<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>GADS 5001</td>
<td>Biostatistics Intro to Biostatistics</td>
<td>0.75-2.25</td>
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<tr>
<td>GADS 5002</td>
<td>Biostatistics The course will provide a summary</td>
<td>1-2.5</td>
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<td></td>
<td>of the main statistical concepts. Some of the</td>
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<td></td>
<td>topics will include data displays, summary</td>
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<td></td>
<td>statistics, probability distributions and</td>
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<td></td>
<td>expectation, statistical inference procedures</td>
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<td></td>
<td>for univariate and bivariate data, linear</td>
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<td></td>
<td>regression models, and analysis of variance.</td>
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<tr>
<td>GADS 5011</td>
<td>Systematic Reviews The course introduces</td>
<td>0.5-2</td>
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<tr>
<td></td>
<td>methods to perform systematic reviews and meta-</td>
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<td></td>
<td>analysis of clinical trials.</td>
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<tr>
<td>GADS 5012</td>
<td>Systematic Review An introduction to Evidence-</td>
<td>2</td>
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<td></td>
<td>Based Dentistry (EBD) Steps and description of</td>
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<td></td>
<td>the EBD process, benefits and challenges for</td>
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<td>the dental profession. Review EBD publications</td>
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<td>and how commentaries can be useful for</td>
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<td>understanding study methodology. Discuss the</td>
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<td></td>
<td>overall architecture of The Cochrane Library,</td>
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<td>introduction to formulation of the research</td>
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<td>question (PICO). Interactive discussion for</td>
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<td>selecting possible search terms in preparation</td>
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<td>for the database searches Introduction to the</td>
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<td>Preferred Reporting Items for Systematic</td>
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<td>Reviews and Meta-Analyses (PRISMA) tools.</td>
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<td>GADS 5021</td>
<td>Head and Neck Anatomy The course will provide</td>
<td>2</td>
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<tr>
<td></td>
<td>a review of principal anatomy comprising the</td>
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<td></td>
<td>stomatognathic system.</td>
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<tr>
<td>GADS 5032</td>
<td>Osteoimmunology The course will provide</td>
<td>0.75-2</td>
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<tr>
<td></td>
<td>information about bone biology and metabolism</td>
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<td></td>
<td>and how it interfaces with the host immune</td>
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<td></td>
<td>response.</td>
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<td>GADS 5042</td>
<td>Pharmacology The course will provide information</td>
<td>0.75-2.25</td>
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<tr>
<td></td>
<td>about basic pharmacology and give the students</td>
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<td>a better understanding of drugs, interpreting</td>
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<td>complicated drug medical histories, and</td>
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<td></td>
<td>understanding drug reactions.</td>
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<tr>
<td>GADS 5052</td>
<td>Wound Healing The course includes information</td>
<td>0.5-2</td>
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<tr>
<td></td>
<td>given by experts in the basic and/or</td>
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<td></td>
<td>clinical sciences. The first seven lectures</td>
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<td></td>
<td>cover the basic biologic aspects of wound</td>
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<td>healing. These are followed by a series of</td>
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<td>five lectures discussing wound healing in a</td>
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<td>more clinical context covering the topics of</td>
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<tr>
<td></td>
<td>fracture repair, osseointegration, orthodontics,</td>
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<td>endodontics and periodontics.</td>
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<td>GADS 5061</td>
<td>Maxillofacial Radiology The course will provide</td>
<td>0.25-1.25</td>
