

# ADVANCED EDUCATION PROGRAMS

## Chair, Advanced Education Committee:

Mary P. Walker, DDS, PhD, Associate Dean for Research and Graduate Programs

The School of Dentistry offers curricula leading to advanced education dental certificates in each of four clinical areas; Endodontics, Orthodontics & Dentofacial Orthopedics, Periodontics and Advanced Education in General Dentistry (AEGD). In addition, the School of Dentistry offers curricula leading to Master of Science graduate degrees in either Oral and Craniofacial Sciences or Dental Hygiene Education. The School participates in the Interdisciplinary PhD program through the Department of Oral and Craniofacial Sciences (OCS). The OCS department research focus areas are: Biomaterials/Bioengineering of Biological Tissues & Replacements, Mineralized Tissue Biology and Translational and Clinical Research.

## Application Information & Deadlines

### Application Information

All applicants to the advanced education certificate programs (Advanced Education in General Dentistry, Endodontics, Orthodontics and Dentofacial Orthopedics, and Periodontics) require the Postdoctoral Application Support Services (PASS) application available at [www.adea.org](http://www.adea.org) (<http://www.adea.org/>). All sections of the PASS application should be completed fully. Official dental school transcripts should be submitted directly to PASS. A minimum dental school 3.0 GPA is required for applicants to all Advanced Education programs. Official National Dental Board Exam scores should be submitted directly to PASS if available. Scores will not be required for application review.

The GRE is required for all applicants applying to the Orthodontics program and is highly recommended for those applying to the Periodontics program. (For any Periodontics or Endodontics selected applicants interested in applying later for concurrent enrollment in the OCS MS program, the GRE will be required.) The ADAT is preferred but not required for the Advanced Education in General Dentistry, Endodontics, and for Periodontics programs. Across programs, scores should be self-reported (GRE) or Official scores submitted directly (NBDE & ADAT) on the PASS application. Official GRE scores should be submitted to directly to UMKC (GRE code is 6872). Be aware that approximately three weeks are required by the service to process PASS applications and deliver them to the designated programs. The length of this processing period should be considered by the candidate in order to meet relevant application deadlines. **An applicant copy of the PASS application should not be sent to UMKC.**

Applicants applying to any of the advanced education programs must be a U.S. citizen or permanent resident. Applicants must also submit evidence of graduation from a school of dentistry accredited by the American Dental Association or the Canadian Dental Association.

Residents accepted into the Endodontics, Orthodontics, and Periodontics programs directly after graduating from dental school must successfully pass a U.S. regional or equivalent Canadian clinical licensure exam prior to or no later than the end of the first year of residency (Spring semester). Applicants (all programs including AEGD), who have been out of dental school for a year or more, must successfully pass a clinical licensure exam before they start a UMKC residency. In addition, all Periodontics residents must be eligible for a Missouri Dental License by the end of their first year.

All applicants are required to submit the **Institutional Evaluation AND Professional Evaluation Form (PEF)** as part of their completed PASS application. A minimum of three professional evaluators (dental faculty) are required to submit evaluations for the PEF. Additional letters of recommendation should not be sent to UMKC.

Additional information, such as proof of US Citizenship or Permanent Residency, must be submitted directly to the UMKC School of Dentistry via the [UMKC application site](#). Documentation would include US passport, or Permanent Resident Card. This documentation upload is completed after the PASS application has been received by UMKC.

**Additional resumes, CVs, personal photos, or information not received as part of the PASS application will be destroyed upon receipt.**

The advanced education certificate programs in Periodontics or Orthodontics & Dentofacial Orthopedics participate in **the National Matching Services (MATCH)** process. Candidates to these programs must also register for this service within the ADEA PASS applicant portal ([www.adea.org](http://www.adea.org) (<http://www.adea.org/>)). There are two phases of the MATCH process, each with its deadline date for receipt of Rank Order List forms from applicants. The Phase I deadline (typically around mid-November each year) is for applicants to the Periodontics or Orthodontics & Dentofacial Orthopedics program.

