DEN6407C Preclinical Operative Dentistry II
Summer 2021

Course Description:
This is the second course in a series of three courses that introduce fundamental concepts of operative dentistry emphasizing biomaterials science and its clinical application. Minimally invasive dentistry principles, direct and indirect restorative materials/technique and ergonomics will be introduced focusing on development of psychomotor skills, self-assessment, and clinical judgment.

I. General Information
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Course Credits: 3

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Prerequisite course:

Preclinical Operative Dentistry I is a prerequisite for this course.

Successful completion of this course is required to progress to DEN6408C. It is a required pre-requisite; a student may not continue in the next course in a series if they do not successfully pass or successfully remediate the prior course.

Successful completion of this course is also required before any student is permitted to provide patient care in the TEAMs Clinics (DMD clinical courses), clinical rotations involving patient care, offsite rotations that require providing clinical patient care, and volunteer opportunities involving direct provision of patient care. Students may be permitted to assist and take radiographs with authorization from the Associate Dean for Clinical Affairs and Quality Assurance.

At the discretion of the Dean, in rare circumstances the student may be allowed to enroll in the next level (insert as applicable operative, prosthodontics, etc) course without successful completion of the prerequisite if it is determined to be in the best interest of the student, and with the expectation that the prerequisite will be successfully completed as soon as possible.

II. Course Goals

To acquire the necessary knowledge about the foundational principles and to develop the psychomotor skill necessary for, the restorative treatment of Class II and Complex Class II carious lesions using resin-based composite, amalgam, and gold. Preparations and restorations will focus on the principles of minimally invasive cavity preparation, dental anatomy, occlusion, the properties of the each of the dental materials presented, and the indications and contraindications for each of these materials.

III. Course Overview

This course will be divided into three modules:

Module 1 - Class II Composite Restorations
This module will focus on simple and complex class II tooth preparations and the use of different resin-based composite materials as direct restorative materials.

Module 2 - Class II Amalgam Restorations
This module will focus on simple and complex class II tooth preparations and the use of dental amalgam as a direct restorative material.

Module 3 - Inlay and Onlay Gold Restorations
This module will focus on complex tooth preparations and the use of gold as a restorative material.

IV. Course Outline

Module 1 – Class II Composite Restorations
a) Principles of Class II Preparations
b) Class II Restorations Using Resin-Based Composite Material  
c) Light Curing – Part II  
d) Bulk Fill and Flowable Composite Materials  
e) Pulp Protection and Material Selection  
f) Principles of Complex Class II Preparations for Composite Restorations  
g) Complex Class II Restorations using Resin-Based Composite Material

**Module 2 – Class II Amalgam Restorations**  
a) Amalgam as a Restorative Material  
b) Principles of Class I and Class II Amalgam Preparations  
c) Class I and Class II Restorations using Amalgam  
d) Principles of Complex Class II Preparations for Amalgam  
e) Complex Class II Restorations using Amalgam  
f) Repair and Replacement of Existing Restorations

**Module 3 – Inlay and Onlay Gold Restorations**  
a) Gold as a Clinical Restorative Material/Principles of Gold Restorations  
b) Selection of Direct Restorative Materials

**V. Course Material**

Textbooks¹:


¹Textbooks are electronically available through Dental Lib Guide: [http://guides.uflib.ufl.edu/dental](http://guides.uflib.ufl.edu/dental)

Other Resources:  
Course presentations, reading assignments, and handouts will be posted in Canvas.  
[http://lss.at.ufl.edu](http://lss.at.ufl.edu)

**VI. Course Objectives**

**Module 1 – Class II Composite Restorations**
- Define the principles of Class II tooth preparations.  
- Compare and contrast Black’s principles of cavity preparation to the contemporary approach of minimally invasive composite preparations.  
- Describe the characteristics and physical properties of the different resin-based restorative composite materials.  
- Discuss the indications, contraindications, and limitations of the use of the different resin-based composite materials presented.  
- Explain the protocols for restoring with resin-based restorative composite materials.
• Discuss the need and the use of different pulp protection materials according to different clinical situations.
• Discuss the indications and procedures for repairing versus replacing restorations.
• Demonstrate the psychomotor ability to prepare a Class II preparation according to specified measurements on any posterior tooth in the oral cavity.
• Demonstrate the psychomotor ability to create an antotomically correct Class II resin-based composite restoration according to specified guidelines on any posterior tooth in the oral cavity.
• Discuss the principles of tooth preparation for Complex Class II preparations.
• Discuss the indications, contraindications, and limitations of the use of resin-based restorative materials for Complex Class II restorations.
• Explain the protocols for restoring complex preparations with resin-based restorative composites.
• Demonstrate the ability to prepare a Complex Class II preparation according to specified measurements on any posterior tooth in the oral cavity.
• Demonstrate the psychomotor ability to create an antotomically correct Complex Class II resin-based composite restoration according to specified guidelines on any posterior tooth in the oral cavity.

Module 2 – Class II Amalgam Restorations
• Describe the characteristics and physical properties of dental amalgam.
• Discuss the indications, contraindications, and limitations of the use of the dental amalgam as a direct restorative material.
• Define the principles of tooth preparation for Class II amalgam preparations.
• Explain the protocols for restoring with dental amalgam.
• Demonstrate the ability to prepare a Class II amalgam preparation according to specified measurements on any posterior tooth in the oral cavity.
• Demonstrate the ability to create an antotomically correct Class II amalgam restoration on any posterior tooth in the oral cavity.
• Define the principles of tooth preparation for Complex Class II amalgam preparations.
• Demonstrate the ability to prepare a Complex Class II amalgam preparation according to specified measurements on any posterior tooth cavity.
• Demonstrate the ability to create an antotomically correct Complex Class II amalgam restoration on any posterior tooth in the oral cavity.
• Compare and contrast the principles of amalgam and composite tooth preparations.

Module 3 – Inlay and Onlay Gold Restorations
• Define the principles of tooth preparation for gold inlay/onlays.
• Demonstrate the ability to prepare any posterior tooth for a gold onlay according to specific measurements.
• Compare and contrast the indications, contraindications, and limitations of the use of resin-based composite materials, dental amalgam, and gold for Class II and Complex Class II restorations.
• Assess different clinical scenarios and determine the most appropriate treatment for each situation. Provide a rationale for your decisions.
VII. Course Competencies:

This course teaches the following competency in the "Competencies for the New Dental Graduate"
Domain VI: Patient Care
B. Establishment and Maintenance of Oral Health
17: Provide oral health care within the scope of general dentistry to include restoration of teeth.

VIII. Evaluation

Evaluation of student performance will consist of two written examinations, seven to ten quizzes, eight psychomotor examinations, and five homework projects.

1) Written Quizzes and Examinations

Quizzes: There will be five to eight quizzes given related to content necessary to prepare students for any lecture or laboratory exercise. A quiz should be expected following every reading assignment and online lecture. There are no make-up quizzes. One quiz grade will be dropped instead. If a student misses a class for any reason, that quiz will be the one dropped. The quiz with the lowest score will be dropped from each student's accumulated quiz total when determining course final grades.

Written Examinations: There will be two written examinations. These exams will cover all course material, including lectures, assigned book chapters, articles, laboratory instructions, and group discussions given up to the respective exam date. At this point in the curriculum, students are expected to have a working knowledge of the information and material presented in Preclinical Operative I and Biomaterials, Cariology, and Dental Anatomy. Any of this information may be incorporated into a patient box, critical thinking, or higher level question on either examination.

Missed written examination(s) will require a doctor’s note and if excused and according to the course directors discretion, the make-up exam will be either an essay or oral examination. The make-up examination must be scheduled within two business days of the missed exam or the student’s return to school. The highest attainable grade on a missed exam is an 85%.

All quizzes and written examinations will consist of multiple choice, T/F, matching, or short answer type questions.

2) Psychomotor Skill Examinations

There will be a total of eight psychomotor examinations. These examinations will require tooth preparations and/or restorations using resin-based composite and dental amalgam (see details below). These exams will be evaluated to measure learning and psychomotor skill development as it relates to the basic skills necessary in general and restorative dentistry. These exam grades will be included in determining the psychomotor grade and the final course grade.

Psychomotor Exams 1 & 2 – Class II Preparation and Class II Composite Restoration (1 hour preparation/2 hours restoration)
Psychomotor Exam 3 & 4 – Complex Class II Preparation and Complex Class II Composite Restoration (1 hour preparation/2 hours restoration)
Psychomotor Exam 5 & 6 – Class II Amalgam Preparation and Class II Amalgam Restoration (1 hour preparation/1 hour restoration)
Psychomotor Exam 7 & 8 – Complex Class II Amalgam Preparation and Complex Class II Amalgam Restoration (1 hour preparation/2 hours restoration)

The grade of each psychomotor exam will be determined by the average of points received, which will be converted into a percentage as determined by the Operative Division Psychomotor Grade Scale. An orderly decision-making process evaluates student performance. Procedural items are scored 4, 3, 2, or 1 against defined criteria.

- A 4 indicates that the criteria was met at an ideal level.
- A 3 indicates that the criteria was met at an acceptable level.
- A 2 indicates that modifications are necessary to achieve an acceptable level.
- A 1 indicates that the outcome was measured to be at an unacceptable level.
- For each criterion an evaluative modifier (+) can be assigned to a 1, 2, or 3 grade to indicate that the student identified an error prior to faculty evaluation. Proper terminology and specific locations of all errors must be noted by the student on the assessment form. General non-specific statements will not justify a (+) modifier. A modifier adds 0.25 points in that category.

A “1” or “1+” score on any of the criteria on a psychomotor exam will result in a failing grade. The percentage assigned is 65% or the actual percentage score, whichever is lower when a score of 1 is given. The percentage assigned is 70% or the actual score, whichever is lower when a score of 1+ is given. Points are calculated as follows:

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<thead>
<tr>
<th>Score</th>
<th>Points</th>
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<tr>
<td>4</td>
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<tr>
<td>3</td>
<td>3</td>
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<td>2</td>
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A score of 2.5 is considered a passing score and equals 72%.

Students will receive a grade of 0 on a psychomotor exam for any of the following:
1. Changing or removing any teeth during or after a psychomotor examination. (Dental anatomy allows the student to take the tooth out while waxing but teeth cannot be changed or replaced during the exam.)
2. Working on the dentoform in any manner that is unnatural (such as upside down, placing the upper arch in the lower arch position and vice versa).
3. Not placing the dentoform on the cart immediately after the exam ends.
4. Working on the dentoform outside of the manikin for a manikin exam.
5. Missing a tooth or teeth adjacent to the exam tooth/teeth.
6. Remove the tooth/teeth or dentoform and leave the exam room with it/them.
7. Not completing the work on the exam teeth given on the date of the examination.

Students will lose 50 points off on the psychomotor exam grade if they:
1. Prepare or restoring the wrong tooth.
2. Do not have all teeth in the dentoform.
Missed psychomotor examination(s) will require a doctor’s note and if excused and according to the course directors discretion, the make-up exam will likely be on different teeth and surfaces. The make-up examination must be scheduled within two business days of the missed exam or the student’s return to school. The highest attainable grade on a missed exam is an 85%.

**Daily Laboratory Formative Feedback.** Daily projects will be assessed by the student first and then by the faculty. The intent is to teach the student to self-assess their work accurately in order to help identify gaps in skill and/or knowledge and target areas that need improvement. Students are required to complete all assigned daily projects and return the *Routine Sheet* by the end of the course in order to complete the course.

**Assigning Grades***
The final course grade will be determined based on the following three components.

1. **Didactic component - 40%**
   - Written Exam 1: 15%
   - Written Exam 2: 15%
   - Quizzes: 10%

2. **Psychomotor component - 55% (psychomotor exams)**
   - Psychomotor 1: 6.875%
   - Psychomotor 2: 6.875%
   - Psychomotor 3: 6.875%
   - Psychomotor 4: 6.875%
   - Psychomotor 5: 6.875%
   - Psychomotor 6: 6.875%
   - Psychomotor 7: 6.875%
   - Psychomotor 8: 6.875%

3. **Homework - 5%**
   - Homework 1 Class II Preparation: 1%
   - Homework 2 Class II Preparation: 1%
   - Homework 3 Class II Restoration: 1%
   - Homework 4 Class II Preparation: 1%
   - Homework 5 Gold Onlay Preparation: 1%

The final grade can be affected by unexcused absences, tardies, academic variances, sanctions, and dress code violations.

**To pass this course, the student must:**
- pass at least 5 of the 8 psychomotor examinations (at least 2 of them must be a preparation examination and 2 of them a restoration examination).
• have a final grade of 72% or above and must also pass BOTH the didactic and psychomotor components independent of one another with a score of 72% or higher.

Information concerning course failure and remediation is listed below.

Attendance, Adherence to the Dress Code, and Professional Conduct are Mandatory. The following adjustments will be made to the final course grades:

**Attendance**
- 5% will be deducted from the final grade for each lecture or lab missed without an excused absence.
- 5% will be deducted from the final grade for every three unexcused instances of tardiness.
- 5% will be deducted from the final grade if the daily project sheet is not turned in to the course director by the due date established by the course director.