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<tr>
<td></td>
<td>in depth discussion about radiographic</td>
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<td>interpretation and differential diagnosis of</td>
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<td>various pathological conditions which show</td>
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<td>similarities on x-rays.</td>
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<td>GADS 5071</td>
<td>Ethics The courses is to impart a general</td>
<td>0.25</td>
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<td>knowledge of fundamental concepts in principles</td>
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<td>of professionalism and ethical decision making</td>
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<td>with emphasis on care-based discussions.</td>
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<td>GADS 5081</td>
<td>Grand Rounds Conference This conference based</td>
<td>0.25-1.5</td>
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<td>course will provide an understanding of the</td>
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<td>sequential management of multidisciplinary</td>
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<td>cases from a diagnostic and treatment basis.</td>
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<td>It will involve student presentations from each</td>
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<td>specialty followed by panel discussion.</td>
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<td>GADS 5082</td>
<td>Interdisciplinary Seminars Grand Rounds This</td>
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<td>conference based course will provide an</td>
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<td>understanding of the sequential management of</td>
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<td>multidisciplinary cases from a diagnostic and</td>
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<td>treatment basis. It will involve student</td>
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<td>presentations from each specialty followed by</td>
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<td>panel discussion.</td>
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<td>GADS 5111</td>
<td>Adv Oral Surgery Advanced oral surgery</td>
<td>0.5</td>
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<td>GADS 5201</td>
<td>Topic Presentation I The students deliver</td>
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<td>evidence based Keynote or PowerPoint presentations on a topic of their choice followed by discussion.</td>
<td>1.5 Credit Hour</td>
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<tr>
<td>GADS 5212</td>
<td>Topics Presentation II The students deliver</td>
<td>2</td>
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<td>evidence based Keynote or PowerPoint presentations on a topic of their choice followed by discussion.</td>
<td>2 Credit Hours</td>
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<tr>
<td>GADS 5221</td>
<td>Literature Review I Review and discussion of</td>
<td>Fall</td>
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<td></td>
<td>current and classic literature topics</td>
<td>1 Credit Hour</td>
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<td>GADS 5232</td>
<td>Literature Review II Review and discussion of</td>
<td>1 Credit Hour</td>
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<td>current and classic literature topics</td>
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<tr>
<td>GADS 5241</td>
<td>Literature Review III Review and discussion of</td>
<td>1 Credit Hour</td>
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<td>current and classic literature topics</td>
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<tr>
<td>GADS 5252</td>
<td>Literature Review IV Review and discussion of</td>
<td>Spring</td>
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<td>current and classic literature topics</td>
<td>1 Credit Hour</td>
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<tr>
<td>GADS 5262</td>
<td>In-Service Exam Pediatric dentistry comprehensive exam</td>
<td>0.25 Credit Hours</td>
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<tr>
<td>GADS 5271</td>
<td>Endodontic Rotation Fall Clinical rotations in</td>
<td>Fall</td>
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<td></td>
<td>specific specialty clinics will provide clinical</td>
<td>3-6</td>
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<td>experience in diagnosis, treatment planning, and</td>
<td>Credit Hours</td>
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<td>patient care through observation.</td>
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<td>GADS 5272</td>
<td>Endodontic Rotation Endodontic Rotation</td>
<td>3</td>
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<td>3 Credit Hours</td>
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</table>
GADS 5302 Pathology
The course will provide information about the link between the basic and clinical sciences concerned with the mechanisms of disease (e.g., inflammation, neoplasia, and immunopathology). While the emphasis will be on oral pathology, systemic diseases and their impact on overall health will also be discussed.
0.25 Credit Hours

