

Oral Biology (ORBG)

Courses

ORBG 5001. Introduction to Dental Assisting. 2 Credit Hours.

Designed to provide the student with an introduction to the dental profession, the dental team and the roles and responsibilities of each member of the team, infection control procedures, sterilization and patient confidentiality. Students will also receive basic knowledge of dental terminology, anatomical structures of the oral cavity, and classification of occlusion. Emphasis is placed on applying information to the clinical setting.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 5002. Chairside Dental Assisting. 3 Credit Hours.

Designed to give the student an introduction to dental terminology, medical-dental histories, dental instruments, charting, oral evacuation, instrument transfer and procedure specific tray set-ups. Emphasis is placed on utilization of four handed dentistry skills.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 5004. Dental Radiology Lecture and Lab. 2 Credit Hours.

Designed to provide the student with basic knowledge of the principles of radiology and radiographic techniques including the principles and methods employed in the paralleling technique and radiographic interpretation. Emphasis is placed on the practice of exposing, processing, mounting, and interpreting intraoral radiographs.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 5005. Dental Anatomy. 1 Credit Hour.

Designed to provide students a basic knowledge of dental terminology, anatomical structures of the oral cavity, head and neck region, classification of occlusion and oral pathology of the head and soft tissue.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8011. Molecular Oral and Craniofacial Biology. 1 Credit Hour.

Basic concepts of physiology, biochemistry, and cell biology related to the oral cavity and craniofacial complex are explored. Topics include connective tissue biology, the role of saliva in health and disease, muscle function, taste, smell, and other sensory functions, with emphasis on current research. These seminars are designed for first-year students in postdoctoral programs in which advanced courses are combined with specialty training. The course outlines scientific information about molecular biology that contributes to our understanding of normal structures and disease processes. Wherever possible, it indicates how this information is useful or impinges on clinical dentistry. This course presupposes a broad background in the basic sciences and interrelates much recently acquired scientific information about the oral cavity that has not been attempted at the predoctoral level.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8012. Advanced Dental Pharmacology and Therapeutics. 1 Credit Hour.

Pharmacotherapeutics of drugs most often used in dentistry, with emphasis on mechanisms, interactions, and effects of drugs used in prevention, diagnosis, and treatment of oral diseases, and drugs used for systemic diseases that may influence the progression or management of oral diseases.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8013. Introduction to Evidence-Based Dentistry. 1 Credit Hour.

Contemporary topics and research presentations on oral and craniofacial biology.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8014. Clinical Anatomy of the Head and Neck. 1 Credit Hour.

Growth and development of the head and neck in relation to general gross anatomy; surgical anatomy of the head and neck region with neuroanatomic studies of cranial nerve anatomy, function and pathology; temporomandibular joint structure, function and dysfunction.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8015. Research Methodology and Study Design. 1 Credit Hour.

Fundamental principles involved in planning, conducting, analyzing, and reporting of scientific research studies, including classification of study designs, hypothesis testing, clinical trial requirements, protocol and grant preparation, scientific writing, analysis and interpretation of data, and approaches to critical evaluation of the scientific literature.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8016. Cases in Oral and Maxillofacial Pathology. 1 Credit Hour.

Students are taught to formulate appropriate clinical and radiographic differential diagnoses for common soft and hard tissue abnormalities of the oral and perioral region via case based discussions. Students receive instruction in the management of patients with common oral mucosal diseases. Indications for patient referral to medical or dental specialists for diagnostic evaluation or disease management are presented. Critical thinking is emphasized in case-based modules. During the case based discussions, students will be asked to describe the lesions using appropriate terminology, offer a prioritized differential diagnosis, suggest a diagnostic plan and recommend management strategies for the entities discussed. The use of a SOAP note format for documenting problem focused patient encounters in oral and maxillofacial pathology will be applied.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8017. Oral Microbiology and Immunology. 1 Credit Hour.

Study of microorganisms and host responses important in oral microbial ecology, oral infectious processes, and the pathogenesis of dental caries, periodontal diseases, dental implant infections, endodontic infections, oral mucosal lesions, and dental focal infections at non-oral body sites.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8018. Biostatistics. 1 Credit Hour.

Introduction to statistical analysis as it applies to biomedical research, including descriptive and inferential statistics. Topics include summarizing and displaying data, theory of measurements and distribution, significance testing, and basic concepts of probability and association.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8019. Advanced Oral and Maxillofacial Radiology. 1 Credit Hour.

Applications of digital dental radiography, panoramic radiology, tomographic imaging for dental implants, computed tomography (CT), and magnetic resonance imaging (MRI); differential interpretations of clinically significant oral and maxillofacial lesions.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8021. Microbiome. 3 Credit Hours.

Course will focus on the biology, ecology, and cell behaviors in the human microbiome in the whole body with a specific emphasis on the oral cavity. Course will also cover the epigenetic changes that may occur in the microbiome and the range of health issues such as obesity, infections, and risk of developing dental and oral mucosal diseases.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8022. Microbiome Techniques. 2 Credit Hours.

This course will cover topics related to laboratory techniques employed to study microorganisms in general and the human microbiome in particular. The topics will range from basic techniques including microscopy, cultivation and biochemical and immunological identification to advanced molecular techniques including nucleic acid amplification, hybridization and sequencing, with particular focus on microbiome analysis.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8023. Craniofacial Bone Biology and Maxillofacial/Dental Orthopedic Care. 2 Credit Hours.

This introductory course will review bone biology and how bone develops and remodels in orthodontic and orthopedic care.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8024. Regeneration of Bone and Dental Hard Tissues. 1 Credit Hour.

This course will focus on dentin and bone regeneration research already being conducted at the dental school and Temple University Center for Bioengineering Research.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8025. Temporomandibular Joint Biology. 2 Credit Hours.

This course will cover the anatomy, mechanics, and function of the temporomandibular joint (TMJ) and associated muscles and ligaments. The course will also cover the dysfunctions commonly diagnosed in dental practice and how they may be manifested in the operation of the TMJ complex.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8026. Neuroscience of Pain. 2 Credit Hours.

This course will focus on the understanding of the biology of pain and how the transmission of pain signals throughout the central and peripheral nervous system. The course will also cover the mechanisms involved in determining pain thresholds and the myriad of psychological responses to pain sensations.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8027. Biology of Drug Delivery Mechanisms. 2 Credit Hours.

This course will focus on how the oral cavity and salivary glands can be used as bioreactors that may be used to deliver drugs, genes, proteins and other molecules to treat a variety of oral and systemic conditions. The course will also cover the mechanisms involved in determining pain thresholds and the myriad of psychological responses to pain sensations.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8028. Basic and Advanced Statistical Methods. 3 Credit Hours.

An introduction to statistical theory and applied methods, including modeling techniques, to analyze dental data. The course will describe the impact of clustering effects of data points in the oral cavity; correction for design effects; methods of analysis of different dental outcomes; and appropriate statistical modeling methods useful in contemporary studies.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8029. Behavioral Change Theories and Practice. 2 Credit Hours.

This course will review and apply selected behavioral change theories in addressing common behavioral problems including addiction.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8031. Biomaterials. 2 Credit Hours.

Developing materials for use in dentistry and medicine is a challenging interdisciplinary process and requires an understanding of material bulk and surface properties, the various biological responses to materials, the clinical context of their use, manufacturing processes, cost, sterilization, packaging, and regulatory issues. This course is designed to introduce students to the various classes of biomaterials in use, their analysis and regulation, and examination of some of their applications in selected subspecialties of dentistry and medicine.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8032. Practical Clinical Practice. 3 Credit Hours.

Students will be assigned as dental assistants, quality evaluators, or patient advocates in the dental school clinics.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ORBG 5001|Minimum Grade of C|May not be taken concurrently)
AND (ORBG 5002|Minimum Grade of C|May not be taken concurrently)
AND (ORBG 5004|Minimum Grade of C|May not be taken concurrently)
AND (ORBG 5005|Minimum Grade of C|May not be taken concurrently)

ORBG 8033. Bioethics and Critical Thinking in Dentistry. 1 Credit Hour.

This course introduces dental residents to the theoretical and practical foundations of bioethics. After an introduction to the history of bioethics and its theories, tools, and strategies for identifying and resolving ethical dilemmas, students will critically explore four key components of contemporary dental ethics: 'Ethics at the Chairside' covering topics such as confidentiality, truth telling, and cultural competency; 'Oral Health Disparities' which introduces the social determinants of health into the oral health equation; 'Research and Industry' designed to teach residents to critically think about conflicts of interest and professionalism; and 'Policy Perspectives' which covers oral health and social justice and the relationships between dental practitioners, health care reform, and oral health.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8034. Advanced Practical Clinical Practice. 3 Credit Hours.

