Course Specifications

Course Title:	**Clinical Operative Dentistry - II**
Course Code:	**RDS 413**
Program:	**Bachelor of Dentistry [BDS]**
Department:	**Restorative Dentistry Department [RDS]**
College:	**College of Dentistry**
Institution:	**Majmaah University**

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A. Course Identification

1. Credit hours: **3** (1+2+0)
2. Course type **a.** University ☐ College ☐ Department **X** Others ☐ **b.** Required **X** Elective ☐
3. Level/year at which this course is offered: 4th Year / 1st and 2nd Semester
4. Pre-requisites for this course (if any)**: RDS 313**
5. Co-requisites for this course (if any)**:NA**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	15	35%
2	**Blended**	NA	NA
3	**E-learning**	NA	NA
4	**Correspondence**	NA	NA
5	**Other - Laboratory**	90	65%

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	**15**
2	**Laboratory/Studio**	**90**
3	**Tutorial**	**-**
4	**Others** (specify)	**-**
	Total	**105**
Other Learning Hours*		
1	**Study**	**45**
2	**Assignments**	**15**
3	**Library**	**15**
4	**Projects/Research Essays/Theses**	**15**
5	**Others** (specify)	**-**
	Total	**90**

* 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

It is a one-year course, given as a one hour lecture in the 1st semester and a three hour practical session each in the 1st and 2nd semester of the same year Clinical Operative Dentistry is a course that focuses on prevention, diagnosis and treatment of defects in enamel and dentin of individual teeth.

Clinical Operative Dentistry is one of the most important courses in dentistry where the student deals with advanced operative cases, restorative materials and better handling of clinical cases. A complete clinical history of the patient has to be taken and they have to arrive at a diagnosis and treatment planning of more advanced cases. The course helps the students to get accustomed to the various treatment modalities and the use of newer restorative materials which inturn help them to gain confidence and demonstrate better clinical skills on patients

Operative Dentistry is a branch which is of utmost importance in dental practice as it deals with dental caries, its causes, clinical features, diagnosis and treatment and hence restoring the integrity of the teeth with various restorative materials.

2. Course Main Objective

The main purpose of the course is take a comprehensive patient history and relate it, so as to arrive at a diagnosis and treat caries according to risk assessment. The student should also know the different isolation and operative procedures and also select appropriate restorative materials for restoration of damaged teeth tissues.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1.	**Knowledge:**	
K3.23	Recall the various conditions related to the tooth and suggest the differential diagnosis of various carious processes and write an appropriate treatment plan	K3
K3.24	Recall different isolation procedures, describe the cavity preparation required and select the appropriate restorative material for restoration of damaged or fractured and badly broken down teeth tissues	
2.	**Skills :**	
S3.11	Critically analyze clinical and radiographic findings of cases and predict a treatment plan towards restorability of the carious teeth, explain the operative procedures to be followed in preventive and restorative treatment	S3
S6.9	To demonstrate clinical skills in performing rubber dam isolation, minimally invasive operative procedures including proper manipulation, placement and finishing of restorative materials so as to reconstruct and restore the tooth back to its normal shape, form and function	S6
3.	**Competence:**	
C3.7	Demonstrate communication skills with the patients and coordinate	C3

CLOs		Aligned PLOs
	with fellow colleagues to submit a group task or assignment and justify the restorative material used in the management of a clinical cases	

