### Course Specifications

**Kingdom of Saudi Arabia**

**The National Commission for Academic Accreditation & Assessment**

**Department Of Restorative Dental Science**

**Restorative Procedure II**

**Course Specifications**

**(CS)**

**2nd Semester**

**2013 – 2014 G (1434 -1435 H)**

**Course Coordinator:** Dr Rasha N AlSheikh**Course Specifications**

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| Institution University of Dammam Date of Report Dec 2013 |
| College/Department College of Dentistry, Restorative Dental Science Department |

**A. Course Identification and General Information**

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| 1. Course title and code: Restorative Procedure II (RDS-522) |
| 2. Credit hours 3 |
| 3. Program(s) in which the course is offered.  Bachelor of Dental Surgery |
| 4. Name of faculty member responsible for the course  Dr Rasha N AlSheikh |
| 5. Level/year at which this course is offered |
| 6. Pre-requisites for this course (if any)   * Restorative Procedure I - Clinical Prostho I - Preventive Perio -Pathology-I - Dental Pharmacology |
| 7. Co-requisites for this course (if any)  Non |
| 8. Location if not on main campus  College of Dentistry |
| 9. Mode of Instruction (mark all that apply)  a. Traditional classroom What percentage?  b. Blended (traditional and online) √ What percentage? 30  c. e-learning What percentage?  d. Correspondence What percentage?  f. Other √ What percentage? 70%  Comments:  Regular classes and clinic training will be conducted on the college campus. Course content, assignments and extra reading materials will be available on the course page in blackboard. |

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| **Participating Faculty Members Info:**   |  |  | | --- | --- | | Dr. Rasha Alsheikh, BDS, MsD  Assistant Professor  Course Director  Office # 087  [ralsheikh@ud.edu.sa](mailto:ralsheikh@ud.edu.sa) | Dr. Moataz Algezawy, BDS, MDS, PhD Associate Professor  Office # 038  [malgizawi@ud.edu.sa](mailto:malgizawi@ud.edu.sa) | | Dr. Abeer Alembaby, BDS, MDS, PhD  Assistant Professor  Office # 087  [aeelembaby@ud.edu.sa](mailto:aeelembaby@ud.edu.sa) | Dr. Inas Alghandoor, BDS, MSD, PhD Assistant Professor  Office # 395  [ielghandour@ud.edu.sa](mailto:ielghandour@ud.edu.sa) | | Dr. Ahmed Talal  Assistant Professor  Office #038  [atalal@ud.edu.sa](mailto:atalal@ud.edu.sa) | Dr Said Zubaireldeen Ahmed  Lecturer  [szahmed@ud.edu.sa](mailto:szahmed@ud.edu.sa) | |

**B. Objectives**

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| 1. The goal of restorative procedure II course is to validate the establishment of competency by the new dentist, helping them reach high provisional standards during the different restorative procedures, patient diagnosis, treatment and care. |
| 2. Restorative procedure II aimed to be taught for the 5th year student during the second semester as the final Operative Dentistry course. The course consists of one lecture and two clinical sessions each week.  Upon revising the restorative courses some topics has been shifted and modified to improve the learning procedure and eliminate any redundancy. |

**C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)**

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| 1. Topics to be Covered | | |
| List of Topics | No. of  Weeks | Contact Hours |
| * Contemporary Esthetic Restorative Procedure | 2 | 2 |
| * Vital Bleaching | 1 | 1 |
| * Adhesion in Restorative Dentistry | 2 | 2 |
| * Indirect Esthetic Restoration | 3 | 3 |
| * Restoration of Mutilated Teeth | 1 | 1 |
| * Plea of Conservatism & Atraumatic restorative Dentistry | 1 | 1 |
| * Pin Retained Amalgam Restorations | 1 | 1 |
| * Restorations Failure and Repair | 2 | 2 |
| * Post Restorative Pain and Hyper-sensitivity | 1 | 1 |
| * FINAL ASSIGNMENT | 1 | 1 |

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| 2. Course components (total contact hours and credits per semester): | | | | | | |
|  | Lecture | Tutorial | Laboratory | Clinical | Other: | Total |
| Contact  Hours | 15 |  |  | 90 |  | 105 |
| Credit | 1 |  |  | 2 |  | 3 |

