

# SCHOOL OF DENTISTRY (GRAD)

## Contact Information

### School of Dentistry

<http://www.dentistry.unc.edu>

### Scott S. De Rossi, Dean and Professor

Graduate instruction in the School of Dentistry is offered in dental hygiene education, endodontics, operative dentistry, oral epidemiology, oral and maxillofacial pathology, oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontology, and prosthodontics, as well as in oral and craniofacial biomedicine.

The specialty practice programs — endodontics, operative dentistry, oral and maxillofacial pathology, oral and maxillofacial radiology, orthodontics, pediatric dentistry, periodontology, and prosthodontics — are dual-specialty certificate and master of science degree programs. The minimum requirements for the certificate are prescribed by the Commission on Dental Accreditation of the American Dental Association (CODA) and the respective specialty boards for the approved CODA specialties. The master of science degree is conferred by the University of North Carolina at Chapel Hill Graduate School and requires the successful completion of required coursework, oral and written comprehensive examinations, a research project, and a thesis. Graduates who possess an appropriate degree and who meet the requirements of The Graduate School are considered for admission. Enrollment for study in these specialty programs requires approximately three years of residency. The curricula have been designed to permit maximum flexibility in preparation for practice, teaching, and/or research, as well as to meet the educational requirements of the specialty boards.

Other advanced education programs available within the School of Dentistry include dental hygiene education, oral and craniofacial biomedicine, oral epidemiology, and oral and maxillofacial surgery. The oral and craniofacial biomedicine and oral epidemiology programs lead to the doctoral degree (Ph.D.) and require four or more years to complete. The dental hygiene education program spans two years and is a master of science program designed to prepare dental hygienists for teaching, research, or corporate employment. The oral and maxillofacial surgery program is a six-year dual-degree (M.D.) program with a certificate in oral and maxillofacial surgery.

Information regarding admission, entrance requirements, and/or curricula of a specific advanced education program may be obtained online (<http://www.dentistry.unc.edu/academic>).

## Tuition and Fees

Tuition and fees for Graduate School programs are subject to change at any meeting of the University of North Carolina at Chapel Hill Board of Trustees, and an increase should be anticipated each year. Tuition and fees apply for all years of study and training. Current tuition and fees for in-state and nonresidents may be obtained online (<http://cashier.unc.edu/tuition-fees>). Required instruments, books, computers, and laboratory fees are determined by each program. Tuition and fees are due at the time of registration.

Student loans are available on the same basis as for undergraduates. Additional information can be obtained online (<http://studentaid.unc.edu/types-of-aid/loans>).

## Oral and Craniofacial Biomedicine

Oral and craniofacial biomedicine is a highly translational, multidisciplinary program of study that focuses on the growth, development, and pathologies of the craniofacial complex and associated physiological structures, as well as the study of disease and healing mechanisms related to these structures.

The discipline of oral and craniofacial biomedicine applies and extends the concepts of immunology, embryology, physiology, cellular and molecular biology, neurobiology, pharmacology, microbiology, and biochemistry to understanding the growth and development and pathologies associated with the craniofacial complex and oral cavity. Expertise and authority in the particular concepts of host-pathogen interactions, neurobiology, skeletal biology and extracellular matrices, and cancer are well represented within the program and training qualifications of program faculty located in numerous UNC-Chapel Hill programs and departments, including the School of Dentistry, School of Medicine, Lineberger Comprehensive Cancer Center, the Neurosciences Center, the Center for Cystic Fibrosis, and the Center for AIDS Research.

Attention in dental research and practice is now focusing on the dynamics of oral disease and prevention and treatment at the earliest stages of development, including research on risk factors for disease as well as the cellular and molecular events in disease pathogenesis. Molecular approaches for oral disease analysis and the complexity of disease elements require advanced training in the discipline of oral and craniofacial biomedicine. Modern biomedical research is also identifying systemic relationships between oral conditions, health status, and diseases such as atherosclerosis, HIV, and cancer. The oral cavity also offers an ideal model to study biological structures and cellular mechanisms important throughout the body and important in immune response.

Curricular requirements are based on training areas, with common core requirements for all students. Research interests and qualifications will also determine course requirements. Research is a key element of the program, and students start laboratory rotations during their first semester to allow maximum time for research involvement.

For additional information, consult the School of Dentistry's Web site (<http://www.dentistry.unc.edu>) or write to Meagan Solloway, Graduate Program Manager, Oral Biology Ph.D. Program, School of Dentistry, 3110 First Dental Building, The University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7455. Telephone: (919) 537-3230; Fax: (919) 966-3683.

## Dual Clinical Specialty / Ph.D. Degree Program in Oral and Craniofacial Biomedicine

There is an opportunity for students who have an interest in pursuing a Ph.D. degree in oral and craniofacial biomedicine with The Graduate School to simultaneously pursue a clinical specialty certificate in one of the ADA-recognized specialty programs in the School of Dentistry. This special program is a five-/six-year program that allows the pursuit of the Ph.D. and clinical certificate simultaneously, and results in awarding of

both the Ph.D. and the clinical specialty certificate upon completion of the requirements for both programs.

Applying for this dual program is an option when applying for either the oral and craniofacial biomedicine graduate program or a clinical specialty program in the School of Dentistry. The applicant must indicate an interest in pursuing the dual program at the time of application to the clinical specialty program. Students applying for the dual program must take either the Graduate Record Examination (GRE) OR the Dental Aptitude Test (DAT), but are not required to take both exams.

Students accepted into the dual program will follow a specialized curriculum, which combines scientific and clinical training with research activities designed to promote a career in academic dentistry. Students who successfully complete the program will then be awarded both the Ph.D. and the clinical specialty certificate at the completion of the requirements for both programs.

## Research Facilities

The oral and craniofacial biomedicine graduate program is located in the University of North Carolina–Chapel Hill School of Dentistry. The central base for much of the basic science research in the curriculum is in the Koury Oral Health Sciences Building, with its access to SEM/TEM microscopy, tissue culture facilities, anaerobic microbiology support, ALAC-accredited animal facilities, computers and software for image analyses/enhancement and finite element analyses, and a clinical research unit that includes an eight-patient operator. Biostatistical assistance is readily available as well as medical illustration, photography, radiology, and grants management.

