DEN7411C: Overview of Implant Dentistry

Fall 2020

Course Description:

Curriculum provides basic knowledge concerning biological and scientific basis for implant treatment, including patient evaluation, diagnosis, treatment planning, implant selection, implant surgery, post surgical care, implant prosthodontic procedures and maintenance protocols. Course goals include development and understanding of the history and past status of implant dentistry, scientific basis of implant-host relations, and diagnosis, treatment planning, and treatment along with maintenance procedures.

I. General Information

Course Director:

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Course Credits: 2  
Semester: Fall

Contributing Faculty

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II. Course Goals

The educational goal of this preclinical course is to introduce, promote and enhance the knowledge and skills necessary to perform implant-based procedures on your patients. Clinical practice involving dental implants requires the application of fundamentals that meet the biological, mechanical, and esthetic requirements of each patient situation. This course will enhance your diagnostic skills and provide indications for referral and the development of the 'team' concept. This course will cover diagnosis and treatment planning, and treatment of patients from a multi-disciplinary perspective. Therefore, the principles of total patient care will be developed along with the clinical and dental laboratory procedures. The faculty involved in this course look forward to your participation and education and are excited to be part of this course.

We will be primarily using pre-recorded lectures available through Mediasite in Canvas. One advantage of this approach is that you may view the lectures at your convenience. It is also possible to speed up the presentation and re-play sections, if this would enhance your learning experience. We will be using the Canvas Discussion section so that you may pose questions which will be answered for the entire class. You may also submit questions by email, but the response may take more time. I am also willing to meet with you by Zoom, individually or collectively, at a convenient time.

III. Course Overview

This is a lecture based course with three preclinical laboratory exercises (implant placement guides, Straumann components, Astra components).

IV. Course Outline

A. History and development of dental implants
B. Diagnosis and patient assessment for implant patients
C. Treatment planning the partially edentulous patient
D. Template fabrication for implants patients
E. Physical diagnosis for implant patients
V. Course Material

Suggested Readings

Suggested readings are listed below. Each is available through the UF Health Sciences Library online (go to E-journals), except for the articles in Int J Oral Maxillofac Surgery.

- Salinas TJ, Eckert SE. In patients requiring single-tooth replacement, what are the outcomes of implant- as compared to tooth-supported restorations? Int j Oral Maxillofac Implants 2007:22 suppl:71-95
- Torabinejad M, Anderson P, Bader J, et al. Outcomes of root canal treatment and restoration, implant-supported single crowns, fixed partial dentures,


Optional resource:
HSC Dental Library Guide
ITI Academy Classroom - optional powerpoints/videos about implant treatment

VI. Course Objectives

Through lecture and laboratory exercises the faculty will encourage you to develop your level of understanding and logic as they relate to your planning and treatment of patients requiring dental implants. Through this course students will be able to:

A. History and development of dental implants
   - 7411 001. Describe the history and development of modern dental implants.
   - 7411 002. Distinguish and recognize implant surfaces and materials and their biologic relevance, with emphasis on the interface between bone and currently used dental implants.
   - 7411 003. Recognize the term ‘osseointegration’ and protocols designed to achieve and maintain it.

B. Diagnosis and assessment of dental implant patient
   - 7411 004. Describe and perform the extra and intra-oral examination processes utilized for dental implant patients.
   - 7411 005. Identify and authorize the various radiographic procedures available to implant patients with particular emphasis on accuracy and advantages.
   - 7411 006. Recognize the local anatomy and associated physiology of the proposed implant sites
   - 7411 007. Describe the current surgical classifications of bone for regions of the mouth (edentulous and partially edentulous patients)
• 7411 008. Identify and describe the regional anatomic landmarks intrinsic to the planning of implant treatment in the respective jaws

C. Treatment planning the partially edentulous patient
• 7411 009. Given abutment options, the student will identify the indications, advantages and disadvantages of each
• 7411 010. Recognize the clinical and laboratory procedures associated with provisional restorations
• 7411 011. Identify factors involved in the inter-disciplinary planning of the partially edentulous patient
• 7411 012. Identify factors involved in the inter-disciplinary planning of the single tooth space

D. Planning and fabricating radiographic and surgical implant templates
• 7411 013. Describe how to plan and fabricate radiographic and surgical templates for completely and partially edentulous patients
• 7411 014. Describe the laboratory techniques involved in the fabrication of radiographic and surgical templates