**Lecture Schedule**

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| --- | --- | --- | --- |
| Week | Date | Topics | Faculty |
| 1 | 26/1/2014 | Introduction and assignment Distribution | Dr. Rasha Alsheikh |
| Contemporary Esthetic Restorative Procedure I |
| 2 | 2/2/2014 | Contemporary Esthetic Restorative Procedure II |
| 3 | 9/2/2014 | Vital Bleaching | Dr. Abeer El-Embaby |
| 4 | 16/2/2014 | Adhesion in Restorative Dentistry I | Dr. Ahmed Talal |
| 5 | 23/2/2014 | Adhesion in Restorative Dentistry II |
| 6 | 2/3/2014 | Indirect Esthetic Restoration I | Dr Moataz El-Gezawi |
| 7 | 9/3/2014 | Indirect Esthetic Restoration II |
| 8 | 16/3/2014 | Indirect Esthetic Restoration III |
| 9 | 30/3/2014 | Restoration of Mutilated Teeth | Dr. Inas El-Ghandour |
| 10 | 6/4/2014 | Plea of Conservatism & Atraumatic restorative Dentistry | Dr. Abeer El-Embaby |
| 11 | 13/4/2014 | Pin Retained Amalgam Restorations | Dr. Abeer El-Embaby |
| 12 | 20/4/2014 | Assignment | Dr Rasha Alsheikh & All staff |
| 13 | 27/4/2014 | Restorations Failure and Repair I | Dr. Zubair |
| 14 | 4/5/2014 | Restorations Failure and Repair II |
| 15 | 11/5/2014 | Post Restorative Pain and Hyper-sensitivity | Dr. Inas El-Ghandour |

**Topics Description**

* Introduction and assignment Distribution
  + Get the Student familiar with the new syllabus, regulations and evaluation procedure
  + Distribute the assignments
* Contemporary Esthetic Restorative Procedure
  + Esthetic perception
  + Esthetic parameters and consideration
  + Causes of esthetic defects
  + Objectives of restoring esthetics
  + Limitation and problems
  + Color: parameter, perception, measurement and matching
  + Restorative esthetic options
  + Esthetic cavity design
  + Solving some esthetic problems
  + Vital Bleaching: considerations, indications, types and technique
* Adhesion in Restorative Dentistry
  + Indications and advantages of adhesive Dentistry
  + Adhesion mechanism
  + Factors affecting adhesion
  + Adhesion to enamel Vs adhesion to dentin
  + Moist Vs dry dentin surface
  + Challenges facing an ideal adhesive bond
    - Microleakage
    - Hypersensitivity
  + Requirements for an ideal bonding agent
  + Classification of bonding system
  + Clinical significance
  + Adhesion strategies and technique
  + Amalgam bonding, ceramic bonding and GIC
* Indirect Esthetic Restoration
  + Indications for indirect restorations
  + Classification
  + Indications, Contraindication and clinical technique for indirect resin composite inlays/onlays
  + Technique of fabrication (indirect Resin composite inlays/onlays)
    - Direct
    - Indirect
    - Flexible model technique
  + Advantages and Disadvantages of Resin composite inlays/onlays
  + Types of ceramic inlays/onlays
    - Castable ceramics
    - Using a Refractory die
    - Ceromers
    - CAD/CAM
    - Celay
    - Prefabricated
  + Cementation of indirect restoration
  + Porcelain Veneers
    - Indications and contra indications
    - Clinical technique
    - Delivery and cementation
    - Finishing
* Restoration of Mutilated Teeth
  + Definition
  + Challenges of restoring a mutilated teeth
  + Causes of mutilation
  + Sequel
  + Treatment options and steps
* Plea of Conservatism & Atraumatic restorative Dentistry
  + Rational behind conserving tooth structure and periodontium
  + Extension for prevention Vs more conservative approach
  + Lesion detection and diagnosis
    - Tools to detect early lesions
    - Assessing lesion activity
    - Assessing caries risk and risk factors
  + Minimally invasive cutting instrument
  + Non-surgical Vs surgical treatment
  + Conservative cavity designs
  + Atrumatic Restorative Treatment
* Pin Retained Amalgam Restorations
  + Indications
  + Pin-retained Vs Pin-reinforced
  + Types of pins available
    - Cemented pins
    - Self-threaded pins
    - Friction-grip pins
    - Posts
  + Clinical steps ; cavity preparation and restorations
  + Pin-retained Composite resin
* Restorations Failure and Repair
  + Criteria for successful restoration
  + Causes of failure
  + Failure manifestation
    - Failure of Amalgam restorations
    - Failure of indirect restoration; cast and tooth-colored
    - Failure of Resin composite restorations
    - Failure of Glass-ionomer restoration
  + Indications for restoration repair
    - Repair of Amalgam restoration
    - Repair of indirect restoration; cast and tooth colored
    - Repair of Resin composite restoration
  + Indication for restoration replacement
    - Replacing Amalgam restorations
    - Replacing tooth-colored restorations
* Post Restorative Pain and Hyper-sensitivity
  + Pulp respond to different stimuli
  + Pain Vs Hyper-sensitivity
  + Causes of post-operative pain
  + Different theories of post-operative sensitivity (hydrodynamic , thermal shock )
  + Different ways to prevent post-operative pain and hyper sensitivity
  + Ways to control resin-composite shrinkage
  + Cavity sealers, liners and bases