General admissions questions concerning advanced education programs should be directed to the Office of Research and Graduate Programs at (816) 235-6342. However, specific questions regarding any advanced education program should be directed to the pertinent program director. Advanced education program directors along with their telephone numbers are identified in a subsequent section.

### Application Deadline

Application deadline dates for advanced dental certificate programs are as follows:

Advanced Education in General Dentistry	October 1
Endodontics	July 1
Orthodontics	September 1
Periodontics	August 15

The deadline date for receipt of applications at the school is one year before the anticipated enrollment in program.

## Financial Assistance

Please be advised that the information provided here is of a general nature only.

Newly admitted advanced dental education residents (such as AEGD, Endodontics, Orthodontics, and Periodontics) will receive information regarding financial aid. Residents who are interested in obtaining financial aid are advised to contact the Hospital Hill Financial Aid Office for more details and guidance.

Hospital Hill Financial Aid Office - Location Address: 1418 Health Sciences Building on UMKC Hospital Hill Campus.  
Office Hours: 8:00am-5:00pm Monday-Thursday  
(816) 235-6783  
FinAidHospitalHill@umkc.edu

There are three types of financial aid for advanced education residents:

1. Federal Stafford Unsubsidized Loans
2. Federal Graduate PLUS Loans
3. Private Student Loans

Separate financial aid applications are required for the summer term and for the fall/spring terms. Residents apply for loans via the FAFSA website [www.fafsa.gov](http://www.fafsa.gov) (<http://www.fafsa.gov/>). It is advised that residents consult the Hospital Hill Financial Aid Office for the priority application deadline and guidance in the application process.

## Enrollment Fees

Typical credit hour enrollment for advanced education residents is 5 credits in the Summer semester and 6 credit hours in the Fall and Spring semesters. This enrollment model applies for AEGD, Endodontics, Orthodontics & Dentofacial Orthopedics, and Periodontics certificate programs.

When taking 6 credit hours or fewer each semester, Missouri non-residents are not required to pay the out-of-state tuition rate.

## Academic Standards/Procedures: Advanced Education Residents/Students

The following academic standards and the procedures to be used in dealing with cases of academic difficulty apply to students in all advanced education/graduate programs of the School of Dentistry.

### Standards of Scholarship

1. Advanced education students, regardless of classification, must maintain a 3.0 (B) GPA for all coursework taken at UMKC.
2. Advanced education students must maintain a 3.0 (B) GPA in their dental certificate specialty coursework.
3. Any materials pertaining to patient records, program records, and any materials produced in relation to an Advanced Education or Graduate Program are the property of the University. Such materials include photos, study models, case presentations, research proposal, research data, thesis, research-related presentations and must be saved and preserved at designated storage sites. While students can have copies of presentations, data, and written documents for their records, students should not remove or delete these files and associated information from school computers and server spaces. Compliance with this policy is mandatory for continued program participation and graduation and will be monitored.

### Probation Policy

Whenever the overall GPA for UMKC courses taken for credit by an advanced education student of any classification falls below 3.0 (B), the student's status for the next term becomes "On probation - See principal graduate advisor." The principal graduate advisor will review the student's progress and provide counsel, and the following conditions apply:

1. Any advanced education or graduate student on probation who is not restored to good academic standing by the end of two successive semesters will be declared ineligible to re-enroll.
2. While on probation, an advanced education or graduate student must achieve a 3.0 term GPA to enroll for the ensuing term.
3. An advanced education or graduate student on probation will not be restored to good standing until a cumulative graduate-credit GPA of at least 3.0 is achieved.

### Dismissal

#### Following Academic Probation

1. An advanced education or graduate student who is on probation and fails to attain an overall GPA of at least 3.0 by the end of two successive semesters will be dismissed from the program.
2. An advanced education or graduate student who is on probation and fails to attain a 3.0 term GPA for the succeeding term will be dismissed.

3. An advanced education or graduate student who receives more than four credit hours of 2.0 (C) grades or a D or F grade in any course will be dismissed.

### **Due to Unsatisfactory Progress or Performance**

When an advanced education program, irrespective of a student's grade-point average, considers an advanced education student's performance to be unsatisfactory, the Program Director may recommend to Associate Dean for Research & Graduate Programs that the student be declared ineligible for further study. The Associate Dean reviews the recommendation and discusses with the Advanced Education Committee prior to notifying the student of the decision.

### **Appeal**

Any student who is dismissed from the program has the right to appeal that decision. Appeals shall be made in writing to the Associate Dean for Research and Graduate Programs within one week from the time the student received a notice of dismissal. The Associate Dean for Research and Graduate Programs in conjunction with the Chair of the Advanced Education Committee shall select a hearing panel of five members of the Advanced Education Committee to hear the student's appeal. At least one member of the hearing panel will be a student. The program director of the program in which the appealing student is enrolled shall be ineligible to sit on the panel. The Hearing Panel will be chaired by the Associate Dean for Research and Graduate Programs. A meeting of the Hearing Panel will be scheduled within two weeks of the receipt of the student's appeal. During the time the appeal process is being conducted the student shall be allowed to continue in the program. The Hearing Panel shall be provided with written statements from the student and the Program Director as well as all relevant records and documents. Both the Program Director and his or her designee and the appealing student must attend the hearing to provide additional information and answer questions from the Hearing Panel. Other individuals who have information relevant to the situation may be invited to present their information and answer questions for the committee. The student may have an advisor present to advise the student, but this advisor shall be limited to providing advice to the student.

After reviewing the information and conducting the hearing, the Hearing Panel shall make its recommendation regarding disposition of the case to the Dean. All five appointed members of the hearing panel shall have a vote. In case of a tie, the Associate Dean for Research and Graduate Programs shall cast the deciding vote. The Dean of the School of Dentistry will make the final decision and communicate that decision to the student and the Program Director.

## **Students in Cooperative Programs**

Students enrolled in programs operated jointly by the School of Dentistry, School of Medicine, and other institutions, such as Children's Mercy Hospital and Truman Medical Center, must remain in good standing with both organizations cooperating in the program. A student who is dismissed by either of the cooperating institutions is ineligible to continue in the program.

## **Graduate**

### **Advanced Education Certificate Programs**

- Dental Advanced Education Certificate Programs:
  - Advanced Education in General Dentistry
  - Endodontics
  - Orthodontics and Dentofacial Orthopedics
  - Periodontics

### **Biological Sciences Courses**

BIO-SCI 5700 Biomaterials Teaching Credits: 2

Through this course, students will acquire teaching experience in graduate and undergraduate biomaterials.

BIO-SCI 5710 Genetics and Biochemistry of Cranial Facial Biology Credits: 2

Biochemistry of oral structures and the effect of oral diseases on these structures. This course may not be used to satisfy Cell Biology and Biophysics or Molecular Biology and Biochemistry discipline-specific requirements for the Interdisciplinary Ph.D. programs.

BIO-SCI 5739 Biomaterials for the Dental Specialist Credit: 1

Discussion of basic biomaterials principles and terminology including explanation of physical, mechanical and surface chemical properties, metallurgy, polymer chemistry, ceramics and composites. Clinical examples of how these principles apply to Prosthodontics, Endodontics and Orthodontics will be presented. Students cannot take both this course and BIO-SCI 5742 for credit.

BIO-SCI 5740 Oral Pathology I Credits: 2

A study of the clinical and histopathologic features of oral diseases, including inflammatory, degenerative, metabolic, and neoplastic diseases and developmental disturbances.

BIO-SCI 5742 Biomaterials for the Restorative and General Dentist Credits: 2

A thorough discussion of basic biomaterials principles and how they apply to the practice of general and restorative dentistry. Students cannot take both this course and BIO-SCI 5739 for credit.

BIO-SCI 5743 Advanced Seminar in Dental Biomaterials Credits: 1-2

The use and behavior of dental biomaterials in Pediatric Dentistry, Prosthodontics, Orthodontics, and Restorative Dentistry will be discussed in depth. Current basic and clinical literature related to these areas will be discussed and research information to improve dental practice will be presented.

**Prerequisite:** BIO-SCI 5739 (or BIO-SCI 5742).

BIO-SCI 5747 Research Instrumentation Used in Dental Biomaterials Credits: 2-4

A discussion and laboratory use of instrumentation employed in dental biomaterials research. Practical hands-on experience will include calibration and use of specific research equipment including the Instron, metallurgical mounting and polishing equipment, measuring microscope, metallograph, and contact angle goniometer.

BIO-SCI 5750 Special Problems in Dental Biomaterials Credits: 2-4

The student will select or be assigned a special research problem including appropriate literature reviews of a special topic in dental biomaterials. Emphasis will be placed on the correlation between basic and clinical research. The design and conduct of clinical research will be discussed.

BIO-SCI 5751 Elements of the Scientific Method Credits: 1-2

For the MS, through individualized instruction with thesis committee chair, student will conduct a literature review in preparation for developing a research question leading to the thesis research proposal. For the PhD, students will select and rotate through a minimum of four laboratories in the Department of Oral Craniofacial Sciences (OCS) conducting a short research project in each. At the end of the semester, a report is required reviewing the research project and the instrumentation in each laboratory. Students are also required to attend the weekly Department of OCS Seminar Series and the monthly Professional Development Seminar Series. Research presentations cover a variety of biological, engineering and psychological disciplines relevant to oral science education and the oral health care profession. Presentations will be by faculty, students, and invited guest lecturers.

BIO-SCI 5752 Research Methods in Oral and Craniofacial Sciences Credits: 1-5

MS students will write the thesis research proposal in consultation with committee chair and members plus obtain appropriate IRB and/or IACUC approvals. For the MS degree qualifying exam, the student will write the research proposal, present the research proposal at a committee meeting, and answer related questions. Following the successful completion of the qualifying exam, the research proposal is the basis of the MS thesis project. For the PhD student, laboratory rotations will continue for a second semester as well as attendance at weekly OCS seminar series. As the student identifies a research advisor and research focus for the dissertation project, they will begin reviewing the literature.

**Prerequisites:** BIO-SCI 5751

BIO-SCI 5759 Special Problems in Pharmacology Credits: 2

Pharmacologic and therapeutic problems of special interest in the practice of dentistry.

BIO-SCI 5760 Physiology of Oral Mineralized Tissues Credits: 2

A study of the physiology of the oral hard tissues with emphasis on the mechanisms of the growth, remodeling, and healing of maxillomandibular bones and on the mechanism of dentinogenesis. This course may not be used to satisfy Cell Biology and Biophysics or Molecular Biology and Biochemistry discipline-specific requirements for the Interdisciplinary Ph.D. program.

BIO-SCI 5780 Teaching Of Dentistry Credits: 1-2

A consideration of the problems of teaching in dental schools. Each department of the School of Dentistry will report on its teaching methods. The student will observe lectures and laboratory teaching in each department.

BIO-SCI 5790 Directed Research In Oral and Craniofacial Sciences Credits: 1-6

Student utilizes beginning research skills to design, conduct and report an individual research project under the direction of the faculty.

BIO-SCI 5799 Research And Thesis Credits: 1-9

The satisfactory completion of an original research project. Results of the research and critical review of the pertinent literature are incorporated into a thesis. Credit is awarded after the student's thesis is successfully defended and accepted by the School of Graduate Studies.

BIO-SCI 5802 Immunopathology Credits: 2

A detailed study of selected topics in immunopathology with emphasis on physicochemical barriers such as cutaneous and mucosal immune systems.

BIO-SCI 5805 Molecular Biology of Oral Microflora Credits: 2-3

Lecture and discussion. The course will provide an overview of the ecology of oral microbial flora and its role in oral health and disease. Students will examine the taxonomy and ecology of normal and pathogenic oral microbial flora, acquisition of the oral microbiota and the formation of dental plaque as a biofilm. The course will also explore other aspects of microbial biology, such as; bacterial virulence factors and pathogenesis; host defense mechanisms; systemic complications of periodontal disease; antibiotics and antibiotic resistance. The second part of the course will review the effect of recent advances in molecular biology and protein biochemistry on oral diagnosis and treatment.

BIO-SCI 5830 Structural Characterization of Dental Biomaterials Credits: 3

A detailed study of the techniques commonly used to determine the composition and structure of dental biomaterials. Surface and near-surface characterization techniques will be emphasized. The student will be expected to complete laboratory projects on the scanning and transmission electron microscopies available in the School of Dentistry.

## Endodontics Courses

ENDO 5701 Endodontology 1 Credits: 1-6

This course is designed to introduce the first year endodontic resident to the field of advanced endodontics. It will provide introductory information and guidance which will serve as a basis for follow on course work in ENDO 5702 through ENDO 5706.

ENDO 5702 Endodontology 2 Credits: 1-6

This course is designed to continue the transition of the general dentist into a first year endodontic resident in the field of advanced endodontics. It will build upon material taught in previous courses of instruction as well as introduce completely new material to the resident.

ENDO 5703 Endodontology 3 Credits: 1-6

This course is designed to complete the transition of the general dentist into a first year endodontic resident in the field of advanced endodontics. It will build upon material taught in previous courses of instruction as well as introduce completely new material to the resident.

**Prerequisites:** ENDO 5701, ENDO 5702.

ENDO 5704 Endodontology 4 Credits: 1-6

This course is designed to transition the first year into a second year resident in the field of advanced endodontics. It will build upon material taught in previous courses of instruction as well as introduce completely new material to the resident.

**Prerequisites:** ENDO 5701, ENDO 5702, ENDO 5703.

ENDO 5705 Endodontology 5 Credits: 1-6

This course is designed to continue the transition of the general dentist into a more proficient second year resident in the field of advanced endodontics. It will build upon material taught in previous courses of instruction as well as introduce completely new material to the resident.

**Prerequisites:** ENDO 5701, ENDO 5702, ENDO 5703, ENDO 5704.

ENDO 5706 Endodontology 6 Credits: 1-6

This course is designed to complete the transition of the general dentist into a fully independently practicing endodontist. It will build upon material taught in previous courses of instruction as well as introduce completely new material to the resident.

**Prerequisites:** ENDO 5701, ENDO 5702, ENDO 5703, ENDO 5704, ENDO 5705.

## General Practice Courses

G-PRAC 5721 General Practice Clinic I Credits: 1-10

G-PRAC 5721 is the first clinical course leading to G-PRAC 5722. This is both a clinical and seminar course that reviews the concepts and principles in the delivery of advanced comprehensive dentistry. The clinical experience provides opportunities to apply and develop the necessary clinical skills and broaden their scope of practice in complex dental cases. Treatment planning of cases is accomplished one-on-one or as a group in treatment planning sessions.

G-PRAC 5722 General Practice Clinic II Credits: 1-10

This is a continuation of G-PRAC 5721 that is both a clinical and seminar course. The course reviews the concepts and principles in the delivery of advanced comprehensive dentistry. The clinical experiences provide opportunities to apply and develop the necessary clinical skills and broaden their scope of practice in complex dental cases. Progress and treatment planning of cases is accomplished one-on-one or as a group treatment planning session. Other seminar topics include: ethics, practice management, occlusion, TMJ, management of medical compromised patients, physical diagnosis, etc.

**Prerequisites:** G-PRAC 5721

G-PRAC 5723 General Practice Clinic III Credits: 1-10

This is a continuation of G-PRAC 5722 that is both a clinical and seminar course. The course reviews the concepts and principles in the delivery of advanced comprehensive dentistry. The clinical experiences provide opportunities for the resident to apply and develop the necessary clinical skills and broaden their scope of practice in complex dental cases. Treatment planning and chart reviews, i.e. progress review, of assigned patients and their care is accomplished one-on-one.

**Prerequisites:** G-PRAC 5721, G-PRAC 5722

## Orthodontics Courses

ORTHOD 5724 Growth and Development 1 Credit: 1

A course designed to teach the general principles of normal and abnormal physical, psychological and social growth and development of children and adolescents. The growth and development of the craniofacial structures is emphasized. The diagnosis of malocclusions is stressed. Consideration is given to possible approaches to their treatment.