This is an advanced course where students will continue to be assigned as dental assistants, quality evaluators or patient advocates throughout the dental school clinic.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8035. Introduction to Orthodontics. 2 Credit Hours.

The objective of the course is to introduce the post baccalaureate student to the processes of normal craniofacial growth and development in order to recognize and identify deviations from normal. The course emphasizes developmental dentistry, application to clinical orthodontics and postnatal craniofacial growth. Foundation knowledge in orthodontic diagnosis will be developed to allow systematic description of clinical orthodontic problems, orthodontic diagnosis and generation of an orthodontic patient clinical problem list.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8036. Molecular Technology for Translation to the Dental Clinic. 2 Credit Hours.

Molecular Biology research holds great promise for translation to clinical Medicine and Dentistry. This course is a survey of molecular technology along with its contemporary applications to clinical diagnosis and treatment. The course consists of didactic presentations to review basic concepts and student group discussions to address the importance of new technology for clinical applications, particularly in Dentistry.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 8037. Science of Taste Sensation and Relation with Oral Conditions. 1 Credit Hour.

The "taste" is one of the chemosensory senses (taste, smell, and chemesthesis (or chemical feel, including burn from hot chili peppers and cooling from menthol)). Taste receptors convert gustatory stimuli into signals that sensory afferent fibers could transport to the brain where we have sensory experience of foods and beverages. This course is designed to give students a basic understanding of the anatomy, physiology, and biochemistry of this process. This course is intended to give students a working understanding of the taste cells and taste sensation systems important in dentistry.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ORBG 9885. Pre-clinical Dental Experience for the Kuwaiti Program I. 6 Credit Hours.

This course is for selected post-graduate students enrolled in the Kuwaiti Program at Temple University Kornberg School of Dentistry. Prior to participation in assigned clinics, the resident's knowledge and skills in the disciplines of direct and indirect restorative dentistry, prosthodontics, and endodontics are assessed. Needed review or update of skills and knowledge are obtained with either assigned exercises in the pre-clinic laboratory, assigned assisting in the AEGD clinic, or with assigned literature reviews.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ORBG 9886. Pre-clinical Dental Experience for the Kuwaiti Program II. 6 Credit Hours.

This course is for selected post-graduate students enrolled in the Kuwaiti Program at Temple University Kornberg School of Dentistry. Prior to participation in assigned clinics, the resident's knowledge and skills in the disciplines of direct and indirect restorative dentistry, prosthodontics, and endodontics are assessed. Needed review or update of skills and knowledge are obtained with either assigned exercises in the pre-clinic laboratory, assigned assisting in the AEGD clinic, or with assigned literature reviews.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ORBG 9991. Research in Oral Biology. 1 to 6 Credit Hour.

Limited to M.S. in Oral Health Sciences degree students with graduate program approval.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: Dentistry, Kornberg School.

Repeatability: This course may be repeated for additional credit.

ORBG 9993. Masters in Oral Health Sciences Qualification Exam. 1 Credit Hour.

Master of Science in Oral Health Sciences requires successful completion of the MS OHS Qualification Exam course prior to the student entering into their Masters scholarly activity/research project. All students must establish an advisory committee for their scholarly activity, which will be responsible for submitting grades for the Qualifying Exam, Masters Research, and Defense Presentation courses. The advisory committee will review and approve the student's proposed Masters protocol and monitor student's progress. Each Masters student must deliver a Qualifying Exam Presentation to their advisory committee, to describe and support their Masters project. The Masters project must be formally accepted by the student's advisory committee prior to commencing the project. A comprehensive proposal will be reviewed by the student's mentor and advisors, and will be presented in a qualifying exam presentation to demonstrate appropriate understanding of the project. This proposal contains an introduction, theories, hypotheses, scholarly literature review, research methods, proposed alternatives and any other issues relevant to the project.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: Dentistry, Kornberg School.

Repeatability: This course may be repeated for additional credit.

ORBG 9996. Master's Thesis in Oral Biology. 1 to 6 Credit Hour.

Limited to, and required of, M.S. in Oral Biology degree students with graduate program approval.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.