**Topics ILO’s**

These are list of the intended learning outcome the student should achieve upon completion of the course:

* Adhesion in Restorative Dentistry
  + Describe the importance of adhesion dentistry and the unique technique utilized to achieve it.
  + Discuss the adhesion mechanisms, each indication, advantages and withdraws.
  + Explain the factors affecting adhesion and how to deal with each factor.
  + Explain and understand the need for different bonding systems e.g.: dentin Vs enamel bonding systems.
  + Classify the bonding system available.
  + Describe different adhesion strategies and techniques.
  + Revise the use of bonding system with amalgam restoration, ceramics and GICs.
  + Utilize the knowledge provided to achieve better bonding techniques clinically.
* Contemporary Esthetic Restorative Procedure
  + Discuss the need of esthetic treatment and its impact upon patients.
  + Understand the different esthetic treatment modalities.
  + Be able to analyze the esthetic need of patients.
  + List the available esthetic treatment options available; describe each and how to imply them.
  + Be able to design a treatment plane and make a dissension on which treatment modalities more suitable in different scenarios.
* Indirect Esthetic Restoration
  + Describe the indication and contraindication of indirect restoration.
  + Discuss the classification and different fabrication techniques.
    - Resin Composite inlays/onlays
    - Ceramic
    - Veneers
  + Explain the clinical, fabrication and cementation techniques.
* Restoration of Mutilated Teeth
  + Define the causes and challenges of mutilation.
  + Discuss the sequel of mutilation.
  + Explain different treatment modality.
  + Be able to analyze mutilated case and make a decision on how to proceed with treatment.

* Plea of Conservatism & Atraumatic restorative Dentistry
  + Analyze the rationale behind conserving the tooth structure and periodontium.
  + Compare between different cavity designs used in the past and recent.
  + List the different technique used to detect and diagnose carious lesions.
  + Discuss the advanced technology in prepaaring and restoring cavities to achieve conservatism.
* Pin Retained Amalgam Restorations
  + Explain the rational and indications, advantages and disadvantages of pin retained amalgam restoration.
  + Describe the different types of pin system and the technique of use for each.
  + Describe the clinical steps utilized when preparing a pin-retained amalgam restoration.
* Restorations Failure and Repair
  + Assess and predict the success ability of restorations.
  + Analyze the causes of failure and its manifestation.
  + Be able to decide when to repair or replace a failed restoration.
  + Explain different repair techniques.

* Post Restorative Pain and Hyper-sensitivity
  + Analyze the pulp response to different simulation and the way this is utilized to prevent/minimize post-operative pain and sensitivity.
  + Compare between the manifestation and causes of pain and hypersensitivity.
  + Be able to discus and utilize the different technique to minimize the post-operative sensitivity.
  + Recite techniques to minimize resin composite restoration shrinkage as a way to minimize sensitivity.
  + Explain the use of cavity sealers, liners and bases to minimize/prevent post-operative pain/sensitivity.