GADS 5311 Biological Systems
The course combines an introduction to the general principles of anatomy, histology, and physiology of the human cardiovascular, pulmonary and renal systems, with an extensive study of the pathology and therapeutics of these systems, with an explicit emphasis on their relationship to dental practice.
4 Credit Hours

GADS 5322 Oral Medicine
The purpose of this course is to provide foundational and applied knowledge of common oral medicine-related conditions as well as an understanding of medical conditions which directly affect the oral and maxillofacial structures.
0.5-2 Credit Hours

GADS 5331 Brightman Conference
This conference provides residents with didactic training in the fundamentals of oral medicine.
1 Credit Hour

GADS 5332 Brightman Conference II
The conference provides information about the fundamentals of oral medicine.
1-2.5 Credit Hours

GADS 5341 S. Gary Cohen Conference
The course will allow academic discussion of disease, disease processes, and therapeutic management of a wide range of topics related to oral medicine.
1.5 Credit Hour

GADS 5342 Cohen Conference II
The course will allow academic discussion of disease, disease processes, and therapeutic management of a wide range of topics related to oral medicine.
1.5-3 Credit Hours

GADS 5351 Oral and Maxillofacial Complex I
The Diagnostic Oral pathology and Radiology course is designed to give the dental student an understanding of the diagnosis of diseases pertaining to head and neck as well as interpreting histologic and radiographic investigations.
3 Credit Hours

GADS 5352 Oral and Maxillofacial Complex
The course will provide in depth discussion of the link between the basic and clinical sciences concerned with the mechanisms of disease (e.g., inflammation, genetic disease, neoplasia, and immunopathology). The emphasis will be on oral soft and hard tissue pathology, including oral manifestations of systemic diseases that may impact overall health of the patients.
2-3.5 Credit Hours

GADS 5362 Oral Medicine Rotation
Clinical rotations in specific specialty clinics will provide clinical experience in diagnosis, treatment planning, and patient care through observation.
6 Credit Hours

GADS 5492 Clinicopathologic Conference
Oral Surgery conference
0.25 Credit Hours

GADS 5501 Orthodontics
The course provides information about the growth and development, concentrating on child somatic, craniofacial, and dental growth and development. The students will build a solid foundation along the lines of diagnosing problems and understanding the etiology of malocclusion and space maintenance.
1.5-3.5 Credit Hours

GADS 5502 Adjunctive Ortho Technique
This course is designed to expose the student to basic orthodontic laboratory and clinical procedures and encourages the development of technical abilities in banding, bonding, wire bending, and removable appliance fabrication.
0.5 Credit Hours

GADS 5511 Penn Orthodontics CE – Fall
Pending
0.75 Credit Hours

GADS 5512 Orthodontics II
The course will provide the student with experience in early orthodontic treatment, exposing him/her to malocclusions arising in a normally developing craniofacial complex. Management of these problems aims at providing an unimpeded eruption and alignment of the permanent dentition. Other topics include biological and mechanical principles of tooth movement as well as corrective orthodontics.
0.5-1.5 Credit Hour

GADS 5521 Case Presentation I
The students attend the case presentation seminars.
0.25-1 Credit Hour

GADS 5522 Case Presentation II
The students attend the case presentation seminars.
0.5 Credit Hours

GADS 5531 Growth & Development II
Pending
0.75 Credit Hours

GADS 5532 Biomechanics
Pending
0.75 Credit Hours

GADS 5541 Interceptive Orthodontics
Pending
0.5 Credit Hours

GADS 5542 Literature Review
Pending
0.5 Credit Hours

GADS 5551 Comprehensive Orthodontic Treatment
Pending
0.5 Credit Hours

GADS 5552 Orthognathic Surgery/TMJ Lecture Series
The students attend the orthognathic surgery seminars and TMJ lecture series.
0.25-1 Credit Hour

GADS 5561 Penn Orthodontic Department Lecture Series I
The course will provide the students various topics in Orthodontics described above.
Fall
1.25 Credit Hour
GADS 5562 Case Presentation I
pending
0.25-1.5 Credit Hour

GADS 5571 Orthognathic Surgery/TMJ Lecture Series I
The students attend the orthognathic surgery seminars and TMJ lecture series.
0.25-1.5 Credit Hour

GADS 5572 TMD Diagnosis & Therapy
pending
0.75 Credit Hours

GADS 5582 Orthodontics Rotations
Clinical rotations in specific specialty clinics will provide clinical experience in diagnosis, treatment planning, and patient care through observation.
4-7 Credit Hours

GADS 5591 Orthodontics II
The course will provide the student with experience in early Orthodontic treatment, exposing them to malocclusions arising in a normally developing craniofacial complex. Other topics include biological and mechanical principles of tooth movement as well as interceptive and comprehensive corrective Orthodontics.
1-2.5 Credit Hours

