Seminars
- Practical Sessions
- Self-Learning

VII. Assessment Methods of the Course:

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

VIII. Assignments:

No.	Assignments	Week Due	Mark
1	Semester work: - practical laboratory work and Requirements	2nd – 14th	10
Total			10



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

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Assignments	2 nd – 14 th	10	10%
2	Quiz	6 th	5	5 %
3	Midterm Exam	8 th	20	20 %
4	Practical Exam	15 th	15	15 %
5	Final Exam	16 th	50	50 %
Total			100	100 %

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