## Financial Aid

Graduate research assistantships are awarded competitively for students accepted into the oral and craniofacial biomedicine Ph.D. program. These competitive assistantships with health insurance provide support through program resources during the first year and may include a special tuition rate for out-of-state students. Support for dissertation research, beginning in the student's second year, is generally made available by faculty mentors. Students are eligible for financial aid through the UNC Office of Scholarships and Student Aid. International students are encouraged to contact International Student and Scholar Services for resource contacts if financial aid is needed.

## Oral Epidemiology

The University of North Carolina at Chapel Hill offers a program leading to a Ph.D. degree in epidemiology under the cooperative auspices of the School of Dentistry's Department of Dental Ecology and the Gillings School of Global Public Health's Department of Epidemiology and Department of Health Policy and Management. The strong, nationally recognized Department of Epidemiology at the Gillings School of Global Public Health has a well-established doctoral program, and oral epidemiology has been taught as part of the program in dental public health for many years. The integration of the wealth of resources in these three departments makes this program unique.

The goal of the oral epidemiology program is to teach students to identify, analyze, and predict changes in oral diseases and conditions. These conditions include dental caries, oral cancer, oral mucosal lesions, periodontal diseases, craniofacial and dentofacial anomalies, and systemic diseases that affect and are affected by oral health. Degree recipients have the academic foundation, advanced knowledge, and skills

needed to conduct, interpret, and evaluate sophisticated epidemiologic investigations and clinical research projects.

Information, including advice regarding applying, can be found at the program's Web site (<http://www.sph.unc.edu/epid>).

## Endodontics

The Department of Endodontics offers a three-year program leading to a certificate in endodontics and a master of science degree. The program is designed to prepare candidates for careers in academics, research, or the clinical practice of endodontics, and for certification by the American Board of Endodontics.

The endodontics graduate program involves an integrated study of biological sciences as they pertain to endodontics, development of the clinical skills required in the broad area of the endodontic specialty, review of classic and current literature in endodontics, teaching experience, research design and methodology, and the development and completion of a research project.

## Oral and Maxillofacial Pathology

The oral and maxillofacial pathology program is a three-year program that awards a certificate in oral and maxillofacial pathology and a master of science degree. The program prepares qualified oral and maxillofacial pathology specialists for positions of responsibility in institutions of higher dental education or research or in private practice. Students develop competence in surgical oral pathology, acquire skills in the clinical management of patients with disorders of the head and neck, gain experience in pathology laboratory management, and develop teaching and research skills for enhancement of an academic career. Upon completion of the necessary requirements each student is eligible for fellowship in the American Academy of Oral and Maxillofacial Pathology and certification by the American Board of Oral and Maxillofacial Pathology.

Applications for admission to the program are made online through The Graduate School ([http://www.gradschool.unc.edu/students\\_prospective.html](http://www.gradschool.unc.edu/students_prospective.html)). Stipends are available, depending upon available resources.

## Oral and Maxillofacial Radiology

The oral and maxillofacial radiology program is a three-year program that awards a certificate in oral and maxillofacial radiology and a master of science degree. The primary goal of the program is to prepare specialists to practice clinical oral and maxillofacial radiology; to provide patient care, teach, and conduct research in an oral health care institution; or to provide patient care in the private practice setting.

The program includes training in radiological sciences (radiological physics, radiation biology, radiation protection, imaging science), clinical sciences (intraoral, extraoral, and cone beam CT imaging; radiographic interpretation of conditions affecting the oral and maxillofacial region), medical sciences (oral and maxillofacial pathology, head and neck anatomy), and research sciences (research design and biostatistics). Each graduate student develops an original research project as an integral part of the graduate program, resulting in a written thesis. The program meets the eligibility requirements of the American Board of Oral and Maxillofacial Radiology.

Applications for admission to the program should be submitted online through The Graduate School's admissions Web site (<http://>

gradschool.unc.edu/admissions). Stipends may be available, depending on available resources.

## Operative Dentistry

The Department of Operative Dentistry offers a three-year program that awards certificate in operative dentistry and a master of science degree granted by The Graduate School. The primary goal of the program is to prepare graduates for careers in dental education and research. The program involves component areas of research, teaching, and patient care. The curriculum includes general core courses, including topics in basic and clinical sciences; a research component, including courses on research design and statistical methods; a clinical component in contemporary operative dentistry; and experiences in preclinical and clinical teaching.

A formal thesis based on a selected research topic is required, including its defense before an examining committee. The department also requires a comprehensive written examination.

Applications for admission to the program should be submitted online through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). Stipends may be available, depending on available resources.

## Orthodontics

The orthodontic postgraduate program at the UNC–Chapel Hill provides a combination of clinical experience in orthodontics and critical thinking and research experience, which leads to a certificate in orthodontics and a master of science degree conferred by The Graduate School. Students in the advanced orthodontic education program are required to demonstrate clinical and professional proficiency as well as to complete the didactic and research components of the M.S. degree prior to graduating. During the program's first year students participate in core courses, attend didactic and clinical seminars, and begin patient care. As the program progresses, didactic seminars gradually yield to research participation, while clinical seminars continue, and the volume of patient care increases. All students must perform satisfactorily on oral and written comprehensive examinations to complete the program successfully.

The orthodontics program offers a 33-month curriculum. Six residents are admitted to begin the program each August. By the second or third year of the program, students are educationally qualified to take the written portion of the American Board of Orthodontics. Successful completion of a research project is required to earn a certificate in orthodontics as well as an M.S. degree.

## Pediatric Dentistry

The department offers a graduate program in pediatric dentistry leading to a clinical certificate in pediatric dentistry and an M.S., M.P.H., or Ph.D. degree awarded by The Graduate School. The minimum program length is 36 months, beginning on July 1 of each year. The program's goal is to prepare the student for a career in academic research, dental education, clinical practice, or public health. Emphasis is placed on developing leadership skills and training advocates for children's health. For interested students, this program can be combined with other educational programs in the social sciences, basic sciences, or allied health professions that lead to an additional master's degree, postdoctoral fellowship, or a doctoral degree.

During the first year each student completes courses in research design and statistics; a protocol for the research project is completed in conjunction with the coursework. This project develops a student's skill set in the scientific method and scientific writing. During the second year data are collected, and during the third year the thesis is written and defended. Under the direction of leaders in many fields, research opportunities are available in a range of topics and can be undertaken in the School of Dentistry, at a facility in nearby Research Triangle Park, or at any of several neighboring institutions of higher learning. Numerous projects have received national acclaim and garnered publication in dental literature. Hospital training is conducted through the University of North Carolina Health Care System. Graduate students are active members of the program's teaching team during all years. Development of leadership skills in the health profession is supported by externships at the local, state, and national levels.

## Periodontology

The periodontology program is designed to prepare dentists to enter the clinical practice of periodontics or to work in academics and research. The program consists of a 36-month course of study leading to a certificate in periodontics and a master of science degree conferred by the Graduate School. Alternative degree programs include a master of public health and a Ph.D. in oral and craniofacial biomedicine. The curriculum is devoted to the study of biological concepts and literature that encompass the prevention, diagnosis, and treatment of diseases of the supporting and surrounding tissues of the teeth or their substitutes, and the maintenance of the health, function, and esthetics of these structures and tissues. Clinical acquisition of skills in periodontology and implantology is a primary focus of the program. Resident experiences include patient care, teaching, and research. Elective courses relating to areas of research interests are available.

## Prosthodontics

The prosthodontics program is a 36-month course of study in fixed and removable prosthodontics, dental implant prosthodontics, and maxillofacial prosthetics, leading to a certificate in prosthodontics and a master of science degree conferred by The Graduate School. The primary goals of the program are to prepare a student for clinical practice and/or a teaching and research career. The curriculum offers a broad educational experience in clinical, research, didactic, and teaching activities. The program satisfies the formal training requirements for certification by the American Board of Prosthodontics.

A number of graduate courses from allied clinical and biomedical disciplines are available as electives for prosthodontic graduate students. Though not required, elective courses are encouraged. Potential electives (within or outside the School of Dentistry) should be discussed with the program director so that the core curriculum can be adjusted to accommodate the student's needs.

## Dental Hygiene Education

The primary objective of the dental hygiene education program is to prepare well-qualified educators to be instructors in dental hygiene academic programs. Upon the successful completion of this program, the student should have

1. Acquired advanced knowledge and skills in one of the following minors: dental management/administration, biological sciences, oral pathology, or clinical education

2. Developed the knowledge, skills, and attitudes necessary in the conduct of dental hygiene programs
3. Acquired the ability to teach courses in more than one dental hygiene field, and
4. Defined their own problems from the present body of knowledge in dental and dental hygiene education, solved those problems, and presented their work in a scholarly fashion

Course requirements vary and are based on the individual background of the student and on the minor selected by the student. Available minors include clinical education, management/administration/biological sciences, and oral pathology. Thirty-six credit hours are required for the master of science degree. The length of the program is approximately two years.

## Admissions

### Oral and Craniofacial Biomedicine

There are two pathways for admission to the Curriculum in Oral Biology:

1. Direct application to oral and craniofacial biomedicine  
Individuals (domestic or international) with a doctoral or biomedical professional degree, including D.D.S., D.M.D., M.D. or equivalent, should apply directly to the program through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>).
2. Application through the Biological and Biomedical Sciences Program  
Individuals (domestic or international) *without* an advanced professional biomedical degree must apply through the Biological and Biomedical Sciences Program (BBSP (<http://bbbsp.unc.edu>)).

### Endodontics

Application to the endodontics program requires submission of the required transcripts and documentation to the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following year's class can be found on the PASS Web site (<http://www.adea.org/PASSapp>). A personal interview is required for admission. After review by the program, successful applicants will be recommended to The Graduate School. Admission to The Graduate School is granted only after the department reviews and approves the application, transcripts, or prior academic work, letters of reference, and other credentials. The number of admitted students is limited to three each year. Stipends are available, depending upon available resources.

### Orthodontics

Application to the orthodontics program requires submission of the required transcripts and documentation to the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following summer class are available on the PASS Web site (<http://www.adea.org/PASSapp>). All candidates must register with the Postdoctoral Dental Matching Program (<http://www.natmatch.com/dentres>). A personal, on-site interview is required for admission, and interviews are made by invitation of the program after its review of applications. Interviews are usually held in late October or early November. Once a student has been accepted through the Matching Program, the student must apply to The Graduate School to complete the requisite courses to earn a master's degree. Applications for admission to The Graduate School must be submitted online through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). Stipends are available, depending upon available resources.

### Pediatric Dentistry

The pediatric dentistry program requires application through both the centralized application and matching services: Submission of the required transcripts and documentation is made to the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following summer class are available on the PASS Web site (<http://www.adea.org/PASSapp>). All candidates must register with the Postdoctoral Dental Matching Program. (<http://www.natmatch.com/dentres>) A personal interview is required, and interviews are made by invitation of the department after applications have been reviewed. Once a student has been accepted through the Match Program, the student must apply to The Graduate School. Applications for admission to The Graduate School must be submitted online through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). Stipends are available, depending upon available resources.

### Periodontology

All applications for the periodontology program, as well as transcripts and letters of reference, should be submitted through the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following summer cohort are available on the PASS Web site (<http://www.adea.org/PASSapp>). After review by the program, applicants will be informed of their eligibility to apply to The Graduate School. Admission to The Graduate School is granted only after the department reviews and approves the application, transcripts of prior academic work, letters of reference, and other credentials. Applications for admission to The Graduate School must be submitted online through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). The number of students is limited to three each year. Stipends are available, depending upon available resources.

### Prosthodontics

All applications for the prosthodontics program, as well as transcripts and letters of reference, should be submitted through the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following summer cohort are available on the PASS Web site (<http://www.adea.org/PASSapp>). All candidates must register with the Postdoctoral Dental Matching Program (<http://www.natmatch.com/dentres>). A personal interview is required for admission. Once a student has been accepted through the Match Program, the admission policy for the master of science in prosthodontics program follows the regular requirements for admission to The Graduate School. Admission to The Graduate School is granted only after the application, transcript of prior academic work, letters of reference, and other credentials are reviewed and approved by the program's admissions committee. Applications for admission to The Graduate School must be submitted online through the Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). Stipends are available, depending upon available resources.

### Dental Hygiene Education

Minimum admissions requirements for the program in dental hygiene education include current licensure, a bachelor's degree from an accredited institution, and graduation from a dental hygiene program accredited by the Commission on Dental Accreditation of the American Dental Association. Exceptions to this requirement include graduation from an international bachelor of science program in dental hygiene, where CODA accreditation is not possible. Previous work experience in dental hygiene education or dental hygiene practice is strongly recommended.

Applicants must have a grade point average of B or better in the professional undergraduate curriculum. Three letters of recommendation are required, as well as an admissions questionnaire by the applicant. The course of study begins in August of each year. Applications for admission to The Graduate School must be submitted online through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). Stipends are available, depending upon available resources.

## Professors

**Roland R. Arnold**, Immunology, Host-Microbial Biology  
**James D. Beck**, Oral Epidemiology  
**Jennifer Webster-Cyriaque**, Oral Medicine, Dental Ecology  
**Terry Donovan**, Operative Dentistry and Dental Materials  
**Greg Essick**, Dental Sleep Medicine, Prosthodontics  
**Eric Everett**, Associate Dean for Research, Pediatric Dentistry  
**Richard Gracely**, Endodontics  
**H. Garland Hershey**, Orthodontics  
**Harald Heymann**, Operative Dentistry, Biomaterials  
**Ching-Chang Ko**, Orthodontics  
**Jessica Lee**, Pediatric Dentistry  
**Sally Mauriello**, Dental Hygiene  
**Valerie Murrah**, Oral Carcinogenesis, Salivary Gland Malignancies  
**Steven Offenbacher**, Inflammatory Mediators, Host Response, Periodontal, Systemic Diseases  
**Lauren Patton**, Oral Medicine, Dental Ecology  
**Ceib Phillips**, Assistant Dean for Advanced Education/Graduate Programs, Orthodontics  
**Andre Ritter**, Operative Dentistry  
**Gary Slade**, Oral Epidemiology  
**John W. Stamm**, Oral Epidemiology  
**Ronald P. Strauss**, Medical Sociology and Health Promotion/Disease Prevention  
**Edward J. Swift**, Associate Dean for Education, Operative Dentistry  
**Ricardo Teles**, Periodontology  
**Timothy Turvey**, Oral and Maxillofacial Surgery  
**Donald A. Tyndall**, Oral and Maxillofacial Radiology  
**Raymond P. White Jr.**, Oral and Maxillofacial Surgery  
**Aldridge Wilder**, Operative Dentistry  
**Rebecca Wilder**, Dental Hygiene  
**J. Tim Wright**, Pediatric Dentistry  
**Mitsuo Yamauchi**, Collagen Biochemistry, Physiology and Metabolism of Bone  
**David Zajac**, Craniofacial Disorders

## Associate Professors

**Silvana Barros**, Periodontology  
**Lee Boushell**, Operative Dentistry  
**Alice Curran**, Oral and Maxillofacial Pathology  
**Ingeborg DeKok**, Prosthodontics  
**Kimon Divaris**, Pediatric Dentistry  
**Sylvia Frazier-Bowers**, Orthodontics  
**Asma Khan**, Endodontics  
**Lorne D. Koroluk**, Pediatric Dentistry and Orthodontics  
**Mark Kutcher**, Oral Medicine  
**Glenn E. Minsley**, Prosthodontics  
**Tung Nguyen**, Orthodontics  
**Rocio Quinonez**, Pediatric Dentistry  
**Eric Rivera**, Endodontics  
**Anne Sanders**, Dental Ecology  
**John Sturdevant**, Operative Dentistry  
**Andrea Ferreira Zandona**, Operative Dentistry

**Thomas Ziemiecki**, Prosthodontics

## Assistant Professors

**Antonio Amelio**, Dental Ecology  
**Tate Jackson**, Orthodontics  
**Taiseer Sulaiman**, Operative Dentistry  
**Di Wu**, Periodontology

## Clinical Professors

**Ashraf Fouad**, Endodontics  
**Ralph Leonard**, Diagnostic Sciences  
**Samuel Nesbit**, Diagnostic Sciences  
**Luis Pimenta**, Dental Ecology  
**Enrique Platin**, Oral and Maxillofacial Radiology  
**Michael Roberts**, Pediatric Dentistry  
**Sigurdur Saemundsson**, Pediatric Dentistry

## Clinical Associate Professors

**George H. Blakey**, Oral and Maxillofacial Surgery  
**Jennifer Brame**, Dental Hygiene  
**Angela Broome**, Diagnostic Sciences  
**Richard Eidson**, Operative Dentistry  
**Susan Hadler**, Diagnostic Sciences  
**Carol Haggerty**, Diagnostic Sciences  
**George Hall**, Operative Dentistry  
**Lewis Lampiris**, Dental Ecology, DISC  
**Nigel Shaun Matthews**, Oral and Maxillofacial Surgery  
**Michael Milano**, Pediatric Dentistry  
**Shannon Mitchell**, Dental Ecology  
**Antonio Moretti**, Periodontology  
**Ricardo Padilla**, Diagnostic Sciences  
**Mary T. Pettiette**, Assistant Dean for Admissions, Endodontics  
**Glenn Reside**, Oral and Maxillofacial Surgery  
**Allen Samuelson**, Dental Ecology  
**Margot Stein**, Dental Ecology  
**Ricardo Walter**, Operative Dentistry

## Clinical Assistant Professors

**Sumitha Ahmed**, Operative Dentistry  
**Sun-Yung Bak**, Prosthodontics  
**Massimiliano Di Giosia**, Endodontics  
**Christine Downey**, Dental Ecology  
**Ibrahim Duqum**, Prosthodontics  
**Lynn Fox**, Dental Ecology  
**Glenn Garland**, Operative Dentistry  
**Matthew Hopfensperger**, Prosthodontics  
**Brandon Johnson**, Diagnostic Sciences  
**Pei Feng Lim**, Orofacial Pain, Endodontics  
**Andre Mol**, Oral and Maxillofacial Radiology  
**Thiago Morelli**, Periodontology  
**Patricia Miguez**, Operative Dentistry  
**Jonathan Reside**, Periodontology  
**Carolina Vera Resendiz**, Prosthodontics  
**Lattice D. Sams**, Dental Ecology  
**Lynn Smith**, Dental Assisting  
**Lisa Stoner**, Prosthodontics  
**Lida Swann**, Prosthodontics  
**Peter Tawil**, Endodontics  
**Tiffanie White**, Dental Ecology

Alexandra B. Yarborough, Prosthodontics

## Research Associate Professors

Eric Bair, Endodontics

Flavia Teles, Periodontology

## Research Assistant Professors

Julie Marchesan, Periodontology

Inna Tchivileva, Endodontics

## DENG

### Graduate-level Courses

#### **DENG 701. Introduction to Research Design. 1 Credit.**

Introduction to scientific methodology, clinical epidemiology, oral biology and technology transfer, clinical trials, evaluation of scientific literature, experiments of nature, animal models for oral research, ethnics in research, laboratory simulations and research models, and proposal writing.

