DEN6213C: Fundamentals of Occlusion
Course Semester: Summer 2021

Course Description:
This course covers topics related to the knowledge of dental materials used for impression making, cast making and basic concepts of dental occlusion. The student will develop an understanding of ideal occlusion form and function.

I. General Information

Course Director: Margarete C Ribeiro Dasilva
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Phone: (352) 273-5850
Course Credits: 3
Semester: Summer
Office Hours: *Include at least 1 hour of office hours per week and also post next to your office door.*

Contributing Faculty

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Support Staff

Name	Phone	Email	Role in the course
Margeaux C Johnson	(352) 273-9618	margeaux@dental.ufl.edu	ID
Elaina Buono	(352) 273-5850	ebuono@dental.ufl.edu	Grade Administrator

Prerequisite course: None

II. Course Goals

This course is an introduction to fundamental concepts of dental occlusion. Occlusion means how teeth mechanically interact with each other, with jaw joints (TMJ), and with periodontal tissues. An understanding of these interactions is critical for successful treatment within many disciplines of dentistry, including restorative dentistry, orthodontics, periodontics, and for the treatment of patients with TMJ pain. Thus, one of the goals of this course is to provide you with foundation knowledge in occlusal relationships for the clinics in these disciplines.

Occlusion requires an understanding of three-dimensional mechanical relationships. This course is a unique opportunity to develop analytical skills on problems of mechanical interactions within the stomatognathic system.

Occlusal factors cannot be analyzed comprehensively by clinical exam alone. It is useful to duplicate the patient's situation on a simulator where mechanical relationships can be more easily visualized. Dentists routinely use such simulators, which are known as articulators. In this course, we will use articulators to create a standardized training environment for studying occlusal concepts. In other words, we will use articulators as a teaching tool.

III. Course Overview

The course consists of:

(1) **Lectures and reading assignments**
These materials, many of which will be offered online, will provide foundational knowledge.

This course will use a series of lectures, preclinical laboratory exercises and clinical sessions to develop a basic concept of occlusion. Students will be provided lectures about the clinical use and importance of occlusion in different disciplines of Dentistry. Students will learn about fundamentals of occlusion and some aspects of occlusal dysfunction and temporomandibular disorder (TMD).

Lectures:
The didactic portion on the course will introduce the students to the basic concepts in dental occlusion and terminology like: occluding surfaces, mandibular positions, envelope of movement, centric relation, centric occlusion, maximum intercuspation, the application of occlusion in the various practices of dentistry.

Electronic Announcements:

Students may periodically receive electronic messages on bulletin boards, via Canvas Announcements, or by email. It is the student's responsibility to update your email address and set up Canvas notifications. Students must use Gatorlink email and are responsible for email sent whether they open it or not.

(2) **Clinic Sessions and Preclinical laboratory exercises**

Clinical solutions to occlusal pathology will also be reviewed. Students will take alginate impressions on student partners, pour those impressions in stone, trim and mount them. Students will learn about variation in occlusion, anterior guidance and how to create an anterior guidance model using their own casts.

At the conclusion of this course, keep these models in a secure place as you will use them in your future courses in the fall semester.

Exercises:

Mounting casts in Maximum Intercuspation and Centric Relation will show the students the different options and their clinical applications in dental restoration.

Evaluating balanced occlusion in models and a comparison to a clinical case will allow the students to develop the understanding of normal and organic and pathologic occlusion.

Clinics:

Two clinics experiences for each student will expose the students to the practical world of dentistry. They will learn to set a dental unit including practice of the standard universal infection control measures.

Students will learn how to manipulate an impression tray and take upper and lower alginate impressions. They will pour the impressions with stone. They will learn to use Facebow to mount the Maxillary cast. The lower model will be hand articulated in maximum intercuspation ICP using one of the interocclusal records (blu mousse). Also the student will learn how to replicate their cast and mount the second model in Centric Relation.

Dental materials and instruments:

Casts of dental arches, designed to illustrate specific mechanical relationships, will be used as teaching aids. Dental instruments and materials, some provided by the college, others by you, are needed throughout the course. The students are responsible for ensuring that instruments used for **clinical activities** are sterile.

(3) **A case presentation at the end of the course**
This will give students the opportunity to apply the concepts during the course and present their knowledge as a group

This course is a pre-requisite:

- Successful completion of this course is required to progress to DEN6412C: Fixed Prosthodontics I, DEN6415C: Fixed Prosthodontics II, DEN6460C: Complete Dentures, DEN7413: Removable Prosthodontics, and DEN7411:Implant Dentistry. ***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 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.

Philosophical considerations and guidelines:

What is the role of the student in this course?

Attend all activities and come prepared!!! Read the material before class, watch the online lecture and recommended videos, visit the clinics in your free time, go over previous lectures, ask questions during the zoom meeting for questions and answers, or email course director!!

Reading assignments and lectures, will give you basic background facts. Dentistry is more than knowledge of facts, it is also know-how, cognitive and psychomotor skills. The instructors will give you how-to-do instructions for technical procedures and you will then have the opportunity to practice them to develop your skills. Factual knowledge and skills may be what it takes to become a tradesman. It takes more to become a healthcare professional: compassion, respect for others, the desire to give your patients the best. A courteous respectful attitude and appearance, punctuality during all sessions, conscientious attention to detail, constant desire to learn (rather than to accumulate grade points) are some of the indicators of these attributes.

What is the role of your instructors in this course?

We are your senior colleagues, who will share with you their experience and thus facilitate your learning. We get satisfaction from your success and happiness in your chosen profession and thus they want you to succeed. However, instructors must ensure that unqualified, unprofessional individuals do not enter the dental community. This is why there are hurdles (e.g., exams) to be taken and requirements to be met in order for you to pass this course.

IV. Course Outline

Topical Content Outline :

1. Anatomical relations between the Jaws
2. Mandibular positions and movements
3. Introduction to the articulator
4. Centric stops and projection points
5. Excursive pathways
6. Types and properties of stone
7. Mounting casts on the articulator
8. Alginate properties and handling
9. Taking alginate impressions
10. Pouring alginate impressions
11. Differences between Centric relations and Intercuspal position
12. Indications for different type of mounting
13. Mounting models in Maximal Intercuspation
14. Classifications of Occlusion
15. Clinical aspects of occlusion and occlusal trauma
16. Variation of occlusion
17. Anterior guidance
18. Overview of Temporomandibular Disorder

V. Course Material

1. Dawson, P.E. Functional Occulsion From TMJ to Smile Design, Mosby Elsevier, 2007- Limited seat e-version in HSC Dental Library Guide.
2. Okeson, Jeffrey P. *Management of Temporomandibular Disorders and Occlusion*, Elsevier, 2012. ProQuest Ebook Central.

3. Electronic Atlas of Human Occlusion & the TMJ. Version 1.0, eHuman, Brown & Herbranson imaging (Educational license cost $279 with code UF2021)

Dental Lib Guide: http://guides.uflib.ufl.edu/dental

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

VI. Course Objectives

1. Recognize which upper and lower occlusal surfaces are contacting in maximum intercuspation and during tooth-guided movements.
2. Demonstrate mandibular movements and positions that are produced and guided by the teeth.
3. Describe the mechanical relationship between posterior teeth, anterior teeth, and the temporomandibular joint.
4. Predict the approximate location of mediotrusive (balancing) and laterotrusive (working) occlusal interferences.
5. Discuss how an articulator can simulate mandibular movements and positions and programming the articulator, when needed.
6. Simulate tooth-guided movement by using an articulator with an anterior guidance table.
7. Discuss the interaction between condylar guidance, anterior guidance, and the guidance table.
8. Determine when an occlusal surface has the proper form
9. Obtain maxillary and mandibular impressions with alginate and with irreversible hydrocolloid.
10. Pour impressions for diagnostic casts; trim the casts using the guidelines provided; and using the face-bow and a wax interocclusal record, mount the casts in maximum intercuspation and Centric Relation.

VII. Course Competencies:

The following competencies are taught in this course:

Domain I: Critical Thinking
3: Apply biomedical science knowledge in the delivery of patient care.

Domain VI: Patient Care

A. Assessment, Diagnosis, and Treatment
12: Patient Assessment, Diagnosis, Treatment Planning and Informed Consent: Provide oral health care within the scope of general dentistry to include patient assessment, diagnosis, comprehensive treatment planning, prognosis, and informed consent.

VIII. Evaluation

Evaluation of student performance will consist of:

Lab Exercises and Clinic Attendance*	0% (S/U)
Quizzes (10 quizzes-top 8 count)	35%
Case Presentation	25%

Final Exam	40%

***Lab and clinic attendance is mandatory.** These are skills and concepts that require active participation and critical thinking. There will not be a grade assessment, however you have to get the code for diagnostic impression, facebow, bite registration and cast entered in the Axium. You have to get these codes card swiped and approved by the supervising faculty

To pass this course one must achieve a final grade of 72% or greater.

Written Examinations

This exam will be in the form of application-oriented multiple-choice questions, and may include true-false and short-answer questions, as well as identification of drawings and design drawing. The exam questions will be based upon the assigned text, media, exercises and lectures. In the event of conflicting statements between texts and lectures the material presented in the lectures will be considered correct.

Tests are cumulative and will cover all instruction (articles, clinics, demonstrations, handouts, labs, lectures, manuals, models, reprints, textbooks, etc.) up to that point in time.

Written Quizzes

After reading the textbook and watching the online Lecture, you will take a quiz about the topic covered in the online lecture. The quiz will assess your knowledge of the reading assignment and the online lecture, so it is a good idea to use the lecture slides to prepare. There will be 10 quizzes with 8 counting towards the final quiz score

Assigning Grades

The final course grade will be determined based on the following:

Lab Exercises and Clinic Attendance*	0% (S/U)
Quizzes (10 quizzes-top 8 count)	35%
Case Presentation	25%
Final Exam	40%

***Lab and clinic attendance is mandatory.** These are skills and concepts that require active participation and critical thinking. There will not be a grade assessment, however you have to get the code for diagnostic impression, facebow, bite registration and cast entered in the Axium. You have to get these codes card swiped and approved by the supervising faculty

To pass this course one must achieve a final grade of 72% or greater.

Important: There will be no make-up quizzes. Two quizes can be dropped.

Missed written examinations will require a doctor's note and if excused, the make-up exam will be either an essay or oral examination. The make-up examination must be scheduled within 2 business days of the missed exam or the student's return to school. The highest attainable grade on a missed exam is an 85%.

***To pass this course, the student must have a final grade of 72% or above and must also pass BOTH the didactic and lab/clinic components, each with a score of 72% or higher.**

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 Department of Restorative Dental Sciences. 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 . 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 and final course grade will not be posted at the end of the semester, until 70% of students have completed the faculty evaluations.

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.

A	95 -	100
A-	90 -	94.99
B	86 -	89.99
B+	82 -	85.99
B-	80 -	81.99
C+	74 -	79.99

C	72 -	73.99
E	<72	

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/

For further information on any of the practices listed below, consult the UFCD Student Handbook and UF Attendance Policies, catalog.ufl.edu/UGRD/academic-regulations/attendance-

This syllabus is intended to give the student guidance in what may be covered during the semester and will be followed as closely as possible. However, the professor reserves the right to modify, supplement and make changes as the course needs arise."