E. Diagnostic risk and assessment
• 7411 015. Identify the general medical and dental indications and contra-indications to dental implant related treatment
• 7411 016. Describe the medical assessment of dental implant patients and possible sources of complication
• 7411 017. Recognize the biologic reactions of tissues to implant surgery and implant materials
• 7411 018. Distinguish 'contact area' and 'bone-implant contact' – with reference to implant success

F. Treatment planning the edentulous patient for dental implants
• 7411 019. Describe and understand factors involved in the inter-disciplinary planning of the completely edentulous patient
• 7411 020. Identify the effects of cantilevers and guidelines for cantilever length
• 7411 021. Describe the term passivity and methods of attaining it
• 7411 022. Discriminate among the effects of varying implant number and occlusal scheme
• 7411 023. Identify the materials available for prosthesis fabrication and the factors involved in selection of each
• 7411 024. Identify and describe factors involved in the inter-disciplinary treatment of patients requiring implant supported and/or retained overdentures
• 7411 025. Identify the restorative alternatives for completely edentulous patients
• 7411 026. Describe impression procedures and master cast fabrication for edentulous implant patients
• 7411 027. Identify inter-occlusal and other records required for edentulous implant patients
• 7411 028. Recognize the different occlusal philosophies associated with dental implants and complete edentulism
7411 029. Describe factors associated with combining dental implant and conventional restorative treatment
7411 030. Recognize the 'team' concept of dental implant therapy, with particular reference to the comprehensive treatment planning of patients
7411 031. Describe the timing and techniques associated with pre-implant extractions will be discussed in detail for the esthetic and non-esthetic site
7411 032. Communicate with the surgical and laboratory team members by way of guides (surgical), casts, the written word and photographs

G. Surgical placement of dental implants
7411 033. Recognize the procedures involved in the surgical placement of dental implants, including anesthetic, sedation alternatives, antibiotic choices and analgesics
7411 034. Recognize and describe the step-wise placement of dental implants
7411 035. Describe the post-surgical care necessary who receive dental implants

H. Biology of tissue-implant surface
7411 036. Describe, in detail, the biomechanical influences on the state of osseointegration and its maintenance.
7411 037. Recognize the similarities and differences between periodontal disease associated with teeth and diseases of the periodontium surrounding implants
7411 038. Describe the initiation and progression of periodontal disease, and the specific microbial characteristics of the disease as it relates to dental implants
7411 039. Recognize the effects of systemic disease on the condition of the periodontal tissues, and the tissues ability to tolerate the rigors of implant based care
7411 040. Recognize the implications of immediate implant placement (in both extraction sockets and grafts)
7411 041. Describe the implications of macroscopic implant design on the reaction of bone to implants, emphasis being placed on the position of 'gaps' and 'restorative margins'

I. Restorative options
7411 042. Identify the restorative alternatives for partially edentulous patients
7411 043. Identify and describe different abutment systems and components
7411 044. Describe impression procedures and master cast fabrication for partially edentulous implant patients
7411 045. Recognize the different occlusal philosophies associated with dental implants and partial edentulism

J. Anterior tooth replacement
7411 046. Identify the restorative alternatives for single missing anterior teeth
7411 047. Describe impression procedures and master cast fabrication for patients with single missing teeth
7411 048. Identify inter-occlusal and other records required for implant patients with single missing teeth
7411 049. Recognize the different occlusal philosophies associated with dental implants and single missing teeth

K. Soft and hard tissue augmentation
• 7411 050. Describe soft tissue enhancement and the relationship with esthetic results, along with the interrelationship between teeth and implants
• 7411 051. Describe guided bone regeneration and other grafting procedures
• 7411 052. Identify aspects of smile design and the interaction between soft tissue and implant dentistry
• 7411 053. Distinguish ridge augmentation techniques available for the dental implant patients, including bone grafting techniques

L. Esthetic diagnosis and treatment for dental implant patients
• 7411 054. Recognize factors associated with esthetic diagnosis and treatment planning for patients requiring dental implants

M. The use of CAD-CAM technology in esthetic implant treatment
• 7411 055. Describe alternative abutment and applications using computerized scanning and milling procedures
• 7411 056. Describe advantages and disadvantages of using computerized scanning and milling procedures

N. Periodontal maintenance of dental implants
• 7411 057. Describe the mechanical periodontal therapy of implant patients, including the patient typified by the presence of both teeth and dental implants and those with only dental implants
• 7411 058. Identify the pharmacological aspects of periodontal therapy

VII. Course Competencies

This course teaches to the following competencies in the "Competencies for the New Dental Graduate".
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.
17. Provide oral health care within the scope of general dentistry to include restoration of teeth.
18. Provide oral health care within the scope of general dentistry to include communicating and managing dental laboratory procedures in support of patient care.
19. Provide oral health care within the scope of general dentistry to include replacement of teeth including fixed, removable and dental implant prosthodontic therapies.