#### **DENG 702. Biostatistics. 2 Credits.**

Introduction of biostatistical concepts, sampling, descriptive statistics, hypothesis testing, comparisons of means and proportions, 2x2 and r x c tables, correlation and simple regression, sample size and power, analysis of variance, factorial anova, multiple regression, and nonparametric tests.

#### **DENG 703. Applied Dental Research Methods. 2 Credits.**

This course builds on previous courses, DENG 701 Introduction to Research Methods and DENG 702 Biostatistics. The goal is to help students prepare and complete the thesis with emphasis on the results section.

#### **DENG 704. Interdisciplinary Care Conference. 1 Credit.**

For first & second-year dental graduate students. Review and discussion of the diagnoses, treatment plans, prognoses, and interdisciplinary care of selected patients.

**Repeat rules:** May be repeated for credit.

#### **DENG 707. Regional Anatomy. 3 Credits.**

Review of the anatomy of the head and neck region, including osteology, cardiovascular system, head and neck embryology, special sensory modalities, nervous system, functional nervous system, and extraoral correlation with the oral cavity.

#### **DENG 720. Applied Pharmacology. 1 Credit.**

This course is designed for dental practitioners with sufficient general and specific clinical pharmacology knowledge to appropriately and safely utilize drugs in treatment. The course will be concentrated in three areas: general clinical pharmacology principles, general clinical pharmacology of medications, specific clinical pharmacology of drugs utilized by dental practitioners.

#### **DENG 751. Advanced Pain and Anxiety Control. 2 Credits.**

Introduction to: operating room and recovery room protocol; patient cardiovascular and pulmonary evaluation; adjunct and inhalant agents; nitrous oxide; pharmacology of IV anesthetic agents; EKG interpretation; arterial blood gases; anesthesia equipment monitoring; anesthetic complications and emergencies; fluid and electrolyte and blood therapy; airway management; venipuncture; pediatric anesthesia; and pre-op evaluation, orders, and rounds.

#### **DENG 799. Orientation for Clinical and Research Program. 1 Credit.**

During this course, student complete required clinical training in the program and the School of Dentistry, attend a library orientation, and are introduced to MS Research procedures and requirements.

#### **DENG 890. Special Topics in Dentistry. 1-3 Credits.**

This course will cover emerging issues or specialized content not represented in the main curriculum.

**Repeat rules:** May be repeated for credit. 12 total credits. 4 total completions.

#### **DENG 901. Research. 1-6 Credits.**

The goal of this course is to provide students an opportunity to investigate and explore different research areas prior to their choice of a mentor and specific project for their master's or doctoral degree.

**Repeat rules:** May be repeated for credit. 15 total credits. 5 total completions.

## DHED

### Graduate-level Courses

#### **DHED 705. Medical Emergencies/Local Anesthesia. 2 Credits.**

This is the fundamental course in local anesthesia for the dental hygienist. The course covers pharmacology, neuroanatomy, anatomy, neurophysiology as well as administration and techniques of local anesthesia.

#### **DHED 715. Current Concepts in Clinical Skills. 2 Credits.**

This course reviews and updates students in current treatment and diagnostic modalities in dental allied education. Students who satisfactorily pass the evaluation will be exempt.

**Repeat rules:** May be repeated for credit.

#### **DHED 720. Educational Concepts. 2 Credits.**

This course is designed to introduce the graduate student to various teaching philosophies and methodologies. A variety of educational concepts such as methods of presentation, testing, and measurement are explored. Emphasis is placed on the practical application of theory.

#### **DHED 730. Organization and Administration. 3 Credits.**

Provides information and experience in leadership, administration, and accreditation for allied dental education programs.

#### **DHED 736. Clinical/Laboratory Teaching Practicum. 3 Credits.**

This course provides students with the knowledge and skills to function as a competent clinical instructor. Psychomotor skill development and analysis and remediation of performance problems are two topics related to clinical teaching that are stressed.

#### **DHED 753. Advanced Intraoral Functions. 3 Credits.**

#### **DHED 754. Advanced Intraoral Functions (Periodontics). 3 Credits.**

#### **DHED 760. Seminar in Education and Research. 1 Credit.**

This course is designed to provide knowledge and stimulate discussion about pertinent topics in dental and allied dental education and research.

#### **DHED 774. Personnel Management Seminar. 2 Credits.**

#### **DHED 834. Dental Management Seminar. 4 Credits.**

#### **DHED 836. Advanced/Clinical Teaching. 3 Credits.**

#### **DHED 837. Internship. 6-9 Credits.**

This full semester internship provides the student with the opportunity to student teach in an allied dental program.

**DHED 860. Seminar in Education and Research. 1 Credit.**

**DHED 896. Independent Study in Dental Hygiene Education. 1-4 Credits.**

**DHED 993. Master's Research and Thesis. 3 Credits.**

## ENDO

### Graduate-level Courses

**ENDO 710. Advanced Clinical Endodontics. 2-6 Credits.**

870 hours of clinical practice

**Repeat rules:** May be repeated for credit.

**ENDO 811. Endodontics Seminar and Case Analysis. 3 Credits.**

180 hours conference.

**Repeat rules:** May be repeated for credit.

**ENDO 812. Endodontics Literature Review Seminar. 2 Credits.**

270 hours.

**Repeat rules:** May be repeated for credit.

**ENDO 993. Master's Research and Thesis. 3 Credits.**

Third year.

**Repeat rules:** May be repeated for credit.

## OBIO

### Graduate-level Courses

**OBIO 701. Research Techniques in Oral Biology. 3 Credits.**

Permission of the instructor. The course familiarizes participants with a selection of specialized research techniques employed in interdisciplinary basic science approaches to problems in oral biology. Four laboratory hours a week.

**Repeat rules:** May be repeated for credit. 12 total credits. 4 total completions.

**OBIO 710. Discussion in Oral Biology. 1 Credit.**

Permission of the instructor. A series of seminars on topics relevant to research and scientific knowledge in the field of oral biology. Visiting scientists from other research centers in the country and abroad participate in the discussion series. One lecture hour a week.

**Repeat rules:** May be repeated for credit. 4 total credits. 4 total completions.

**OBIO 720. Topics in Oral Biology. 1 Credit.**

**OBIO 721. Directed Studies in Oral Biology. 1 Credit.**

Topics include extracellular matrices, immunology, inflammation, neurobiology, and pain management.

**OBIO 722. Directed Studies in Oral Biology. 1 Credit.**

Topics include extracellular matrices, immunology, inflammation, neurobiology, and pain management.