GADS 5592 Penn Orthodontic Department Lecture Series II
The course will provide the students various topics in Orthodontics described above.
Spring
1.25 Credit Hour

GADS 5601 Pathology
Pathology is a course that will apply what students have already learned to the study of disease. It is an essential link between the basic and clinical sciences concerned with the mechanisms of disease (e.g., inflammation, neoplasia, and immunopathology) and the disease processes that students will encounter during their careers in dentistry. While the emphasis will be on oral pathology, one must also be familiar with systemic diseases that may impact on the health of the patients.
0.25 Credit Hours

GADS 5602 Maxillofacial Trauma
pending
0.25 Credit Hours

GADS 5611 Embryology, Genetics, Congenital Malformation
The program includes the core basic science courses, designed to encompass the various disciplines basic to advanced studies in the science and practice of dentistry. They are designed to expose students to modern concepts in the areas covered with the objective of updating and expanding upon their predoctoral knowledge of oral biology. The courses are designed to meet the requirements of the different specialty organizations. All programs are presented on an academic term basis.
0.25 Credit Hours

GADS 5612 Nitrous Oxide Nitrous Oxygen Analgesia
This course is designed to provide didactic and clinical instruction in nitrous oxide/oxygen analgesia in accordance with American Dental Association Guidelines. Upon completion of this course, the participant will be eligible for an Anesthesia Restricted Permit II from the Pennsylvania State Board of Dentistry. Participants will have the opportunity to administer (to each other and patients) and undergo nitrous oxide sedation under close supervision. The course is geared to general dentists and dental specialists.
1 Credit Hour

GADS 5621 Introduction to Pediatric Dentistry Fall
A comprehensive course to provide an overview of main topics in Pediatric Dentistry including diagnosis, rationale for treatment and description of basic treatment techniques.
2 Credit Hours

GADS 5622 Introduction to Pediatric Dentistry Spring
A comprehensive course to provide an overview of main topics in Pediatric Dentistry including diagnosis, rationale for treatment and description of basic treatment techniques.
2 Credit Hours

GADS 5631 Comprehensive Review of Pediatric Dentistry I
The course is a more in depth/advanced presentations in several areas of Pediatric Dentistry through case presentations by medical and dental professionals.
Spring
4-6.5 Credit Hours

GADS 5632 Comprehensive Review of Pediatric Dentistry II
The course is a continuation of the Introduction to Pediatric Dentistry course and includes a more in depth/advanced presentations in several areas of Pediatric Dentistry through case presentations by medical and dental professionals.
4-7 Credit Hours

GADS 5642 Pediatric Rotation
Clinical rotations in specific specialty clinics will provide clinical experience in diagnosis, treatment planning, and patient care through observation.
4-7 Credit Hours

GADS 5652 Embryology, Genetics, and Congenital Malformation
This course will provide information about the persistent problems associated with cleft lip/palate and other types of craniofacial anomalies throughout lifetime of patients and include a thorough discussion of past and current concepts.
0.25-1.5 Credit Hour

GADS 5662 Trauma
The course provides students with an understanding of how to evaluate a patient presenting with dental trauma, the review of biological sequelae, and formulate a treatment plan and prognosis.
0.25-1.5 Credit Hour

GADS 5701 Implant Dentistry
Begin to develop a didactic basis for the development of a clinical competency in providing patient care to dentate, as well as partially and totally edentulous patients. Utilizing operative dentistry, fixed prosthodontics, removable prosthodontics and dental implants as restorative modalities will be emphasized.
1 Credit Hour

GADS 5702 Classic and Current Literature Review Spring
Students gain a fundamental knowledge of periodontal diseases and treatments through review of classic periodontal literature
3 Credit Hours