ORTHOD 5725 Growth and Development 2 Credits: 1-2

A comprehensive study of the potential mechanisms of growth modifications and surgically assisted treatment modalities in growing patients.

**Prerequisites:** ORTHOD 5724.

ORTHOD 5726 Cephalometrics 1 Credits: 2

An introductory lecture and laboratory course in the principles of radiographic cephalometry and integrated cephalometric analysis. The course will consist of two components, one primarily didactic, the other more clinical with application to past, current, and future cases. This course is designed to prepare you for your entry into the clinic and upcoming diagnosis and treatment planning. Other elements of the course will assist you with future progress record detail-oriented treatment outcome assessment.

ORTHOD 5727 Cephalometrics 2 Credits: 2

An advanced lecture and laboratory course with emphasis on the use of a computer in cephalometric analysis. The course will address the importance of cephalometric superimpositions in cephalometrics.

**Prerequisites:** ORTHOD 5726.

ORTHOD 5741 Orthodontics and Dentofacial Orthopedics 1 Credits: 1-6

Orthodontic theory, treatment techniques and treatment of patients; includes current and historical concepts.

ORTHOD 5742 Orthodontic and Dentofacial Orthopedics 2 Credits: 1-6

Clinical orthodontics with relevant didactics and seminars. Orthodontic theory, treatment techniques and treatment of patients; includes current and historical concepts.

**Prerequisites:** ORTHOD 5741.

ORTHOD 5743 Orthodontics and Dentofacial Orthopedics 3 Credits: 1-6

Clinical orthodontics with relevant didactics and seminars. Orthodontic theory, treatment techniques and treatment of patients; includes current and historical concepts.

**Prerequisites:** ORTHOD 5742.

ORTHOD 5744 Orthodontics and Dentofacial Orthopedics 4 Credits: 1-6

Orthodontic theory, treatment techniques and treatment of patients; includes current and historical concepts.

**Prerequisites:** ORTHOD 5743.

ORTHOD 5745 Orthodontic and Dentofacial Orthopedics 5 Credits: 1-6

Clinical orthodontics with relevant didactics and seminars. Orthodontic theory, treatment techniques and treatment of patients; includes current and historical concepts.

**Prerequisites:** ORTHOD 5744.

ORTHOD 5746 Orthodontic and Dentofacial Orthopedics 6 Credits: 1-6

Clinical orthodontics with relevant didactics and seminars. Orthodontic theory, treatment techniques and treatment of patients; includes current and historical concepts.

**Prerequisites:** ORTHOD 5745.

ORTHOD 5747 Orthodontic and Dentofacial Orthopedics 7 Credits: 1-6

Orthodontic theory, treatment techniques and treatment of patients; includes current and historical concepts.

**Prerequisites:** ORTHOD 5746.

ORTHOD 5748 Orthodontics and Dentofacial Orthopedics 8 Credits: 1-6

Clinical orthodontics with relevant didactics and seminars. Orthodontic theory, treatment techniques and treatment of patients; includes current and historical concepts.

**Prerequisites:** ORTHOD 5747.

## Periodontics Courses

PERIO 5701 Periodontal Residency I Credits: 1-6

Clinical Periodontics with Related Didactics and Seminar. This first year course introduces the incoming resident to the principles and techniques in the field of advanced periodontics.

PERIO 5702 Periodontal Residency II Credits: 1-6

Clinical Periodontics with Related Didactic and Seminar. This first year course continues the instruction of the resident to the principles and techniques in the field of advanced periodontics.

**Prerequisites:** PERIO 5701.

PERIO 5703 Periodontal Residency III Credits: 1-6

Clinical periodontics, with related didactics and seminar. This first year course continues the instruction of the resident to the principles and techniques in the field of advanced periodontics, and builds upon the material taught in previous courses as well as introduces new information.

PERIO 5704 Periodontal Residency IV Credits: 1-6

Clinical periodontics with related didactics and seminar. This second year course is designed to transition the first year resident into a second year resident and builds upon the material taught in previous courses as well as introducing new information.

**Prerequisites:** PERIO 5701, PERIO 5702, PERIO 5703.



**PERIO 5705 Periodontal Residency V Credits: 1-6**

Clinical Periodontics with Related Didactics and Seminar. This second year course continues the instruction of the resident to the principles and techniques in the field of advanced periodontics, and builds upon the material taught in previous courses as well as introducing new information.

**Prerequisites:** PERIO 5704.

**PERIO 5706 Periodontal Residency VI Credits: 1-6**

Clinical Periodontics with Related Didactics and Seminar. This second year course is designed to build upon the In-depth knowledge base of the resident, as well as introducing new information, transitioning the student into a more proficient student in advanced periodontics.

**Prerequisites:** PERIO 5705.

**PERIO 5707 Periodontal Residency VII Credits: 1-6**

Clinical Periodontics with Related Didactics and Seminar. This third year course serves to transition the resident into a clinician who by repeated action exhibits in depth levels of knowledge and skill. It builds upon material previously taught.

**Prerequisites:** PERIO 5706.

**PERIO 5708 Periodontal Residency VIII Credits: 1-6**

Clinical Periodontics with Related Didactics and Seminar. This third year course serves to transition the resident into a clinician who by repeated action exhibits in depth levels of knowledge and skill. It builds upon material previously taught.

**Prerequisites:** PERIO 5707.

**PERIO 5709 Periodontal Residency IX Credits: 1-6**

Clinical Periodontics with Related Didactics and Seminar. This third year course is designed to build upon the in-depth information and knowledge base previously taught and completes the transition of the student into a proficient specialist in periodontology.

**Prerequisites:** PERIO 5708.

**PERIO 5719 Implantology Credits: 2**

This 2 credit hour seminar is designed for a resident in the Advanced Education Program in Periodontology to develop in-depth knowledge of the concepts and theories of implant dentistry as they relate to periodontist. It will provide basic and advanced information and guidance which will serve to complement course work in PERIO 5702 through PERIO 5709, and the clinical implant dentistry experience offered in the program, at a minimum to a level of competency.

**PERIO 5720 General Anesthesia Credit: 1**

A rotation to the Department of Anesthesiology of Truman Medical Center, Lakewood. Residents become familiar with operating room procedures, medical emergencies, venipuncture, airway maintenance and pharmaco-physiology of sedative, analgesic and anesthetic agents as well as drug interactions.

**PERIO 5799 Research and Thesis Credits: 1-6**

Required research course for periodontics residents not concurrently enrolled in the Oral and Craniofacial Sciences MS program. This course is designed to build upon the in-depth knowledge base of the advanced education student, as well as introducing new information, transitioning the student into a more proficient student in understanding and implementing basic research skills and evaluating scientific studies.

**Prerequisites:** RES-ME 5700; RES-ME 5704

## **Research Methodology-Dentistry Courses**

**RES-ME 5700 Introduction to Research Methodology Credits: 2-3**

This lecture/discussion course will facilitate student's understanding of terminology and key concepts of research methodology and design. Assigned exercises are designed to demonstrate application of research design principles, and to increase advanced education residents' and graduate students' competency in evaluating and planning scientific studies. This knowledge is indispensable for conducting meaningful research in advanced education certificate, masters of doctoral level programs.

**RES-ME 5703 Thesis Writing Credit: 1**

The methods of preparing, organizing, and presenting research findings using scientific writing format will be reviewed for completing a thesis. This course is required for the Master of Science degrees in Oral Craniofacial Sciences.

**RES-ME 5704 Introduction to Biostatistics Credits: 2-3**

A lecture/seminar course required for students/residents pursuing an advanced education residency certificate or a master's degree. This course focuses on an in-depth coverage of statistical designs commonly found in dental research, statistical techniques associated with these designs, application to them via the use of a computer based statistical software analysis package, and the interpretation of statistical tests.

**Prerequisites:** RES-ME 5700.