**OBIO 723. Directed Studies in Oral Biology. 1 Credit.**

Topics include extracellular matrices, immunology, inflammation, neurobiology, and pain management.

**Same as:** NBIO 721.

**OBIO 724. Directed Studies in Oral Biology. 1 Credit.**

Topics include extracellular matrices, immunology, inflammation, neurobiology, and pain management.

**OBIO 730. Biological Concepts. 1.5 Credit.**

Overview of structures and biological determinants of conditions and diseases of the oral cavity. Both growth and development and pathophysiology will be introduced in the context of three areas of oral biology: biology of extracellular matrices, host-pathogens interactions, and orofacial neurobiology.

**OBIO 731. Biological Concepts. 1.5 Credit.**

Overview of structures and biological determinants of conditions and diseases of the oral cavity. Both growth and development and pathophysiology will be introduced in the context of three areas of oral biology: biology of extracellular matrices, host-pathogens interactions, and orofacial neurobiology.

**OBIO 732. Biological Concepts. 1.5 Credit.**

Overview of structures and biological determinants of conditions and diseases of the oral cavity. Both growth and development and pathophysiology will be introduced in the context of three areas of oral biology: biology of extracellular matrices, host-pathogens interactions, and orofacial neurobiology.

**Same as:** NBIO 732, PHCO 747.

**OBIO 733. Translational Pain Medicine. 1.5 Credit.**

This is a clinician-taught course that advances students' understanding of chronic pain (e.g., head/face pain, pelvic pain, back pain, cancer pain, surgical pain) in both the classroom and the clinic.

**Requisites:** Prerequisite, OBIO 732; Permission of the instructor for students lacking the prerequisite.

**Same as:** PHCO 748.

**OBIO 770. Selected Topics in Oral Biology. 1 Credit.**

Review of current findings in selected areas of oral biology. Students will critique current literature dealing with the newest discoveries in neuroscience, inflammation, or pathogenesis in an interactive forum between students and faculty.

**Repeat rules:** May be repeated for credit. 4 total credits. 4 total completions.

**OBIO 780. Introduction to Scientific Writing. 1 Credit.**

Seminar series that will give generic instructions covering grant writing skills and structure, as well as offer insight for scientific writing.

**OBIO 993. Master's Research and Thesis. 3 Credits.**

Permission of the instructor.

**Repeat rules:** May be repeated for credit.

**OBIO 994. Doctoral Research and Dissertation. 3 Credits.**

Permission of the instructor.

**Repeat rules:** May be repeated for credit.

## ORPA

### Graduate-level Courses

**ORPA 731. Surgical Oral Pathology Seminar. 1-3 Credits.**

This weekly seminar uses unknown cases as the basis for discussion of a variety of biopsy specimens taken from the head and neck. Clinical management of cases also is discussed. Students will develop skills for interacting with their medical and dental colleagues.

**Repeat rules:** May be repeated for credit.

**ORPA 732. Current Perspectives on Oral and Maxillofacial Pathology. 1-3 Credits.**

This seminar series will focus on current research in oral and maxillofacial pathology (OMP) and related fields. Current scientific literature will be critically reviewed. In addition, students will review historical literature to gain a perspective on the development of OMP as a specialty.

**Repeat rules:** May be repeated for credit.

**ORPA 733. Advanced Oral Pathology. 1-3 Credits.**

This lecture and clinicopathologic correlation series includes study of the etiology, pathogenesis, clinical, and histopathologic aspects of diseases of the head and neck.

**Repeat rules:** May be repeated for credit.

**ORPA 750. Surgical Pathology in the Hospital Setting. 1-3 Credits.**

Under the supervision of the hospital pathologists, the student will rotate in anatomic pathology, laboratory medicine, dermatopathology, hematopathology, molecular medicine, surgical specialties, and other elective areas to develop advanced concepts of disease as well as a working relationship with medical colleagues.

**Repeat rules:** May be repeated for credit.

**ORPA 762. Oral and Maxillofacial Pathology Seminar. 2 Credits.**

Course includes developmental disturbances of soft and hard tissues, syndromes, inflammation, immunology, pulp and periapical disease, periodontal disease, tumor-like proliferations, microbial disease, endocrine and metabolic diseases. Also includes odontogenic cysts, salivary gland disease, oral epithelial and mesenchymal neoplasms, bone and joint diseases, nerve muscle diseases, dermatological diseases, and blood diseases.

**ORPA 763. Oral and Maxillofacial Pathology Seminar. 2 Credits.**

Continuation of ORPA 762.

**ORPA 993. Master's Research and Thesis. 3 Credits.****OPER****Graduate-level Courses****OPER 701. Operative Dentistry Seminar II. 1 Credit.**

(Aesthetic and Adhesive Dentistry.) In this seminar, graduate students will learn the scientific principles and clinical techniques involved in dental aesthetics and adhesive restorations. Students may be required to develop a case presentation for this seminar.

**Repeat rules:** May be repeated for credit. 2 total credits. 2 total completions.

**OPER 702. Operative Literature Review I. 1 Credit.**

This is a weekly seminar offering a forum for presentation and discussion of relevant scientific papers on various operative dentistry related topics. Typically, a resident or faculty member presents one or more relevant papers, which is followed by a critical analysis of the study and discussion of the topic.

**Repeat rules:** May be repeated for credit. 4 total credits. 4 total completions.

**OPER 704. Operative Clinical Seminar A. 1 Credit.**

This seminar will involve a series of presentations where the student will present clinical cases resolved in the graduate clinic.

**Repeat rules:** May be repeated for credit. 2 total credits. 2 total completions.

**OPER 705A. Teaching Internship. 1-9 Credits.**

Student will be actively involved in teaching Functional Dental Anatomy course. Student will participate in preclinical laboratory instruction and evaluation procedures.

**OPER 731. Cariology. 1 Credit.**

Discusses specific topics related to Cariology. Students will provide care in clinic identifying and treating patients based on caries risk assessment. Seminar formats include lectures, discussions, literature reviews, and practical (hands-on) exercises. Students must present a clinical case discussing alternative treatment based on patient's caries risk assessment.

**Repeat rules:** May be repeated for credit.

**OPER 732. Introduction to Operative Dentistry. 3 Credits.**

Provides students with broad introduction to key Operative Dentistry concepts. Students will be exposed to a wide variety of topics, including intensive training in direct restorations, dental photography, fabrication of diagnostic casts and implant stents. Prepares incoming graduate students for clinical patient care and teaching in predoctoral courses and clinics.