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| 3. Additional private study/learning hours expected for students per week.  4 |

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| 4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy |

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|  | **NQF Learning Domains**  **And Course Learning Outcomes** | **Course Teaching**  **Strategies** | **Course Assessment**  **Methods** |
| **1.0** | **Knowledge** | | |
| 1.1 | Evaluate the need for esthetic modification and intervention | * Lectures * Literature-review Seminars | * Two Quizzes * Final exams composed of MCQs & essays. |
| 1.2 | Differentiate between different modalities to alter patient smile and meet the patient esthetic needs |
| 1.3 | Describe vital bleaching process |
| 1.4 | Recognize the concept and techniques utilized in dental adhesion. |
| 1.5 | Identify conservative esthetic procedures. |
| 1.6 | Describe the management techniques for discolored teeth. |
| 1.7 | Describe indications, contraindications, advantages, disadvantages and treatment modalities used to restore vital mutilated teeth. |
|  | Describe clinical techniques for indirect esthetic restorations |
| 1.8 | Relate the concept of conservatism and a-traumatic treatment to dental restorative practice |
| 1.9 | Explain the mechanisms of failure of various restorative dental materials. |
| 1.10 | Relate post operative and sensitivity to the corresponding restorative techniques |
| 1.11 | Describe the criteria for success and failure of restorative procedures. |
| **2.0** | **Cognitive Skills** | | |
| 2.1 | * Differentiate key findings. | * Lectures * Assignments * Clinical supervision | * Graded Quizzes * Topic Seminar Presentations * Assignments * Final exams |
| 2.2 | \* Compose a sequential treatment plan to correct different esthetic derangements. |
| 2.3 | * Differentiate between simple and advanced restorative techniques. |
| 2.4 | * Interpret facts, compare and contrast alternative procedures or materials. |
| 2.5 | * Selects appropriate procedures or treatment. |
| 2.6 | * Judge tooth restorability. |
| 2.7 | * Formulate treatment plan to manage badly broken down vital teeth |
| 2.8 | * Solve problems using appropriate skills or techniques. |
| 2.9 | * Analyze the causes of restoration failure and ways to avoid it and repair modalities |
| 2.10 | * Use professional and scientific context both in writing and verbal. |
| 2.11 | * Select proper esthetic restorative treatment, direct/indirect. |
| **3.0** | **Interpersonal Skills & Responsibility** | | |
| 3.1 | * Communicate effectively and respectful with patients, clinical staff and colleagues. | * Clinical practice supervision * Group assignment * In class moderated discussion | * Assignment Presentation. * Practical Requirements. * Observation and Continuous Assessment by the Instructors. |
| 3.2 | * Work as part of the team. |
| 3.3 | * Acquire professional and respectful manner in the clinic, lecture rooms and outside. |
| **4.0** | **Communication, Information Technology, Numerical** | | |
| 4.1 | * Assess the quality of published articles to use their conclusions in clinical practice. | * Assignment. * E-learning resources. * Online discussion sessions. | * Graded assignment. * Statistical evaluation of online access use. |
| 4.2 | * Use provided online-resources effectively. |
| **5.0** | **Psychomotor** | | |
| 5.1 | * Manage Patient complaint professionally. | * Clinical tutorials. * Supervised clinical practice. | * Clinical-performance evaluation weekly * Requirement count * Final clinical examination |
| 5.2 | * Perform proper patient examination. |
| 5.3 | * Plan efficient and sequential treatment plan. |
| 5.4 | * Deliver proper aesthesia technique. |
| 5.5 | * Use caries detection methods and equipments |
| 5.6 | * Perform proper advanced operative procedure and cavity preparation. |
| 5.7 | * Manipulate and apply direct restorative materials adequately. |
| 5.8 | * Perform different restorative esthetic procedure. |
| 5.9 | * Apply conservative concept through restorative procedures. |

**General Rules**

In order to pass the course, the student should achieve a cumulative minimum of 60% in the didactic component as well as a cumulative minimum of 60% in the clinical component

Student must score a minimum of 60% in clinical requirements in order to sit in the final written examination

The students will not be awarded marks for attendance

Student with an absence of 25% or more will not be allowed to sit for the final examination, and there for would be required to repeat the course

**Assignment Rules**

Assignments will be announced through the blackboard with the due dates, late submission will deduct from the intended grade

Groups of student for the final presentation assignment will be assigned randomly at the time of the announcement

**Clinical Continuous assessment:**

The grade assigned for the requirements is 25% of the total grade, which is divided to 20% and 5% as follow:

* An average percentage is going to be calculated for the student clinical performance during the course, this percentage is going to be calculated out of the 20%
* Any student exceed the 60% of the clinical points required will gain and extra 1% for each 10% increase in points (maximum 4%)
* 1% is gained for the variety of cases seen by the student

**Clinical Requirement:**

A minimum of 260 points is assigned for fulfillment in accordance to the following distribution scheme. A minimum of 10 class II restorations and 8 anterior restorations are required. Submitting the logbook with complete requirements is a prerequisite for having the final examination.

