Dental Science (DENT)

dentalmedicine.uconn.edu

5110. Graduate General and Oral Pathology

Three credits. Prerequisite: Open only to students in dental residency programs.

Builds on the foundational concepts of disease pathogenesis based on a review of specific general pathology topics.

5430. Advanced Oral Histology

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Oral tissues, their embryological origin, histology and function. Structure of developing teeth, alveolar bone, temporo-mandibular joint, oral mucosa, gingiva and salivary glands. Lecture, slide review, and student-led discussions of papers from the research literature.

5431. Advanced Oral Pathology and Diagnosis

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Seminars on current developments in oral disease processes, with an emphasis on the clinical. Student presentations and lectures covering principles of Oral Diagnosis.

5432. Biomaterials for Dental Graduates

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Literature review/seminar covering various subjects of current interest in dental materials. Some prior knowledge of dental materials or of materials science is assumed.

5434. Functional Oral Anatomy

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Anatomic structures and relationships of the head and neck emphasizing surgical anatomy for oral, periodontal and endodontic surgery. Lectures and dissections.

5435. General Pathology

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

5437. Principles of Oral Microbiology and Infections

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Oral flora with emphasis on recent research developments. Ecology of the oral cavity, dental caries and periodontal disease, viral and yeast infections. Prior knowledge of microbiology and biochemistry assumed. Lectures and discussions, term paper required

5438. Craniofacial Growth and Development

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Part of a core series in the postgraduate program of orthodontics. Provides systematic coverage of basics in growth and development of the human face. Review and critique of selected articles from the research literature of the following areas: Physiology of facial growth, theories in growth mechanisms, pre- and postnatal growth of the face, normal and abnormal courses of the facial growth.

5439. Research Methods in Epidemiology and Behavioral Sciences

One credit. Prerequisite: DENT 5456 or equivalent; only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Provides students with an applied understanding of behavioral science research methods, building off of concepts introduced in DENT 5456. Featured topics include: theoretical and methodological issues in research design; data collection strategies, focusing on survey measurement and the design and evaluation of survey questions; population sampling; data entry and variable construction; strategies for analyzing quantitative data, focusing in particular on regression analysis with dichotomous outcomes; and issues in analyzing longitudinal data.

5440. Biodontics: Integrating Biotechnology with Clinical Dentistry

Three credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

The goal of the Biodontics educational program is to explore the process of introduction of biotechnology-based innovations into clinical dentistry. The course will focus on a variety of innovations, including those considered "disruptive," and explore the laboratory and clinical studies underlying their translation from the bench to chairside. The course will also consider the process of "diffusion" of innovations into dental practice and examine the barriers to acceptance by dental office personnel. Students, working in teams, will be required to present a business plan for the development and marketing of a new dental product.

5441. Biomechanics in Dental Science

Four credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Physics and engineering principles applied to clinical and research problems in dentistry. Principles of statics and mechanics of materials. Engineering analysis of orthodontic appliances. Lectures, seminars, and demonstrations.

5442. Biomechanics in Dental Science

One credit. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

History and critical review of orthodontic appliance systems. The relationship between treatment planning and therapy is explored. Detailed biomechanical analysis of appliance therapy. Lectures, seminars and demonstrations.

5443. Biology of Tooth Movement

One credit. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Hard and soft tissue responses to tooth movement caused by orthodontic appliances; theory of related bone resorption and apposition from a morphological and biochemical standpoint. Seminars.

5444. Epidemiology of Oral Diseases: Interpreting the Literature

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Provides a basic understanding of epidemiologic principles to enable the critical review of the literature and to provide a methodological framework with which to better understand basic statistics. An overview of the specific epidemiology of oral diseases will be provided.

5455. Scientific Writing

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

The basics of effective scientific writing in a six-week combined lecture and workshop format. Lectures cover scientific style, clarity in writing, development of hypothesis and organization of abstracts and manuscripts. Guest lectures and workshops provide specific direction in summarizing clinical, laboratory or social/biobehavioral research studies. Students are required to write and revise an extended abstract of their research and to present their abstract in small groups on the final class day.

5456. Biostatistics

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Introduction to biostatistics and overview of key concepts, including data measurement and summarization, probability, populations and samples, drawing inferences, and specific statistical analyses for testing differences in means and proportions, correlation, regression, multivariate analysis, and survival analysis. Special attention is placed upon understanding how to evaluate the appropriateness of and best interpret specific statistical tests and measures. An introduction to study design and the critical review of the literature is provided with emphasis on interpretation of presented statistics.

5457. Evidence Based Dentistry: Critical Reading of System Reviews, Meta-Analyses and Expert Panel Reports

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Provides dental residents with the information necessary to (1) de-mystify the methods typically used under the heading of evidence based dentistry and (2) to be able to critically assess those methods, so as to best be empowered to integrate evidence based information into their day to day practices.

5495. Independent Study

Variable (1-6) credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program. May be repeated for a maximum of 24 credits.

A reading course for those wishing to pursue special topics in dental science under faculty supervision.

