

**BOSTON UNIVERSITY INSTITUTE FOR DENTAL RESEARCH  
AND EDUCATION DUBAI**



**PROSTHODONTICS**

**MANUAL**

2008 - 2009

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## **Introduction**

This manual reviews the BUIDRE postdoctoral program in Prosthodontics and includes policies and procedures of the Prosthodontic Program. It has been prepared by the faculty and staff as a guide for the students at BUIDRE. It is supplemented by the general Student Policies and Procedures Manual distributed by the Office of the Chief Academic Officer at orientation.

The clinical program and requirements demand a high level of responsibility and self-discipline. Effective patient management will help you achieve your academic and clinical goals. Early familiarity with program requirements and clinical procedures will maximize your learning. Your patients rely on you for information, advice and expert treatment. Your ability to respond to your patients' needs accurately and confidently will depend on your complete familiarity with clinical procedures, program requirements and the patient record systems.

It is your responsibility to acquaint yourself thoroughly with the information in this Program Manual.

## **Mission Statement**

The mission of Boston University School of Dental Medicine is to provide excellent education to dental professionals throughout their careers, to shape the future of dental medicine and dental education through research, to offer excellent health care services to the community, to participate in community activities, and to foster a respectful and supportive environment. The Boston University Institute for Dental Research and Education Dubai (BUIDRE) shares this mission.

The Boston University Institute for Dental Research and Education Dubai intends to assist Dubai Healthcare City in fulfilling its mission of becoming an “Integrated Center of Excellence in the region for specialist medical and clinical services, medical education and life science research.”

BUIDRE’s mission is to become:

- a high-quality, full service, prevention oriented dental care center,
- an academic center providing dental education programs comparable to Boston University’s postdoctoral dental education programs and providing science-based continuing dental education to professionals in the region, and
- a center for dental research and dental research training.

## Organization of BUIDRE

Chief Academic Officer: **Dr. Thomas B. Kilgore**

Dental Director: **Dr. Dina Debaybo**

Chairman: **Dr. Dan Nathanson**

Program Director: **Dr. Steven Morgano**

Program Coordinator: **Dr. Nawaf AIDousari**

### **Faculty:**

#### *Full time:*

**Thomas B. Kilgore**, Chief Academic Officer; Associate Dean for Advanced Education and International Programs; Professor of Oral and Maxillofacial Surgery.

**Nawaf AIDousari**, Assistant Professor of Prosthodontics.

**Maher Atassi**, Assistant Clinical Professor of Prosthodontics.

**Haneen Bokhadhoor**, Assistant Professor of Periodontology.

**Dina Debaybo**, Associate Professor of Pediatric Dentistry.

**Manal Halabi**, Assistant Professor of Pediatric Dentistry

**Ralph Hawkins**, Associate Professor of Endodontics.

**Elif Keser**, Assistant Professor of Orthodontics.

#### *Visiting:*

**John Ictech Cassis**, Director of Advanced Education in General Dentistry, Postgraduate Operative and Esthetic Programs, Clinical Professor of Restorative Sciences and Biomaterials.

**Wendy Cheney**, Program Director of Advanced Education in Pediatric Dentistry; Associate Clinical Professor of Pediatric Dentistry.

**Serge Dibart**, Clinical Director of Postdoctoral Periodontology; Professor of Periodontology and Oral Biology.

**Victor S. Dietz**, Program Director of Advanced Education in Orthodontics, Associate Clinical Professor of Orthodontics.

**Anthony A. Gianelly**, Chairman *ad interim*, Department of Orthodontics; Professor of Orthodontics.

**Christopher V. Hughes**, Chairman of the Department of Pediatric Dentistry, Associate Professor of Pediatric Dentistry.

**Jeffrey W. Hutter**, Dean *ad-interim*, Professor and Chairman of the Department of Endodontics, Program Director of Advanced Education in Endodontics.

**Steven M. Morgano**, Program Director of Advanced Education in Prosthodontics, Professor of Restorative Sciences and Biomaterials.

