Course Description:

This course introduces fundamental concepts related to the disease of dental caries, including its prevention, diagnosis and appropriate management. Emphasis is also placed on the preventive aspects of other oral diseases as well as on dental public health and nutritional sciences.

I. General Information

Course Director:

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Phone: (352) 273-5858
Course Credits: 2
Semester: Spring

Contributing Faculty

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II. Course Goals

The main goal of this course is to provide dental students with the theoretical and practical foundations of Cariology and Preventive Dentistry. This course provides a bridge between the basic and behavioral sciences and the clinical practice of dentistry. In addition, the course focuses on maintenance of oral health and preservation of tooth structure through a disease management philosophy that is evidence-based and patient-centered, and comprises risk-based prevention and reassessment of outcomes at regular intervals over time.

Course Learning Goals:

1. Understand the biological processes involved in the caries process.
2. Detect and diagnose the disease of dental caries at the patient and tooth levels.
3. Learn how to assess a patient's risk for caries.
4. Understand the importance of preventive dentistry.
5. Get familiar with approaches for invasive and non-invasive management of caries.
6. Get familiar with the relationship between nutrition and oral health.

III. Course Overview

The course utilizes lectures, laboratory and clinical exercises in order to support the development of critical thinking and clinical skills using a rational scientific basis.

IV. Course Outline

1. Introduction to Cariology and Preventive Dentistry
2. Caries Etiology: the role of saliva, diet and oral hygiene
3. Caries Etiology: the role of microbial biofilm and pH
4. Nutrition and oral health
5. Histopathology of dental caries
6. Pulp and dentin biology: reactions to caries
7. Caries detection and diagnosis
8. Differential diagnosis of caries
9. Radiology of dental caries
10. Caries risk assessment
11. Caries Management: non-invasive and invasive options
12. The role of fluoride therapy
13. Patient motivation
14. Preventive strategies for special populations
15. Dental sealants
16. Operative intervention and management of carious tissues

V. Course Material

Recommended textbooks:

2. Pulp-Dentin Biology in Restorative Dentistry" by Ivar A. Mjor, Quintessence books, 2002.

Other Resources:

- Course lectures and handouts will be posted on ECO
- ADA Center for Evidence-based Dentistry, Clinical Practice Guidelines

Additional Resource:

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

VI. Course Objectives

Students must be able to demonstrate and apply knowledge and understanding of the following aspects of the practice of dentistry:

1. **Dental Caries**
   - Correlate the biological, medical, basic, and applied clinical sciences related to dental caries
   - Describe the contributing factors in the disease of caries and their interrelationship with tooth, saliva, diet and systemic factors
   - Recognize the clinical aspects and classifications of caries and other dental hard tissue disorders
   - Discuss the prevention, diagnosis, and management of caries
   - Describe the importance of caries risk assessment and management based on caries risk
• Discuss disease management options including invasive and non-invasive therapies
• Identify indications and techniques for removal of carious tissues during restorative treatment

2. Preventive Dentistry

• Describe health, primary prevention, secondary prevention, and tertiary prevention
• Identify the importance of behavioral sciences including the psychological, sociological, and socioeconomic factors underlying interpersonal skills, communication, and behavior modification
• Define motivation and different approaches to motivate individuals to change behavior
• Describe available evidence-based, at-home and in-office preventive strategies
• Formulate the planning of oral disease prevention and treatment programs
• Discuss strategies for reducing the prevalence of dental caries and/or periodontal disease
• Describe dental "target populations"
• Discuss the unique needs of specific target populations for preventive dental strategies: pregnancy and infancy, adults (including women's health) and geriatrics populations with medical conditions/diseases developmental disabilities

3. Nutrition and Oral Health

• Describe the fundamentals of nutrition and oral health, nutrients, nutrition through the life span
• Identify nutrients needed by humans and their major functions in the body and oral structures
• Describe the processes of food digestion, absorption, and nutrient utilization as they relate to oral health
• Articulate the relationships between diet and the prevention and treatment of oral diseases throughout the life cycle
• Discuss nutrition-related oral complications arising from major diseases
• Evaluate food labels for cariogenic and anti-cariogenic components, understand nutrition claims and how they relate to your patients
• Evaluate patient diet and understand how to educate a patient on improving diet for better oral health or disease prevention

VII. Course Competencies

This course contributes to teaching to the following competencies.

• **Domain II:** Health Promotion and Maintenance - Educate patients and the community, based upon scientific inquiry, critical thinking and outcomes assessments, about the etiology of oral disease. Promote preventive interventions and effectively work with
patients and other health care professionals to achieve and maintain a state of optimal oral health through evidence-based care.

- **4. Critical Thinking**: Apply self-assessment, evidence-based decision making, problem solving skills and biomedical science knowledge in clinical patient care.
- **5. Assessment of Treatment Outcomes**: Analyze the outcomes of patient care, previous treatment appropriate recall and best evidence to improve and maintain oral health.

- **Domain III**: Health Assessment – Recognize systemic diseases, substance and patient abuse and evaluate the patient’s medical and oral condition, plan treatment needs and refer, when appropriate.
  - **9. Examination of the Patient**: Perform an evidence-based comprehensive patient evaluation to include patient history including medications, chief complaint(s), medical, oral and extraoral conditions, biological, behavioral, cultural, socioeconomic information and consultations(s) to assess the patient’s prognosis and treatment risks.
  - **10. Diagnosis**: Interpret and correlate findings from the patient history, interview, clinical and radiographic examinations, and other diagnostic tests to accurately assess patients with special needs and for all other patients across the lifespan determine a differential, provisional, or definitive diagnosis.

- **Domain IV**: Health Rehabilitation – Using universal infection control guidelines and managing the patient’s anxiety and pain, perform procedures and restore the patient to oral health or refer appropriately.
  - **13.**: Prescribe and/or apply clinical and/or home therapies for the management of dental caries and monitor their effect on the patient’s oral health.
  - **16.**: Manage conditions requiring surgical procedures of the hard and soft tissues.

This course teaches the following competencies in the "*Competencies for the New Dental Graduate*".

**Domain I: Critical Thinking**

1: Critical Thinking: Use critical thinking and problem-solving, including their use in the comprehensive care of patients, scientific inquiry and research methodology.  
2: Evidence-Based Patient Care: Access, critically appraise, apply and communicate scientific and lay literature as it relates to providing evidence-based patient care.  
3: Apply biomedical science knowledge in the delivery of patient care.

**Domain IV: Health Promotion**

9: Health Promotion & Disease Prevention: Provide oral health care within the scope of general dentistry to include health promotion and disease prevention.
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.

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.
20: Provide oral health care within the scope of general dentistry to include periodontal therapy.

VIII. Evaluation

Evaluation in this course includes written exams, quizzes, and a group video presentation.

**Grade Weights:**

- Written Exam I - 30%
- Written Exam II - 30%
- Written Exam III - 30%
- Quizzes - 5%
- Group Video - 5%
- **FINAL GRADE = 100%**

*In order to pass this course, students must achieve a final grade of 72% or above and must meet all the criteria described below. Failure to do so will result in an “E” grade for the entire course.*

**Quizzes.** There will be a minimum of three quizzes scheduled in this course, which will cover reading assignments and materials related to course lectures, laboratories and clinical sessions up to the quiz date. Each quiz will last approximately 10 minutes. The lowest quiz grade will be dropped from each student's accumulated quiz total when determining the final course grade. If a student misses a quiz for any reason - that quiz will be the one dropped. There are no make-up quizzes.

**Written Exams.** There will be a total of three written exams, one for each of the course modules. The exams will have between 40-50 questions and will cover all course material included on each course module, except for exam 3, which may include all course materials. All written exams will selectively use questions of multiple choice, true/false, and short essay answers. Missed examinations will require a doctor’s note and excused granted by the course director. If excused, the make-up exam will be either an essay or oral examination. The make-up exam must be taken within 2 business days of the missed exam or the student’s return to school. **The highest attainable grade on a make-up exam is 85%.**
Honorlock will proctor your exams this semester. Honorlock is an online proctoring service that allows you to take your exam anywhere. You DO NOT need to create an account, download software or schedule an appointment in advance. Honorlock is available 24/7 and all that is needed is a computer, a working webcam, and a stable Internet connection. To get started, you will need Google Chrome and to download the Honorlock Chrome Extension. You can download the extension at www.honorlock.com/extension/install. When you are ready to test, log into the LMS, go to your course, and click on your exam. Clicking Launch Proctoring will begin the Honorlock authentication process, where you will take a picture of yourself, show your ID, and complete a scan of your room. Honorlock will be recording your exam session by webcam as well as recording your screen. Honorlock also has an integrity algorithm that can detect search-engine use, so please do not attempt to search for answers, even if it's on a secondary device. Honorlock support is available 24/7/365. If you encounter any issues, you may contact us by live chat, phone (844-243-2500), and/or email (support@honorlock.com). If you encounter issues within the LMS, you may contact Your School's Online Support Services team at their number.

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 routine sheet is not returned complete by the 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 Division of Operative Dentistry. 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** - You will be asked to leave the class and warned
- **2nd Offense** - You will be asked to leave the class and a 5% reduction in your final course percentage will be imposed
- **3rd Offense** - You will be asked to leave the class and a 10% reduction in your final course percentage will be imposed
- **4th Offense** - You will be asked to leave the class and a 15% reduction in your final course percentage will be imposed
5th Offense - You will be issued an "E" grade in the course

Professional Conduct. The College of Dentistry expects all dental students to be professionals in their dealings with patients, colleagues, faculty and staff. Behavior of a dental student reflects on a student’s qualification and potential to become a competent dentist. In addition, for each lecture and laboratory session, students are expected to: be prepared, complete the self-evaluation forms, follow all guidelines and instructions (which includes dress code, use of iPods, headphones, etc.), and put forth an excellent effort (stays the entire session, works diligently during the lab session, etc.). Any student professional misconduct observed during lectures, exams, quizzes, and laboratory sessions will result in an Academic Variance Form (see Pre-doctoral Student Handbook), and 5 points will be deducted from the final course grade for each academic variance issued.

The grades for the final written exam as well as the final grades will not be posted in Canvas until 70% of students have completed the end of course and faculty evaluations.

Remediation. Students failing the course will be awarded an "E" grade, referred to the Student Performance Evaluation Committee (SPEC), and automatically 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. 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 be referred to SPEC for consideration for dismissal or retracting. 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. 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-polices/
**X. Grade Scale**

**DEN5502C Grade Scale**

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<td>Tolerance</td>
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<table>
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