VIII. Evaluation

Students will be evaluated using the measures listed below.
Quizzes

There will be four quizzes given during the course. The quizzes will be announced and available during specific dates with a window determined by the Office of Academic Affairs. The quiz format will consist primarily of multiple choice questions and may include photographs, drawings, radiographs, and other visual items. A short answer may also be used for some questions. Quizzes will only cover material from prior lectures, required Mediasite lectures, and/or laboratory sessions which were covered in advance of the quiz. Specific content categories for quizzes will be announced in advance.

The quiz portion of the final grade will be based upon the three highest quiz scores. If you do not take a quiz, a score of “0” will be entered for that quiz. Your quiz average will be based upon your performance in the other three quizzes. Per RDS departmental policy, there will be no make-up quizzes given.

All quizzes will be given using the “lockdown browser” and “honorlock.” It is your responsibility to ensure that your computer has the most recent and updated versions of the software needed to support these two features.

Lab Sessions

Attendance is required at each assigned lab session at the time and date that you have been scheduled. Please contact Dr. Nimmo about any anticipated conflicts for guidance. Since the Orange/Blue groups meet on the same day, it is not possible to schedule an alternative date for the lab, so please make every effort to attend the lab on the scheduled day at the right time. There is no independent laboratory grade. Failure to attend all three lab exercises may result in a course grade reduction of 5%.

Final Written Exam

The final written exam may consist of multiple choice, true-false, and/or short answer questions covering material from all lectures, lab sessions, and the reading. Also questions may include diagrams, radiographs, and/or photos. There will be a short section with questions formatted like the recently revised National Board exam. The final exam will be comprehensive in nature.

A missed final examination will require a doctor's note and if excused, 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% as per RDS department policy.

Please see Dr. Nimmo if you have any questions about your progress or if you are having any difficulties early in the course.
Grade Weights

Quiz average 40% (based upon the three highest scores, with the lowest score dropped)
Final written exam 60%. Per RDS Departmental Policy, a course average of 72% or greater is required to pass this course.

Course Remediation

Remediation for all Department of Restorative Dental Sciences Courses

In order to pass this course, you must meet the above criteria. Failure to do so will result in an “E” grade for the entire course. 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 receiving the failing final grade. The remediation activities are at the discretion of the course director. Faculty are available to assist students preparing for this examination, but the responsibility for learning the material resides with the student. The time and place of the remediation will be arranged individually.

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 recommend that the student repeat the course as the remedial activity.

The grade required to pass the remediation program will be determined by the course director; however, 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 retracking.

A failing grade awarded in any course will remain on the permanent record (when remediation has not been successful).

Professional Conduct

The College of Dentistry expects that all dental students to be professional in their dealings with patients, colleagues, faculty and staff. Professional and ethical conduct is a mandatory qualification for every practicing dentist.

Attendance and adherence to the dress code are mandatory. In addition, for each lecture and laboratory session, students are expected to be prepared, complete the self-assessment forms,
follow all guidelines and instructions (which includes the use of iPods, headphones, etc.) and put forth an excellent effort (work the entire lab session, work diligently and make every effort to get the most out of every session).

Professional misconduct observed during lectures, exams, quizzes, and laboratory sessions will result in an Academic Variance (see Pre-doctoral Student Handbook). Five percentage points will be deducted from the final course grade for each Academic Variance issued.

Faculty Evaluations

“Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://ufl.bluera.com/ufll/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufll/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.”

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-policies/

X. Grade Scale

DEN7411C Grade Scale

Method Letter Grade
Scale 100
Tolerance 0.5 (Final letter grades within this range will be rounded up.)
A 95 - 100
A- 90 - 95
B+ 86 - 90
B 82 - 86
B- 80 - 82
C+ 74 - 80
C 72 - 74
E 0