C. Course Content

No	List of Topics	Contact Hours
1	**Introduction to operative dentistry** 1. Introduction to 411 RDS course. 2. The course rules and regulations 3. Recording the patient information and complete the clinical evaluation book.	1
2	**Adhesion to Tooth Structure** 1. Bonding of enamel and dentin. 2. Different generations of DBA & characteristics of the 4th, 5th& 6th generations 3. Dentin acid etching technique 4. Characteristics of the resin/dentin inter-phase 5. The concept of wet bonding 6. Types of primers (acetone-based, water-based and self-etching) 7. Direct pulp capping with adhesives and treating dentin adhesives with DBA.	1
3	**Direct Anterior Composite Resin Restorations** 1. Composites classification 2. Advantages of direct anterior composites 3. Factors influencing composite selection 4. Clinical application of composites 5. Composite finishing and polishing 6. Class III, Class IV, Diastema closure, incisal elongation, direct and indirect composite veneers 7. Esthetic reconstruction of anterior teeth with composite resin	1
4	**Direct Posterior Composite Resin Restorations** 1. Indications for placing composite resin in posterior occlusal cavities. 2. Limitations of the materials and the techniques used to counteract their effects. 3. Clinical steps for placing composite resin restorations 4. Advantages and disadvantages of packable composites. 5. Tunnel preparations technique, its advantages and limitations. 6. The uses of flowable composites, their advantages & disadvantages. 7. Advantages of composite surface sealants.	1
5	**Restoration of Cervical Lesions. Part - I** 1. Etiology of cervical lesion carious and non-carious, and the assessment of the risk factors associated with it. 2. Methods of isolation of such cavities including 212 clamp and	1

	surgical isolation. 3. The scope of materials available for such restorations and the indications for each (composite, conventional GIC, resin modified GIC, compomer& amalgam) 4. Advantages & disadvantages of the different materials.	
6	**Restoration of Cervical Lesions. Part - II** 1. Placement technique of the different materials and their finishing & polishing procedures. 2. Incremental placement technique and the veneering technique. 3. Indications for the sandwich technique in class III, IV & V and how it is done	1
7	**Restoration of Badly Broken Down Teeth** 1. Diagnose and management of deep carious lesions and the treatment options (pre-operative assessment) 2. Methods of stepwise excavation of carious lesions 3. The difference between indirect and direct pulp capping 4. The dynamics of indirect pulp capping and the steps of treatment for direct pulp capping 5. Evaluation of the rate of success in both direct and indirect pulp capping 6. Treatment options for severely broken down teeth and factors that must be taken into consideration. 7. Causes of restoration failure 8. The different kinds of pins available for use with large amalgam restoration 9. When and where to use pin retained amalgam restorations and their clinical technique 10. Clinical steps of the TMS pin retention method 11. Causes and management of failure in pin retained amalgam 12. Techniques for bonding amalgam to tooth structure and its clinical procedures	1
8	**Restoration of Endodontically Treated Teeth** 1. The importance of proper management of endodontically treated teeth in restorative dentistry 2. Diagnoses and determination of the level of treatment in case of badly broken down teeth 3. Different techniques in managing anterior endodontically treated teeth 4. Different technique in managing posterior endodontically treated teeth.	1
9	**Cast Gold Restorations. Part - I** 1. Indication and contraindication of onlays& partial veneer castings 2. Concept of using gold casting 3. Steps for preparing partial veneer and onlay preparations	1
10	**Cast Gold Restorations. Part - II** 1. Different designs, preparations, &the importance of tissue management 2. The proper selection of impression material and cements used during the clinical procedure 3. The steps of temporization and cementation.	1