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| TYPE OF RESTORATION | CASE | POINTS |
| AMALGAM or RESIN COMPOSITE | Buccal pit | 5 |
| Class V | 5 |
| Simple occlusal | 10 |
| OB or OL | 10 |
| OM or OD | 15 |
| MOD , cases with special difficulty( amalgam build up or large resin composite restorations) | 25 |
| RESIN COMPOSITE | Class III or Class V | 10 |
| Class IV | 15 |
| METALIC OR NON-METALIC | Inlay /onlay restoration | 25 |

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| 5. Schedule of Assessment Tasks for Students During the Semester | | | | |
|  | Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.) | Week Due | Proportion of Total Assessment | |
| 1 | Assignment 1 | 4 | 3% | Continuous Assessment  60% |
| 2 | Exam 1 | To Be Announced | 10% |
| 3 | Assignment 2 | 8 | 3% |
| 4 | Exam 2 | To Be Announced | 10% |
| 5 | Assignment 3 | 11 | 3% |
| 6 | Final Project Presentation | 15 | 6% |
| 7 | Clinical Continuous Assessment | Weekly | 25% |
| 8 | Final Clinical Exam | 14 & 15 | 20% | Final Assessment  40% |
| 9 | Final Written Exam | 17 | 20% |

**D. Student Support**

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| 1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (Including amount of time teaching staff are expected to be available each week)   * + Each faculty has two academic session per week each of 2 hrs   + Scheduled online discussion session is available weekly   + All participating faculty are available in the clinic range of 1 to 4-5 students |

##### E. Learning Resources

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| 1. Required Text(s)   * Fundamentals of Operative Dentistry A Contemporary Approach \_ 3rd edition (2006), by James B. Summitt, J. William Robbins, Thomas J. Hilton, Richard S. Schwartz, et al. * Sturdevant's Art and Science of Operative Dentistry (Roberson, Sturdevant's Art and Science of Operative Dentistry)(2006), by Theodore Roberson, Harold O. Heymann , Edward J. Swift. |
| 2. Essential References   * Esthetic and Restorative Dentistry: Material Selection and Technique\_2nd Edition (2013),Douglas A. Terry and Willi Geller. * Fundamentals of Color: Shade Matching and Communiation in Esthetic Dentistry(2011), Stephen J. Chu, Alessandro Devigus, Rade Paravina and Adam Mieleszko. * Dental Caries: The Disease and Its Clinical Management (2008),Ole Fejerskov and Edwina Kidd |
| 3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)   * Will be posted by corresponding faculty on the course blackboard page |
| 4-. Electronic Materials, Web Sites etc   * Will be posted by corresponding faculty on the course blackboard page |
| 5- Other learning material such as computer-based programs/CD, professional standards/regulations |

**F. Facilities Required**

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| Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.) |
| 1. Accommodation (Lecture rooms, laboratories, etc.)   * Lecture room * Dental Clinics * Computer Lab |
| 1. Computing resources  * Black-board access * UD e-Library * Computer Lab |
| 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)   * Dental Clinics * Computer Library |

**G Course Evaluation and Improvement Processes**

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| * + - 1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching * Faculty e-mails are provided * Course evaluation questioner |
| * + - 1. Other Strategies for Evaluation of Teaching by the Instructor or by the Department * Self-Assessments statistics * Course evaluation questioner |
| * + - 1. Processes for Improvement of Teaching * e-learning supporting virtual classes and clinics * Periodic statistical evaluation of student performance in the clinic |
| * + - 1. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) * Clinical-performance evaluation weekly * Assignment evaluation * Periodic statistical evaluation of student performance in the clinic * Exams and quizzes * - Hands-on assessments |
| * + - 1. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.   The course is evaluated via:   * Course evaluation questioner * Faculty peers feed back   Feedback is collected and statistically analysed by the quality deanship, a report then is sent to the department and the course coordinator. The department chair then meet with the course coordinator and the faculty if needed to suggest improvements needed then final approval. |

**Faculty or Teaching Staff: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date Report Completed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Received by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Dean/Department Head**

**Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**