GADS 5711 Introduction to Periodontology
The course will provide information about the current basic biological concepts applied to the healthy and diseased periodontium, the etiology, pathogenesis, and epidemiology of periodontal diseases. Different forms of periodontal diseases, non-surgical and surgical therapeutic modalities, multidisciplinary treatment approaches, and information on the prognosis of periodontal therapy will be discussed.
3 Credit Hours
GADS 5712 Periodontics Case Presentation Spring
Critical review and discussion of current concepts of surgical techniques and treatment in periodontology through case presentation.
1.25 Credit Hour

GADS 5721 Classic and Current Literature Review
This course aims to review and critically analyze classic and current periodontal literature, to acquire thorough knowledge of periodontal disease onset, progression, and treatment modalities, and to prepare those who are eligible for certification by the American Board of Periodontology.
3 Credit Hours

GADS 5722 Periodontal Prosthesis Case Presentation Spring
Critical review and discussion of current concepts of surgical techniques and treatment in Periodontal Prosthesis through case presentation.
2.25 Credit Hours

GADS 5731 Periodontics Case Presentation
Critical review and discussion of current concepts of surgical techniques and treatment in periodontology through case presentation.
1.25 Credit Hour

GADS 5732 Fundamentals of Periodontics Spring
A comprehensive course to provide an overview of periodontal anatomy, diagnosis and classification, rationale and basic techniques for periodontal therapy. Special emphasis is given to the correlation between histologic and clinical characteristics.
3 Credit Hours

GADS 5741 Periodontal Prosthesis Case Presentation Fall
Critical review and discussion of current concepts of surgical techniques and treatment in Periodontal Prosthesis through case presentation.
2.25 Credit Hours

GADS 5742 Periodontics Rotation
Two 3 week observational periods in the Periodontics Clinic
6.25 Credit Hours

GADS 5751 Fundamentals of Periodontics Fall
A comprehensive course to provide an overview of periodontal anatomy, diagnosis and classification, rationale and basic techniques for periodontal therapy. Special emphasis is given to the correlation between histologic and clinical characteristics.
3 Credit Hours

GADS 5781 Introduction to Advanced Removable Prosthodontics
The fundamentals of removable prosthodontics (complete denture and partial removable dental prosthesis) and the concepts of occlusion, articulators as well as implant retained and supported removable prosthesis laboratory steps are discussed.
0.5-1.5 Credit Hour

GADS 5812 Treatment Plan Seminar II
The course involves clinical case presentations and aims to develop skills in diagnosis, prognosis, and treatment planning and maintenance and treatment outcomes assessment of patients with complex prosthodontic needs.
2.75 Credit Hours

GADS 5821 Literature Review Seminar
The seminar includes the review, critical evaluation and discussion of prosthodontic classic and current literature with an intent to help participants develop and comprehend an evidence-based approach to oral health care and patient management with a focus on prosthodontic procedures.
0.5-2 Credit Hours

GADS 5822 Occlusion
The Diagnostic Oral Pathology and Radiology course is designed to give the dental student an understanding of the diagnosis of diseases pertaining to head and neck as well as interpreting histologic and radiographic investigations.
0.5 Credit Hours

GADS 5831 Treatment Plan Seminar
The course involves clinical case presentations and aims to develop skills in diagnosis, prognosis, and treatment planning and maintenance and treatment outcomes assessment of patients with complex prosthodontic needs.
0.5-2 Credit Hours

GADS 5832 Prosthodontics Rotation
Clinical rotations in specific specialty clinics will provide clinical experience in diagnosis, treatment planning, and patient care through observation.
5-7 Credit Hours

GADS 5841 Current Literature Review Seminar
A monthly seminar series discussing current literature in the full scope of prosthodontics and relevant sciences.
0.5 Credit Hours

GADS 5842 Current Literature Review Seminar II
A monthly seminar series discussing current literature in the full scope of prosthodontics and relevant sciences.
0.25-1.5 Credit Hour

GADS 5852 Current Literature Review Seminar
Pending
0.5 Credit Hours