**Dan Nathanson**, Professor and Chairman, Department of Restorative Sciences and Biomaterials.

**Frank G. Oppenheim**, Professor and Chairman, Department of Periodontology and Oral Biology.

**Ramzi Sarkis**, Assistant Professor, Department of Endodontics, Director of Educational Planning, Office for Advanced Education and International Programs.

**Thomas E. Van Dyke**, Program Director, Department of Periodontology and Oral Biology, Director Clinical Research Center, Professor of Periodontology and Oral Biology.

## **Prosthodontic Program Goals and Objectives**

### **Educational**

**Goal I:** To enable students to attain skills representative of a clinician proficient in the theoretical and practical aspects of the specialty of Prosthodontics.

**Objective 1:** All students will develop proficiency planning and evaluating treatment for patients with various complex prosthodontic needs.

**Objective 2:** All students will develop proficiency in: (a) the collection, organization and interpretation of diagnostic data; (b) developing a comprehensive, multidisciplinary treatment plan and determining a diagnosis (c) case presentation; (d) the critical evaluation of results of treatment.

**Objective 3:** All students will develop proficiency in the use of the services of professional allied dental personnel.

**Objective 4:** All students will develop proficiency in the use of adjustable articulators to develop an integrated occlusion for opposing arches.

**Objective 5:** All students will develop proficiency in complete and partial coverage restorations.

**Objective 6:** All students will develop proficiency in the restoration of endodontically treated teeth.

**Objective 7:** All students will develop proficiency in fixed Prosthodontics.

**Objective 8:** All students will develop proficiency in removable partial dentures.

**Objective 9:** All students will develop proficiency in complete dentures.

**Objective 10:** All students will develop proficiency in implant-supported and/or retained prosthesis.

**Objective 11:** All students will develop competency in the treatment of geriatric patients and patients with temporomandibular disorders.

**Objective 12:** All students will be exposed to patients requiring pre-prosthetic surgical procedures.

**Objective 13:** All students will serve as first assistants and/or primary surgeons for implant surgery.

- Objective 14:** All students will obtain in-depth knowledge of: (a) fixed Prosthodontics, (b) implant Prosthodontics, (c) occlusion and (d) removable Prosthodontics.
- Objective 15:** All students will obtain knowledge at the understanding level in: (a) biomaterials, (b) geriatrics, (c) maxillofacial prosthetics, (d) pre-prosthetic surgery, (e) implant placement (f) temporomandibular disorders and orofacial pain, (g) management of medical emergencies, (h) diagnostic radiology (i) research methodology, and (j) patient classification.
- Objective 16:** All students will obtain knowledge at the familiarity level in: (a) endodontics, (b) periodontics, (c) orthodontics, (d) sleep disorders, (e) intraoral photography, (f) practice management, (g) behavioral sciences, (h) ethics, (i) biostatistics, (j) scientific writing, and (k) teaching methodology.
- Objective 17:** All students will be provided with didactic and clinical instruction that is of high academic standards and that meets their needs and interests.
- Objective 18:** All students will receive information relative to certification by the American Board of Prosthodontics. If the program becomes accredited by the Commission on Dental Accreditation, all students will be encouraged to become board certified.

## Research

- Goal II:** To prepare students who are enrolled in the MSD and DScD degree program for future roles in the areas of laboratory and clinical research.
- Objective 19:** Students will be enrolled in a combined CAGS/MSD program and will conduct research related to the specialty of Prosthodontic.

## Patient Care

- Goal III:** During their program, students will provide high quality prosthodontic care.
- Objective 20:** All clinical prosthodontic care will be directly supervised by the clinical faculty to ensure a high level of care.
- Objective 21:** All student and professional laboratory procedures will be reviewed by the quality assurance coordinator for the laboratory and/or by the Program Coordinator.

## Service

- Goal IV:** To allow the prosthodontic students to become involved in service to the profession and service to BUIDRE at large.
- Objective 22:** Faculty of the postdoctoral prosthodontic program will conduct continuing dental education courses for the local dental community on a regular basis.

## **Prosthodontic Program Description**

### **Certificate of Advanced Graduate Study (CAGS)**

BUIDRE has developed rigorous and challenging specialty programs in which students first establish a firm theoretical foundation through a group of well-designed courses and then assume responsibility for direct patient care with close supervision and feedback.

BUIDRE has a special commitment to outstanding patient care. One manifestation of this commitment is our excellent and experienced faculty who work intensively with students on a one-to-one basis.

The CAGS program is a three-year program integrated with the MSD program, in which students follow a course of classroom study and clinical patient care under faculty supervision leading to clinical proficiency in the field of periodontology.

### **Master of Science in Dentistry (MSD)**

Students who are admitted to a CAGS will concomitantly pursue the Master of Science in Dentistry. The programs are combined clinical and research programs. Students will have three years of clinical experience and three years to develop a research proposal, collect data and write and defend their thesis. In any one year, students will spend approximately 1/3 of their time pursuing research and 2/3 of their time in clinical study and practice. On completion of the requirements, the MSD degree is awarded in the same area as the CAGS.

Candidates for the MSD degree are required to pass all assigned courses and demonstrate progress in their area of research throughout the three years of the program. The number of courses that may be transferred to an MSD program is explained in more detail in the Policy on Transfer of Courses, Course Exemptions, and Academic Performance in the BUIDRE Catalog. Candidates plan their courses in consultation with the major advisor and in accordance with the requirements of their major field. Coursework may be in formal courses, seminars, and research in proportion to the particular needs and backgrounds of the candidates as worked out in consultation with the major advisor. Requirements for the MSD include completing a major research project and thesis of professional caliber under faculty supervision. The goal is for students to develop the ability to focus, analyze, and organize complex data to address an issue in a way that contributes to the literature.

### **CAGS / MSD**

The goal of the combined CAGS/MSD program is to prepare graduates for productive careers in both basic research and clinical dentistry. Consequently, the program requires a laboratory research thesis or field project. The degree/certificate program requires a minimum of three years of study and leads to both the Certificate of Advanced Graduate Studies in the dental specialty and the Master of Science in Dentistry degrees. The program may be longer than three years depending on specific department requirements. In the CAGS/MSD program, the specific course requirements of the Master of Science in Dentistry can be satisfied by the regular CAGS

curriculum. The remainder of courses required for the MSD degree can, therefore, be fulfilled through directed study and research credits.

### **Certificate of Advanced Graduate Studies in Prosthodontics and Master of Science in Dentistry in Prosthodontics**

The 36-month combined CAGS/MSD program in fixed, removable, and implant prosthodontics provides the candidate with clinical proficiency and comprehensive knowledge of the diagnosis, treatment planning, rehabilitation, and maintenance of oral function, comfort, appearance, and health of patients with missing/damaged teeth and orofacial defects by using biocompatible artificial substitutes. The curriculum includes didactic and clinical instruction in complete dentures, removable partial dentures, fixed prosthodontics, implant dentistry (including implant surgery), geriatrics, temporomandibular disorders, and maxillofacial prosthodontics. The didactic background and the clinical and laboratory skills of these areas of prosthodontics are stressed.

Emphasis is placed on the periodontal integrity of the patient and the supportive therapy of all other disciplines in achieving total patient care. This integration is achieved through interdisciplinary seminars with the other specialties and through coordinated treatment planning.

The intensive and systematized library reading assignments and literature review seminars are an important aspect of the curriculum. They are designed to acquaint the student with the principal facets of the prosthodontic specialty, evidence-based health care, and methods of critically reviewing the dental literature.

The MSD degree entails a research project, thesis, and thesis defense and is an integral component of the 36-month program.

### **Competencies and Proficiencies**

To graduate from the prosthodontic program, each student must demonstrate proficiency in the diagnosis, treatment planning and treatment of a wide range of prosthodontic patients with various categories of need. A proficient prosthodontist refers to an individual with the knowledge, skills and values to independently and consistently perform quality prosthodontic care.

A graduate of the advanced educational program in prosthodontics will be proficient and competent in the following areas:

All students will develop proficiency in:

1. Planning and evaluating treatment for patients with various complex prosthodontic needs
2. The collection, organization and interpretation of diagnostic data; developing a comprehensive, multidisciplinary treatment plan and determining a prognosis; case presentation; the critical evaluation of results of treatment.
3. The use of the services of professional allied dental personnel.
4. The use of adjustable articulators to develop an integrated occlusion for opposing arches.

5. Complete and partial-coverage restorations.
6. The restoration of endodontically treated teeth.
7. Fixed prosthodontics.
8. Removable partial dentures.
9. Complete dentures.
10. Implant-supported and/or retained prostheses.
11. The biomechanical principles of occlusion

All students will develop competency in:

1. The treatment of geriatric patients and patients with temporomandibular disorders.
2. Dental laboratory procedures for dentate, partially edentulous and edentulous patients.

### **Duration of the Program**

The duration of the CAGS/MSD program is a minimum of thirty-six (36) consecutive months (full time), starting July 1st and ending June 30<sup>th</sup>, three calendar years later.

Additional time beyond the 36 months may be required for successful completion of the program.

Students remaining past the program end date to complete the clinical component will be registered and assessed partial tuition and fees.

Students who are enrolled in a research program, have completed all their program requirements, and are in the process of writing their thesis will be registered and assessed a continuing student fee.

Payment of these fees entitles the student to appropriate access to the library, research laboratories, academic staff and other academic facilities for the purpose of completing degree requirements.

## **Academic Requirements**

Students must successfully complete all required courses as outlined in the Prosthodontics policies and procedures and must achieve all competencies and proficiencies. Failure to do so in any course will result in the student's failing to earn his/her academic degree/certificate. Each postdoctoral program has a fixed curriculum and graduation is dependant on passing all courses in the curriculum, demonstrating clinical proficiency in the discipline, completing a research project, and writing and defending a thesis.

### **Seminars**

During the course of study, each student will be responsible for preparing a variety of seminars. Each seminar will be assigned to students who will review the literature and prepare reading lists. Following the seminar, the student who acts as moderator will be responsible to see that each section is typed, assembled and turned in to the Program Coordinator.

### **Clinical Rotations**

Students will participate in clinical rotations in pediatric dentistry, oral surgery, anesthesia, and pediatric orthodontics. Students are scheduled in the clinic five days a week (Sunday – Thursday) for a total of 40 hours. Classes are held either before clinic from 8 am-9 am or after clinic from 5:30 pm-7 pm.

Only those cases which have been properly typed, cost estimated, contracted, paid, and treated to the advisor's satisfaction will be accepted as completed clinical procedures.

### **Case Presentations**

At selected times during the academic year the students will be required to present his/her case reports and patients records to his/her faculty advisor. These sessions will be utilized to assess student's progress, identify any problems or shortcomings, and institute remedial measures.

### **Research**

Students who are admitted to a Certificate of Advanced Graduate Studies (CAGS) will concomitantly pursue the Master of Science in Dentistry (MSD). The programs are combined clinical and research programs. Students will have three years of clinical experience and three years to develop a research proposal, collect data and write and defend their thesis. In any one year, students will spend approximately 1/3 of their time pursuing research and 2/3 of their time in clinical study and practice. On completion of the requirements, the MSD degree is awarded either in the same area as the CAGS or Dental Public Health. The MSD is not offered with the Advanced Education in General Dentistry program.

Candidates for the MSD degree are required to pass all assigned courses and demonstrate progress in their area of research throughout the three years of the program. The number of

courses that may be transferred to an MSD program is explained in more detail in the Policy on Transfer of Courses and Course Exemption in the BUIDRE Policies and Procedures Manual. Core courses that will be required of all students doing research are in epidemiology, biostatistics, and research writing. Additionally courses are planned by candidates in consultation with the research advisor and in accordance with the requirements of their major field. Coursework may be in formal courses, seminars, and research in proportion to the particular needs and backgrounds of the candidates as worked out in consultation with the research advisor. Requirements for the MSD include completing the core courses and a major research project and thesis of professional caliber under faculty supervision. The goal is for students to develop the ability to evaluate the existing literature, focus, organize and analyze complex data to address an issue in a way that contributes to the literature.

The MSD degree entails a research project and thesis and is an integral component of the 36-month program. Depending on the time needed to complete the research component, additional time beyond the 36 months may be necessary for successful completion of the MSD degree. Other coursework may be assigned at the discretion of the research advisor.

### **Thesis**

A research thesis is required. Guidelines for thesis preparation will be provided to candidates by their program coordinator. The thesis is to be based on a research project carried out by the candidate. The topic for a thesis will be chosen by the candidate in conjunction with the faculty advisor. The major areas of focus are clinical, epidemiological or public health research. In certain cases, field projects or systematic reviews with a meta-analysis of the literature may be acceptable.

Students must initiate and complete a research project using the elements of scientific method, including research design, accurate reporting, critical thinking and the formulation of conclusions based upon scientific data rather than opinion. Collaboration with other hospitals, medical institutions and other health-orientated organizations is encouraged to foster collaborative research.

Students will be assigned a research advisor within the CAGS Program with the approval of the appropriate clinical research or dental public health directors at Boston University. The student must work closely with the research advisor to ensure satisfactory progress. The research protocol will be developed within the first 6 months of the program. Implementation and data collection will commence after Institutional Review Board approval (research ethics committee) approval (where appropriate) and other regulatory approvals. It is anticipated that data collection will be complete no later than 4 months before graduation to allow for data analysis, thesis preparation and defense of the thesis (optional depending on the program). Guidelines for Thesis Dissertation Submission are provided in the Student Handbook, Appendix IV.

# Prosthodontic Curriculum

## **A word on Distance Education**

Most classes and all clinical and research activity will take place at the BUIDRE facilities in Dubai. Some coursework will be presented electronically from Boston University School of Dental Medicine. Courses presented via distance education technology are indicated in the following course listings. In most cases these courses are intended to be viewed in a classroom setting with BUIDRE faculty present to stimulate discussion and answer questions. However, these courses will also be available on the internet for student's independent review.

Please note that there is no required number of credits to graduate. Completing all coursework is required for graduation. Credits are assigned only for weighting courses for calculation of grade point average.

Interdisciplinary (IDC) courses are indicated below. IDC course descriptions can be found on page 17 of this manual.

### **Year 1**

- EN 819 Endodontics for Prosthodontists .5 cr, 2nd sem.
- OB 761 Oral Microbiology 1 cr, 2nd sem. **(IDC, Distance Education from BU)**
- OB 767 Oral Immunology 1 cr, 2nd sem. **(IDC, Distance Education from BU)**
- OS 761 Medical Concerns of the Dental Patient 1 cr, 1st and 2nd sem. **(IDC)**
- OS 828 Pain and Anxiety Control 1 cr, 2nd sem. **(IDC)**
- OS 831 Head and Neck Anatomy 1 cr, 1st sem. **(IDC, Distance Education from BU)**
- PD 832 Growth and Development .5 cr, 1st sem. **(IDC)**
- PE 764 Current Concepts in Periodontology 1 cr, 1st sem. **(IDC)**
- PE 817 Seminar: Grand Rounds 2 cr, 1st and 2nd sem. **(IDC)**
- PE 827 Applied Dental Pharmacology 1 cr, 2nd sem. **(IDC, Distance Education from BU)**
- PH 741 Behavioral Sciences 1 cr, 1st sem. **(IDC, Distance Education from BU)**
- PH 763 Bioethics and Law 1 cr, 2nd sem. **(IDC, Distance Education from BU)**
- PH 800 Introduction to Biostatistics/Epidemiology 1 cr, 1st sem. **(IDC, Distance Education from BU)**
- PR 720 Practice Management 1 cr, 2nd sem.
- PR 801 Fixed Prosthodontics 2 cr, 1st and 2nd sem.
- PR 803 Complete Denture Prosthodontics 2 cr, 1st and 2nd sem.
- PR 805 Esthetic Dentistry for the Prosthodontist 1 cr, 2nd sem.
- PR 806 Removable Partial Dentures 2 cr, 1st and 2nd sem.
- PR 807 Seminar: Patient Presentation and Treatment Planning 1 cr, 1st and 2nd sem.
- PR 814 Removable Prosthodontics: Overlay Dentures 1 cr, 2nd sem.
- PR 815 Basic Prosthodontic Techniques 2 cr, 1st sem.
- PR 816 Seminar: Implantology 1 cr, 2nd sem.
- PR 818 Principles of Gnathology 1 cr, 2nd sem.
- PR 821 Maxillofacial Prosthetics 1 cr, 2nd sem.
- PR 825 Postdoctoral Biomaterials 2 cr, 1st and 2nd sem. **(IDC)**

PR 844 Implantology Literature Review 1 cr, 1st and 2nd sem. **(IDC)**  
PR 845 Implantology Topics 1 cr, 1st and 2nd sem. **(IDC)**  
PR 846 Implantology Case Presentation 1 cr, 1st and 2nd sem. **(IDC)**  
PR 855 Principles of Surgery for Prosthodontists 1 cr, 2nd sem.  
PR 861 Contemporary Prosthodontic Literature 1 cr, 1st & 2nd sem.  
PR 911 Clinical Prosthodontics 6 cr, 1st and 2nd sem.  
PR 991 Research Prosthodontics 4 cr, 1st and 2nd sem.

## **Year 2**

PA 801 Oral and Maxillofacial Pathology 1 cr, 4th sem. **(IDC, Distance Education from BU)**  
PE 818 Seminar: Grand Rounds 2 cr, 3rd and 4th sem. **(IDC)**  
PR 761 Occlusion 1 cr, 4th sem. **(IDC)**  
PR 808 Seminar: Patient Presentation and Treatment Planning 1 cr, 3rd and 4th sem.  
PR 832 Temporomandibular Disorders and Orofacial Pain 1 cr, 4th sem.  
PR 847 Implantology Case Presentation 1 cr, 3rd and 4th sem. **(IDC)**  
PR 862 Contemporary Prosthodontic Literature 1 cr, 3rd and 4th sem.  
PR 901 Prosthodontic Literature Review 4 cr, 3rd and 4th sem.  
PR 912 Clinical Prosthodontics 12 cr, 3rd and 4th sem.  
PR 992 Research Prosthodontics 4 cr, 3rd and 4th sem.

## **Year 3**

OB 830 Research Writing 1 cr, 5th sem. **(IDC, Distance Education from BU)**  
PE 819 Seminar: Grand Rounds 2 cr, 5th and 6th sem. **(IDC)**  
PE 880 Seminar: Integration of Periodontology, Restorative and Implant Therapy 1 cr, 4th and 5th sem. **(IDC)**  
PH 803 Biostatistics 1 cr, 5th and 6th sem. **(IDC, Distance Education from BU)**  
PR 809 Seminar: Patient Presentation and Treatment Planning 1 cr, 5th and 6th sem.  
PR 848 Implantology Case Presentation 1 cr, 5th and 6th sem. **(IDC)**  
PR 863 Contemporary Prosthodontic Literature 1 cr, 5th and 6th sem.  
PR 913 Clinical Prosthodontics 12 cr, 5th and 6th sem.  
PR 918 Student Teaching 1 cr, 5th sem.  
PR 993 Research Prosthodontics 4 cr, 5th and 6th sem.

## **Prosthodontic Course Descriptions**

### **PR 720 Practice Management**

This course reviews fundamental principles of managing a successful practice with special emphasis on record keeping and risk management. 1 cr, 2nd sem.

### **PR 801 Fixed Prosthodontics**

This advanced-level course reviews all aspects of fixed prosthodontic therapy with special emphasis on contemporary materials and techniques and the principles of occlusion as they relate to fixed Prosthodontic. 2 cr, 1st and 2nd sem.

### **PR 803 Complete Denture Prosthodontics**

This course comprehensively reviews contemporary principles and techniques used for the restoration of totally edentulous jaws with complete dentures, including implant-supported overdentures. 2 cr, 1st and 2nd sem.

### **PR 805 Esthetic Dentistry for the Prosthodontist**

This course reviews the principles of esthetics as they relate to contemporary Prosthodontics. Basic materials and methods used to improve the esthetic appearance of patients are described and illustrated in detail. Topics covered include: porcelain laminate veneers, inlays and onlays; all-ceramic complete crowns; principles of color and shade selection; composite resin bonding; the interaction of esthetics and function; esthetic management of the dentogingival unit; tooth whitening; and esthetic control with implant-supported prostheses. 1 cr, 2nd sem.

### **PR 806 Removable Partial Dentures**

Advanced-level course related to the treatment of partially edentulous patients with removable partial dentures. Emphasis is placed on diagnosis, treatment planning, and methods of stress control. 2 cr, 1st and 2nd sem.

### **PR 807, 808, 809 Seminar: Patient Presentation and Treatment Planning**

Series of seminars on diagnosis and treatment planning for patients with complex prosthodontic needs. Students develop expertise in comprehensive treatment planning along with the development of presentation skills. 1 cr, 1st and 2nd sem; 1 cr, 3rd and 4th sem; 1 cr, 5th and 6th sem.

### **PR 814 Removable Prosthodontics: Overlay Dentures**

Special course stressing restoration of patients with minimal dental units by using a removable prosthesis. Objectives, techniques, and rationale of the overlay denture in terms of providing a functionally viable modality of therapy. 1 cr, 2nd sem.

### **PR 815 Basic Prosthodontic Techniques**

Laboratory course in which students participate in preclinical prosthodontic techniques and concepts, as well as advanced laboratory techniques. 2 cr, 1st sem.

**PR 818 Principles of Gnathology**

Review of the historical development of gnathologic principles and techniques, including the use of the pantograph and completely adjustable articulator. 1 cr, 2nd sem.

**PR 821 Maxillofacial Prosthetics**

A comprehensive didactic program focusing on all aspects of the rehabilitation of patients with congenital and acquired maxillofacial defects. 1 cr, 2nd sem.

**PR 855 Principles of Surgery for Prosthodontists**

The purpose of this course is to provide prosthodontic students with didactic and hands-on instruction in basic surgical principles and techniques to prepare the students for surgical placement of implants in selected patients. 1 cr, 2nd sem.

**PR 861, 862, 863 Contemporary Prosthodontic Literature**

This course introduces students to recent prosthodontic literature and familiarizes them with a variety of primary prosthodontic journals as well as secondary and tertiary journals. Various levels of scientific power within the literature will be investigated to highlight the depth, breadth, and complexity of this relevant body of knowledge. This course is designed to foster among the students an attitude of “life-long learning” through regular, disciplined reading of the literature. 1 cr, 1st and 2nd sem; 1 cr, 3rd and 4th sem; 1 cr, 5th and 6th sem.

**PR 901 Prosthodontic Literature Review**

Current and classical prosthodontic literature as a basis for substantive discussion of concepts in therapy and research. Special emphasis is placed on the principles of evidence-based health care and critical review of the dental literature. 4 cr, 3rd and 4th sem.

**PR 911, 912, 913 Clinical Prosthodontics**

Advanced clinical experiences in all phases of complex fixed, removable, and implant Prosthodontic under direct supervision of the prosthodontic faculty. 6 cr, 1st and 2nd sem; 12 cr, 3rd and 4th sem; 12 cr, 5th and 6th sem.

**PR 918 Student Teaching**

Students have the opportunity to synthesize their knowledge and experience through involvement with limited, supervised teaching assignments. During these assignments, students act as teaching assistants in the pre-doctoral program.

**PR 991, 992, 993 Research Prosthodontics**

Approved investigative effort to satisfy requirements for the MSD degree. Research may involve preclinical and clinical subjects related to prosthodontics or restorative dentistry. Students must complete a research project, thesis and thesis defense to fulfill the requirements of this course. 4 cr, 1st, 2nd, 3rd, 4th, 5th and 6th sem.

*Interdisciplinary Courses*

**OB 761 Oral Microbiology**

Distribution, ecology and pathogenic potential of oral microbiota. Pathogenicity of components of bacterial plaque and their role on the development of oral diseases. Mechanisms of local and systemic resistance to pathogenic oral microbiota. 1 cr, Spring sem. **(IDC, Distance Education from BU)**

**OB 767 Oral Immunology**

Defense mechanisms that the host utilizes against exogenous matter. Although the immune system is protective, there is also a destructive aspect that affects most tissue. The course examines these seemingly divergent mechanisms. 1 cr, Spring sem. **(IDC, Distance Education from BU)**

**OB 830 Research Writing**

Identifies and defines the components and uses of a research protocol, the underlying research methodology and data, and the construction of a prudent work schedule essential to complete a research project. Includes the development of a protocol based on the student's thesis topic. 1 cr, Fall sem. **(IDC, Distance Education from BU)**

**OS 761 Medical Concerns of the Dental Patient**

A review of internal medicine and the management of the medically compromised dental patient. 1 cr, Fall and Spring sem. **(IDC)**

**OS 828 Pain and Anxiety Control**

A discussion of topics in pain and anxiety control, including pain physiology, local anesthetic techniques, patient management, and sedative techniques. 1 cr, Spring sem. **(IDC)**

**OS 831 Head and Neck Anatomy**

An in-depth discussion of head and neck anatomy, emphasizing implications of head and neck anatomy to clinical dentistry. 1 cr, Fall sem. **(IDC, Distance Education from BU)**

**PA 801 Oral and Maxillofacial Pathology**

A course for post-doctoral students in the dental specialty programs covering a spectrum of diseases involving the oral and paraoral structures. Lectures will include fibro-osseous lesions, developmental disturbances affecting the jaws and teeth, odontogenic tumors, cysts of the oral and paraoral region, bacterial, viral and mycotic infections, benign tumors and tumor-like lesions, white lesions, pigmented lesions, vesicullo-bullous diseases, hematologic, endocrine, and metabolic disorders. 1 cr, Spring sem. **(IDC, Distance Education from BU)**

**PD 832 Growth and Development**

This course offers a clinically relevant understanding of craniofacial growth and development for the non-orthodontist. Topics include how malocclusion develops and how growth can be modified during treatment of malocclusion. Attention is focused on normal and abnormal growth and development of the face, the occlusion and the dental arches and includes cleft palate and other craniofacial disorders. .5 cr, Fall sem. **(IDC)**

**PE 764 Current Concepts in Periodontology**

Provides an overview of various clinical entities that the general dentist encounters daily. Emphasizes recognition and diagnosis of periodontal disease along with classification of periodontal conditions in different states of health and disease. The course also gives an overview of periodontal therapy, including surgical procedures for the generalist and non-periodontology specialist. 1 cr, Fall sem. (IDC)

**PE 817, 818, 819 Seminar: Grand Rounds**

Weekly case presentations by periodontic, prosthodontic, endodontic, pediatric dentistry and orthodontic students, emphasizing comprehensive treatment planning. Students and faculty discuss ideal and alternative treatment plans. Stresses importance of interdisciplinary coordination of treatment. 2 cr, Fall and Spring sem. (IDC)

**PE 827 Applied Dental Pharmacology**

In this course we will examine pharmacological issues relevant to dentistry and oral biology. We will focus on pharmacology associated with symptoms detected in the oral cavity during treatment. These include but are not limited to autoimmune syndrome, HIV, and cardiac, neurological, and metabolic disorders. Medications associated with these conditions and their influence on the oral cavity will be discussed. 1 cr, