**KING SAUD UNIVERSITY**

**College of Dentistry**

**Department of Restorative Dental Sciences**

**Division of Dental Biomaterials**

RDS 233

DENTAL BIOMATERIALS SCIENCES II

COURSE DIRECTOR:

Dr. Alaa Elaraby (DUC)

**2014G [1434-1435 H]**

RDS 233

DENTAL BIOMATERIALS SCIENCES II

COURSE DESCRIPTiON

This two credit hour course is offered for second year dental students. It continues **where RDS 132** left off and logically progresses from direct restorations through indirect restorations.

It provides basic information about:

* Direct and indirect restorative materials, bonding agents, and the new field of “Adhesive Dentistry.”
* Impression materials and gypsum products.
* Step-by-step casting procedure along with the required dental materials.
* Ceramo-metallic and ceramic materials.

 The indirect restorations section will be completed with a presentation of temporary and permanent dental cements, including the most recent developments of resin cements.

 The course will be completed with teaching basic prosthodontic, endodontic, periodontic, and orthodontic materials. This will be followed with a presentation of the special considerations related to dental implant materials and their designs.

COURSE GOALS AND OBJECTIVES

 Upon completion of this course, the dental student should be able to:

1. Use the basic knowledge learned in RDS 132 to describe fundamental strengths and weaknesses of each material,
2. Characterize each material as to its proper selection and intended use,
3. Describe each material’s correct manipulation and the technical considerations for doing so, and
4. List laboratory and/or clinical advantages and disadvantages for each material.

COURSE ORGANIZATION

 The lectures in this course are sequenced so that the student may gain greater understanding of dental biomaterials as the course progresses. Every opportunity will be taken to provide preclinically and clinically relevant information so that the student may optimize the use of his or her knowledge of dental biomaterials in RDS 233, in other courses, and throughout his or her professional life.

To achieve optimum learning, it is important that the student come prepared to each lecture. The student should complete the scheduled reading assignments prior to coming to class.

EXAMINATIONS

 To motivate the student to meet this task, two assessment examaminations, per each semester, worth 10 points each, will be given throughout the course. Each exam is scheduled at a specific date which will be announced at the beginning of the year. The exam will consist of multiple choice, true-false, and short answer questions covering the lecture material and reading assignments. The results of the four assessments will be worth of 30% of the final grade. Written Assignments or internet-based reports may be requested by the end of each topic to help students improve their performance.

Tow end of semester examinations, using the same format as the assessments, will be given and will be worth 70% of the final grade.

COURSE GRADING

4 Assessment Exams 30%

1 End of first semester Examination 35%

1 End of Second semester Examination 35% Written Assignments to be evaluated depending on

 studends' and needs for improvement of their grads --------------

 100%

**ASSIGNED TEXT BOOK**

* **Dental Materials and their selection by William J O’brien. Fourth edition**
* **Lecture notes**

**Lecture Schedule for Second Semester**

**Tuesday, 1:00-2:00 pm**

**Tuesday, Lab. Session 2:00 pm- 4:00 pm**

|  |  |  |  |
| --- | --- | --- | --- |
| **LECTURE** | **DATE** | **TOPIC** | **LECTURER** |
| **1** | **Jan. 28, 2014** | **Revision** | **Dr. Alaa** |
| **2** | **Feb. 04, 2014** | **Denture Base Resins I**  | **Dr. Alaa** |
| **3** | **Feb. 11, 2014** | **Denture Base Resins II**  | **Dr. Alaa** |
| **4** | **Feb. 18, 2014** | **Dental Gypsum Products**  | **Dr. Ihab** |
| **5** | **Feb. 25, 2014** | **Investment Materials**  | **Dr. Ihab** |
| **6** | **March 04, 2014** | **Dental Waxes**  | **Dr. Ihab** |
| **7** | **March 11, 2014** | **Lost Wax Technique** | **Dr. Ihab** |
|  |  | **Third Assessment Exam\*** | **Dr. Alaa** |
|  | **March 18, 2014** | **Dental Casting Alloys: Noble Alloys** | **Dr. Alaa** |
|  | **March 21-29, 2014** | **Mid-term Break** |  |
| **8** | **April 1, 2014** | **Dental Casting Alloys: Base-Metal & Soldering Alloys** | **Dr. Alaa** |
| **9** | **April 08, 2014** | **Ceramic Materials I** | **Dr. Alaa** |
| **10** | **April 15, 2014** | **Ceramic Materials II** | **Dr. Alaa** |
|  |  | **Fourth Assessment Exam\*** | **Dr. Alaa** |
| **11** | **April 22, 2013** | **Finishing & Polishing Materials & Procedures** | **Dr. Alaa** |
| **12** | **April 29, 2013** | **Endodontic, Periodontic Materials** | **Dr. Ihab** |
| **13** | **May 06, 2013** | **Orthodontic Materials** | **Dr. Alaa** |
| **14** | **May 13, 2013** | **Dental Implant Materials** | **Dr. Alaa** |
| **15** | **May 20, 2013**  | **Final preparation for end of year exam** | **Dr. Alaa** |
| **1** | **June 01, 2013** | **Final Exam** | **Dr. Alaa** |

**\* Date to be arranged**

Lab Schedule for Second Semester Saturday, 9:00 am- 12:00 noon

|  |  |  |  |
| --- | --- | --- | --- |
| Lab | DATE | TOPIC | LECTURER |
| 1 | Jan., 2014 | Demonstration on manipulation of amalgam, cements and impression materials | Dr. Alaa –Dr. Ihab |
| 2 | Feb., 2014 | Demonstration on manipulation of dental gypsum products  | Dr. Alaa –Dr. Ihab |
| 3 | Feb., 2014 | Demonstration on different types of dental waxes  | Dr. Alaa –Dr. Ihab |
| 4 | Feb. , 2014 | Demonstration on types and steps of Investment Materials and techniques | Dr. Alaa –Dr. Ihab |
| 5 | Feb., 2014 | Revision and answering questions about Lost Wax Technique | Dr. Alaa –Dr. Ihab |
| 6 | Mar., 2014 | Visiting college main production lab to demonstrate the Casting of dental alloys  | Dr. Alaa –Dr. Ihab |
| 7 | Mar., 2014 | Students projects( ppt , discussion)  | Dr. Alaa –Dr. Ihab |
|  | Mar. , 2013 | Demonstration on types Denture Base Resins  | Dr. Alaa –Dr. Ihab |
|  | Mar., 2014 | Mid-term Break |  |
| 8 | Mar., 2014 | Visiting college main production lab to demonstrate flasking steps for construction of Dentures  | Dr. Alaa –Dr. Ihab |
| 9 | April, 2014 | Visiting college main production lab to demonstrate steps for construction of Ceramic restorations and watching videos about ceramics | Dr. Alaa –Dr. Ihab |
| 10 | April, 2014 | Students projects ( ppt , discussion) | Dr. Alaa –Dr. Ihab |
| 11 | April, 2014 | Demonstration on types Finishing & Polishing Materials & Procedures | Dr. Alaa –Dr. Ihab |
| 12 | April, 2014 | Demonstration on types Endodontic, Periodontic Materials | Dr. Alaa –Dr. Ihab |
| 13 | May, 2014 | Demonstration on types Orthodontic Materials | Dr. Alaa –Dr. Ihab |
| 14 | May 11, 2014 | Students projects (ppt , discussion) | Dr. Alaa –Dr. Ihab |
| 15 | May 18, 2014  | Final preparation for end of year exam | Dr. Alaa –Dr. Ihab |