**Repeat rules:** May be repeated for credit.

**OPER 736. Graduate Dental Biomaterials II. 3 Credits.****OPER 790. Operative Dentistry Clinic II. 2-6 Credits.**

(Patient treatment.) Primary focus is on patients requiring more advanced considerations for operative dentistry treatment planning and/or procedures. There will be a strong focus on aesthetic dentistry, prevention, and 'medical management' of caries, and the use of advanced technologies to provide operative dentistry treatment.

**Repeat rules:** May be repeated for credit.

**OPER 993. Master's Research and Thesis. 3 Credits.**

The student will begin writing a master's thesis.

**Repeat rules:** May be repeated for credit.

**ORAD****Graduate-level Courses****ORAD 702. Advanced Oral Radiologic Technology. 4 Credits.**

Seminars, laboratory, and clinical sessions to provide experience in advanced oral radiologic procedures.

**ORAD 704. Advanced Radiologic Diagnosis II. 3 Credits.**

Literature review, seminars, and clinical experience in advanced radiologic diagnosis.

**ORAD 705. Principles for Advanced Diagnostic and Therapeutic Radiology. 4 Credits.**

Literature review and seminars in the application of radiologic procedures such as computed tomography, digital imaging, and magnetic resonance for diagnosis of oral and maxillofacial conditions. Fundamentals of radiation therapy are also included.

**ORAD 706. Advanced Oral Radiology. 2 Credits.**

Radiographic selection criteria, dental radiographs efficacy, panoramic radiology, extraoral techniques, radiation risks and radiological hygiene in dental practice, principle of radiologic interpretation, radiology of cysts and tumors, radiology of the TMJ, radiology of systemic disease, quality improvement, radiology for dental implants, digital imaging in dentistry, and advanced craniofacial region imaging.

**ORAD 707. Graduate Clinical Oral Radiology. 2-6 Credits.****ORAD 710. Oral and Maxillofacial Radiology Literature Review. 1 Credit.**

Course is designed for graduate students with a strong interest in OMFR and seeks to expose students to classical articles in the radiology literature.

**Repeat rules:** May be repeated for credit.

**ORAD 802. Clinical Radiology Conference. 1 Credit.**

Case studies in the interpretation of unusual conditions of the oral and maxillofacial region.

**Repeat rules:** May be repeated for credit.

ORAD 993. Master's Research and Thesis. 3 Credits.

## ORTH

### Graduate-level Courses

**ORTH 801. Orthodontic Technique. 4 Credits.**

Introduction to orthodontic technique and procedures for beginning orthodontic graduate students.

**Repeat rules:** May be repeated for credit.

**ORTH 802. Current Topics in Orthodontics. 2 Credits.**

Seminars on pertinent orthodontic literature for advanced orthodontic students.

**Repeat rules:** May be repeated for credit.

**ORTH 803. Orthodontic Diagnosis. 2 Credits.**

Principles of orthodontic diagnosis and analysis of diagnostic records for orthodontic specialists.

**ORTH 805. Advanced Clinical Orthodontics. 2-6 Credits.**

**ORTH 806. Science of Tooth Movement. 2 Credits.**

Mechanical principles in orthodontic force production and control; biological response to orthodontic force.

**ORTH 807. Orthodontic Biomaterials. 1-3 Credits.**

Introduction to orthodontic biomaterials and integration with the basic principles of engineering, science, and orthodontics.

**ORTH 808. Growth and Development. 4 Credits.**

Principles of growth and development, emphasizing dento-facial development from an evolutionary and molecular biology perspective, as well as the traditional anatomical perspective.

**ORTH 809. Preventative Orthodontics. 3 Credits.**

**ORTH 810. Multidisciplinary Management of Craniofacial Anomalies. 1 Credit.**

This course introduces the graduate student to the management of patients with craniofacial anomalies using a multidisciplinary team approach. The course gives the graduate student a basic understanding of the role of specialties involved, the procedures, and timing of interventions in the management of craniofacial patients from birth to adulthood.

**Repeat rules:** May be repeated for credit.

**ORTH 815. Oral-Pharyngeal Function. 1 Credit.**

Maturation of oral and pharyngeal function, including speech and its relation to dento-facial development.

**ORTH 820. Advanced Biomechanics. 3 Credits.**

Concepts in orthodontic mechanics emphasizing segmented arch approaches and laboratory tests of appliance components and designs.

**ORTH 822. Environment of Specialty Practice. 3 Credits.**

Trends in health care delivery; organization and management of orthodontic specialty practice.

ORTH 993. Master's Research and Thesis. 3 Credits.

## PEDO

### Graduate-level Courses

**PEDO 800. Maternal and Child Health Seminar Series. 1 Credit.**

(One hour a week for each fall and spring semester.) This is a seminar series that focuses on a broad range of topics related to pediatric dentistry and pediatric medicine, including general medical issues, practice management, social issues, child advocacy, and presentation of unusual clinical cases.

**Repeat rules:** May be repeated for credit.

**PEDO 801. Pediatric Diagnosis and Treatment Planning Seminar. 1 Credit.**

(One hour a week each fall and spring semester for two years.) This course is a seminar wherein diagnosis and treatment planning options are considered through a problem-oriented approach. For cases in progress and completed, outcomes are reviewed and critiqued.

**Repeat rules:** May be repeated for credit.

**PEDO 803. Principles of Pediatric Dentistry. 1 Credit.**

(Six hours a month for fall and spring semesters for 24 months.) This seminar covers the fundamentals of pediatric dentistry from behavior management to pulp therapy. The course relies on readings of classic and contemporary literature with seminars that include discussions and critiques of readings.

**Repeat rules:** May be repeated for credit.

**PEDO 804. Advanced Clinical Pediatric Dentistry. 2-6 Credits.**

This course provides clinical experience in all phases of pediatric dentistry, including dental treatment under conscious sedation and general anesthesia.

**Repeat rules:** May be repeated for credit. 6 total credits. 99 total completions.

**PEDO 805. Contemporary Practice Management. 1 Credit.**

(One hour monthly during the spring semester for three years.) This course provides an understanding of the design, implementation, and management of a modern pediatric dental practice. Most seminar leaders are private practitioners who are adjunct faculty in the department.