11	**Tooth Colored Inlays and Onlays. Part - I** 1. Indications and contraindication for tooth colored inlays and onlays. 2. The different systems of constructing tooth colored inlays and onlays. 3. Composite resin inlay and onlays 4. Conventional porcelain inlays	1
12	**Tooth Colored Inlays and Onlays. Part - II** 1. Glass ceramic inlays and onlays (castable, injection molded, CAD-CAM and copy milled materials) 2. The indications and advantages for each system. 3. The clinical and laboratory steps of this technique in details 4. Steps of cementation using resin-luting agents	1
13	**Esthetic Dentistry. Part - I** 1. Esthetic considerations in treatment planning 2. Different esthetic treatment modalities to restore conservatively discolored teeth and slightly malformed or spaced teeth 3. Bleaching 4. Indications and contraindications 5. Step-by-step clinical approach 6. The different treatment modalities to restore conservatively discolored teeth and slightly malformed or spaced teeth according to the following:	1
14	**Esthetic Dentistry. Part - II** 1. Enamel micro-abrasion 2. Enameloplasty 3. Diastema closure using composite resin 4. Indications and contraindications 5. Step-by-step clinical approach. 6. How to manage discolored malformed or spaced teeth that did not respond to the usual treatment 7. Laminate veneers: a. Direct (Composite resin) b. Indirect (bonded porcelains)	1
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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	**Knowledge**		
K3.23	Recall the various conditions related to the tooth and suggest the differential diagnosis of various carious processes and write an appropriate treatment plan	Lectures, Practical lab	Recall/Factual Questions in Written exams, Oral evaluations and Practicals
K3.24	Recall different isolation procedures, describe the cavity	Lectures, Practical lab	Recall/Factual Questions in Written exams , Oral

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	preparation required and select the appropriate restorative material for restoration of damaged or fractured and badly broken down teeth tissues		evaluations, OSPE, Assignments
2	**Skills :**		
S3.11	Critically analyze clinical and radiographic findings of cases and predict a treatment plan towards restorability of the carious teeth, explain the operative procedures to be followed in preventive and restorative treatment	Lectures, Practical lab	Conceptual, Analytical or Evaluative questions in Written exams , Oral evaluations, OSPE, Assignments, weekly assessments
S6.9	To demonstrate clinical skills in performing rubber dam isolation, minimally invasive operative procedures including proper manipulation, placement and finishing of restorative materials so as to reconstruct and restore the tooth back to its normal shape, form and function	1.Clinical training on isolation procedures, cavity preparations and placement of restorative materials. 2. Check list for self-assessment of the task, Individualized attention for correction of mistake & grading of the task. 3.Practical assignments where a specific time limit is given to the student	Hands-on examination of tooth preparation procedures, Selection of appropriate restorative material, OSCE & Viva voce.
3	**Competence:**		
C3.7	Demonstrate communication skills with the patients and coordinate with fellow colleagues to submit a group task or assignment and justify the restorative material used in the management of a clinical cases	Students will be divided into small groups and tasks will be assigned to the group and assessment will be made.	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	Quiz	During the semester	05%

#	Assessment task*	Week Due	Percentage of Total Assessment Score
2	Midterm written exam	Week 7	15%
3	Final written exam	End of the semester	15%
4	Weekly Assessment	During the course	30%
5	Research	During the semester	05%
6	Behaviour and attitude	During the semester	05%
7	Final Practical Exam	During the semester	25%
	Total		100%

***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 :
The student shall avail the consultancy during the displayed office hours

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	✓ Sturdevant,s Art and Science of Operative Dentistry , Harald O.Heymann, Edward J. Swift jr and Andre V. Ritter . Elsevier . 2012
Essential References Materials	✓ Fundamentals of operative Dentistry; A contemporary Approach , James B. Summitt, J William , Robbins , Thomas J . Hilton , Richard S. .2006 ✓ Pickard,s Manual of operative Dentistry . Avijit Banerjee, Timothy F . Watson . Oxford 2011
Electronic Materials	□Recommended selected articles will be posted in the course webpage. □www.pubmed.com □Google □www.sciencedirect.com
Other Learning Materials	□Library □Computers □Projects □Diagnostic instruments

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	✓ Lecture room suitable for 30 students ✓ Fully equipped dental clinics for practical sessions

Item	Resources
Technology Resources (AV, data show, Smart Board, software, etc.)	✓ Projector ✓ Smart board with all the accessories ✓ Internet
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	✓ Sterilization equipment ✓ Dental clinics

G. Course Quality Evaluation

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

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

Council / Committee	**Department Council**
Reference No.	**********
Date	**********