**Adherence to the Dress Code.** Students must adhere to the dress code as spelled out in the Pre-doctoral Student Handbook and Clinic Procedure Manual while enrolled in any course in the College. It is applicable at all times including, lectures, exams, quizzes, and laboratory sessions. Failure to comply with the dress code will result in a reduction in your final course grade as follows:

- **1st Offense** - Student will be asked to leave the class and warned
- **2nd Offense** - Student will be asked to leave the class and a 5% reduction in your final course percentage will be imposed
- **3rd Offense** - Student will be asked to leave the class and an additional 5% (10% total for dress code) reduction in your final course percentage will be imposed
- **4th Offense** - Student will be asked to leave the class and an additional 5% (15% total for dress code) reduction in your final course percentage will be imposed
- **5th Offense** - Student will be issued an "E" grade in the course

**Professional Conduct.** The College of Dentistry expects all dental students to be professional in their dealings with patients, colleagues, faculty and staff. All students are expected to abide by the UF Code of Conduct [https://sccr.dso.ufl.edu/wp-content/uploads/sites/4/2020/12/Orange-Book-Web-Version-2020.pdf](https://sccr.dso.ufl.edu/wp-content/uploads/sites/4/2020/12/Orange-Book-Web-Version-2020.pdf). The University principles address our respect for people and property, for fairness, for Laws and Regulations, and for academic integrity. Nothing in this Regulation shall be interpreted to limit the constitutional or statutory rights of any Student, including but not limited to expressive rights protected by the First Amendment.
1. Respect for people and property. Students are encouraged both to conduct themselves in a manner that exemplifies respect for all people and property and to adhere to their personal values without imposing those on others.
2. Respect for fairness. Rules and established procedures are intended to ensure both fundamental fairness and an educational experience for Students and Student Organizations.
3. Respect for Laws and Regulations. Students are expected to follow all applicable Laws and Regulations.
4. Respect for academic integrity. Academic honesty and integrity are fundamental values of the University. Students commit to holding themselves and their peers to the high standard of honor required by the Student Honor Code. Any Student who becomes aware of a violation of the Student Honor Code is encouraged to report the violation to the appropriate University Official.
Students are expected to be prepared for all lecture and laboratory sessions. They are expected to complete self-assessment forms, follow all guidelines and instructions in the classroom, simulation laboratory, junior/senior laboratory, or during online sessions (which include dress code, use of iPods, headphones, etc.). Professional students are expected to attend all assigned sessions in an attempt to get the most out of every learning opportunity. This includes staying the entire session, working diligently during the lab session, etc.). Any student professional misconduct observed during lectures, exams, quizzes, and laboratory sessions will result in a Professional Variance (see Pre-doctoral Student Handbook), and reporting of the incident to the Student Honor Code Administration. Conduct issues are often accompanied by sanctions that are determined by the course director in conjunction with the department chair and the Dean of Students or their designee.

The grades for the final written exam, psychomotor exam, and final course grade will not be posted at the end of the semester, until 70% of students have completed the faculty evaluations.

Remediation and Reassessment

Reassessment
Students who fail a psychomotor exam are required to participate in a reassessment process at the end of the course. The reassessment will not change the previous grade obtained in the psychomotor exam. Reassessment is required since students are expected to complete all of the restorations taught in this course while providing patient care. It is essential that the skill be demonstrated at an acceptable level before advancing to the next course and before providing patient care. A passing grade on all reassessment examinations is mandatory before progressing to the next course in the series or to a clinical course.

Remediation
Students failing the course will be awarded an "E" grade, referred to the Student Performance Evaluation Committee (SPEC), and be placed on academic probation. The student must meet with the course director to develop a remediation plan within one week of the notification of the failing final grade. The remediation activities are at the discretion of the course director. Faculty are available to assist students as they prepare for this examination, but the responsibility for learning the material resides with the student. The time, place, content, and passing grade of the remediation program will be individualized for each student and arranged by the course director. Please note that remediation activities are often best completed during student break weeks in order to keep the student on track with other courses the following semester.

The highest grade attainable in a remediated course is a "D". Students failing to satisfactorily complete the remediation program will maintain the "E" grade and will automatically be referred to SPEC. For more information refer to the Administrative Practices Section K: Remediation.

Please note that if the course director determines that the student failed the coursework to such an extent that remedial activities would be inadequate to attain an acceptable level of academic achievement in the course material, the course director can elect not to provide remediation.

IX. Grade Scale
Please note that there is no rounding in Canvas.
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<thead>
<tr>
<th>Grade</th>
<th>Minimum</th>
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<tr>
<td>E</td>
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**X. Administrative Practices**

Administrative practices for all UFCD courses are universally applied. Exceptions to or deviations from these practices are stated in the individual syllabi by the course director. When not individually stated in the syllabus, course administrative practices default to those identified under "Course Policies" on the DMD Student Website: [https://dental.ufl.edu/education/dmd-program/course-policies/](https://dental.ufl.edu/education/dmd-program/course-policies/)

For further information on any of the practices listed below, consult the [UFCD Student Handbook](https://catalog.ufl.edu/UGRD/academic-regulations/attendance-attendance-).