**PEDO 806. Treatment of Pediatric Dental Emergencies. 1 Credit.**

(One hour a week each week for 36 months.) This seminar series serves as a faculty/resident forum for reviewing the previous week's emergency cases and in which diagnosis and treatment options are reviewed and critiqued. Endodontic faculty and residents also participate in this course.

**Repeat rules:** May be repeated for credit.

PEDO 993. Master's Research and Thesis. 3 Credits.

## PERI

### Graduate-level Courses

**PERI 710. Periodontal Therapy. 1 Credit.**

This graduate seminar reviews techniques and procedures for treating periodontal diseases. Topics include gingival grafting, surgical flap management, osseous surgery, periodontal regeneration, antimicrobials, host modulation, and periodontal medicine.

**PERI 711. Periodontal Therapy. 1 Credit.**

This graduate seminar reviews techniques and procedures for treating periodontal diseases. Topics include gingival grafting, surgical flap management, osseous surgery, periodontal regeneration, antimicrobials, host modulation, and periodontal medicine.

**PERI 721. Case Analysis. 2 Credits.**

This graduate seminar continues themes introduced in PERI 720 and discusses advanced implant topics including bone augmentation, peri-implantitis, and implant efficacy assessment. The seminar includes didactic lectures, case presentations, and journal club components. Spring.

**Repeat rules:** May be repeated for credit.

**PERI 723. Case Analysis. 2 Credits.****PERI 731. Seminar in Periodontology. 2 Credits.**

In this first-year literature review course, graduate students present and evaluate the evidence on periodontal disease etiology, pathogenesis, risk factors and treatments including mechanical, surgical, and pharmacological approaches.

**Repeat rules:** May be repeated for credit.

**PERI 761. Seminar in Periodontology. 2 Credits.**

In this second- and third-year literature review course, graduate students discuss evidence on advanced topics in periodontology or related disciplines.

**Repeat rules:** May be repeated for credit.

**PERI 762. Seminar in Dental Implantology. 1 Credit.**

In this literature review course, graduate students will discuss evidence on dental implant and other related therapies.

**PERI 820. Introduction to Implants. 1 Credit.**

This graduate seminar traces the biology of osseointegration, surgical techniques in dental implant placement, and prosthetic restoration. The seminar includes didactic lectures, case presentations, and journal club components.

**Repeat rules:** May be repeated for credit.

**PERI 821. Clinical Implantology. 1 Credit.**

This graduate seminar continues themes introduced in PERI 820 and discusses advanced implant topics including bone augmentation, peri-implantitis, and implant efficacy assessment. The seminar includes didactic lectures, case presentations, and journal club components.

**PERI 891. Advanced Clinical Periodontics and Clinical Practice. 2-6 Credits.**

Within this specialty clinic, graduate students gain experience and competency in diagnosing and comprehensively treating patients with periodontal diseases. Cases may involve interdisciplinary care, medical management, dental implants, and sedation procedures.

**Repeat rules:** May be repeated for credit.

**PERI 993. Master's Research and Thesis. 3 Credits.**

## PROS

### Graduate-level Courses

**PROS 702. Introduction to Prosthodontic Literature. 1 Credit.**

A seminar designed to review early and classic prosthodontic literature common to fixed and removable prosthodontics.

**Repeat rules:** May be repeated for credit.

**PROS 722. Prosthodontic Principles, Diagnosis, and Treatment Planning - Fixed and Removable. 2 Credits.**

Principles of diagnosis and treatment relative to the prosthodontic patient are covered in depth in this seminar series.

**Repeat rules:** May be repeated for credit.

**PROS 732. Prosthodontic Diagnosis and Treatment Planning. 1 Credit.**

This course provides the prosthodontic student with adequate knowledge in fixed prosthodontics to promote continued lifelong learning, offer quality treatment to a diverse population with various needs using fixed prosthesis, manage complications and failures of fixed prostheses, and to challenge the ABP examination.

**Repeat rules:** May be repeated for credit.

**PROS 751. Maxillofacial Prosthodontic Principles, Diagnosis, and Treatment. 1 Credit.**

Principles of diagnosis and treatment relative to maxillofacial prosthodontic patients are covered in depth in this seminar series.

**Repeat rules:** May be repeated for credit.

**PROS 752. Maxillofacial Prosthodontic Principles, Diagnosis, and Treatment. 1 Credit.**

Principles of diagnosis and treatment relative to maxillofacial prosthodontic patients are covered in depth in this seminar series.

**Repeat rules:** May be repeated for credit. 6 total credits. 6 total completions.

**PROS 801. Advanced Clinical Fixed and Removable Prosthodontics. 2-6 Credits.**

This clinical offering is designed to permit the graduate student to experience all phases of advanced patient management in fixed and removable prosthodontics.

**Repeat rules:** May be repeated for credit.

**PROS 851. Clinical Maxillofacial Prosthodontics. 2 Credits.**

This clinical offering is designed to permit the graduate student to manage the comprehensive prosthodontic care of congenital and/or acquired maxillofacial defects in both the dental school and hospital environment.

**Repeat rules:** May be repeated for credit.

**PROS 853. Clinical Maxillofacial Prosthodontics. 2 Credits.**

This clinical offering is designed to permit the graduate student to manage the comprehensive prosthodontic care of congenital and/or acquired maxillofacial defects in both the dental school and hospital environment.

**Repeat rules:** May be repeated for credit.

**PROS 993. Master's Research and Thesis. 3 Credits.**

Completion of thesis for master of science degree.

**Repeat rules:** May be repeated for credit.

In addition to the courses listed, core courses are required in anatomy, microbiology, pharmacology, oral pathology, research methodology, scientific writing, and dental education. Flexibility in the curriculum also allows opportunity for appropriate electives.

Additional courses are required for each minor as follows:

## Biological Sciences

### DENT

DENT 102	Gross Anatomy	4
DENT 104	Histology	3

## Clinical Education

### DHED

DHED 753	Advanced Intraoral Functions	3
DHED 754	Advanced Intraoral Functions (Periodontics)	3
DHED 836	Advanced/Clinical Teaching	3

## Dental Radiology

### RADI

RADI 662	Instrument and Imaging Methods	4
----------	--------------------------------	---

## Management/Administration

### DHED

DHED 774	Personnel Management Seminar	2
----------	------------------------------	---

DHED 834	Dental Management Seminar	4
----------	---------------------------	---

## Oral Pathology

### DENT

DENT 104	Histology	3
----------	-----------	---

DENT 127	GEN PATHOLOGY	3
----------	---------------	---

DENT 202	Pathology II	3
----------	--------------	---