5500. Oral and Maxillofacial Diagnostic Imaging and Interpretation Part A

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

The first part of a three-part seminar course examining the interpretation of images produced by various techniques used in the diagnosis of diseases involving the oral maxillofacial complex. Part A emphasizes anatomy seen on intraoral, extraoral and volumetric image acquisition, image appearances of the common dental diseases - caries, marginal periodontitis and apical periodontitis and the pathophysiologic changes that lead to their image appearances.

5501. Oral and Maxillofacial Diagnostic Imaging and Interpretation Part B

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

The second part of a three-part seminar course examining the interpretation of images produced by various techniques used in the diagnosis of diseases involving the oral maxillofacial complex. Part B addresses lesions of bone and soft tissues of the maxillofacial complex, including cysts, neoplasms and lesions that have similar appearances.

5502. Oral and Maxillofacial Diagnostic Imaging and Interpretation Part C

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

The third and final part of a three-part seminar course examining the interpretation of images produced by various techniques used in the diagnosis of diseases involving the oral maxillofacial complex. Part C addresses the appearances on dentomaxillofacial imaging of genetic and acquired abnormalities, systemic diseases, temporomandibular joint disorders, salivary gland disorders and dentomaxillofacial trauma.

5503. Perio-Pathobiology I Part A

One credit. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Allows residents in Periodontology to develop an in-depth knowledge of the periodontal literature as it relates to research and clinical practice. Includes both clinical and basic science covering essential etiology concepts. Taught in a seminar format with all graduate faculty members participating as discussion leaders. Residents are be assigned a group of related articles that should be read and reviewed each week prior to discussion at the scheduled seminar.

5504. Perio-Pathobiology I Part B

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Allows residents in Periodontology to develop an in-depth knowledge of the periodontal literature as it relates to research and clinical practice. Includes both clinical and basic science covering essential etiology concepts. Taught in a seminar format with all graduate faculty members participating as discussion leaders. Residents are be assigned a group of related articles that should be read and reviewed each week prior to discussion at the scheduled seminar.

5505. Perio-Pathobiology II Part A

One credit. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Allows Periodontology residents to develop an in-depth knowledge of the periodontal literature as it relates to research and clinical practice. Gives evidential support to all clinical procedures performed. Taught in a seminar format with all graduate faculty members participating as discussion leaders. Graduate faculty will present and discuss topics in their areas of expertise. Residents will be assigned articles related to the topic of discussion that need to be reviewed each week prior to the scheduled seminar. The assigned literature will be reviewed from a historical perspective with recent updates included as necessary (a separate current literature review will run concurrently). Allow residents to not only develop critical reading and thinking abilities but also aid in developing verbal communication skills and confidence.

5506. Perio-Pathobiology II Part B

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

A continuation of Part A. Allows Periodontology residents to develop an in-depth knowledge of the periodontal literature as it relates to research and clinical practice. Gives evidential support to all clinical procedures performed. Taught in a seminar format with all graduate faculty members participating as discussion leaders. Graduate faculty will present and discuss topics in their areas of expertise. Residents will be assigned articles related to the topic of discussion that need to be reviewed each week prior to the scheduled seminar. The assigned literature will be reviewed from a historical perspective with recent updates included as necessary (a separate current literature review will run concurrently). Allows residents to not only develop critical reading and thinking abilities but also aid in developing verbal communication skills and confidence.

6000. Full Time Residency

Zero credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

Full time residency for dental master's students only.

6461. Clinical Radiation Sciences: Physics and Biology I

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

A continuous pair of semester lecture/seminar courses which examines the physical and biological principles underlying the uses of radiation and allied radiation sciences in clinical diagnosis and therapy. Characteristics of imaging systems, Nuclear Medicine, Radiation Therapy, biological effects of ionizing radiation, radiation measurement and dosimetry and quality assurance will be covered through critical readings in texts and the literature.

6462. Clinical Radiation Sciences: Physics and Biology II

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

A continuous pair of semester lecture/seminar courses which examines the physical and biological principles underlying the uses of radiation and allied radiation sciences in clinical diagnosis and therapy. Characteristics of imaging systems, Nuclear Medicine, Radiation Therapy, biological effects of ionizing radiation, radiation measurement and dosimetry and quality assurance will be covered through critical readings in texts and the literature.

6463. Radiation Physics, Safety and Biology in Oral and Maxillofacial Diagnostic Imaging

Two credits. Prerequisite: Only open to current UConn Health Dental Residents in the combined Certificate/Master of Dental Science Program.

A lecture, seminar and discussion-based course examining the fundamentals of the physics involving the most commonly used diagnostic imaging modalities in oral and maxillofacial radiology. The first part of the course deals with the physics of plain film radiography, panoramic radiography, CT, CBCT, MRI. Fundamentals of digital imaging will also be discussed. The last part of the course deals with radiation safety. Radiation safety measures and guidelines for practicing safe radiation techniques that will minimize the risk for patients and the operators during image acquisition will be discussed.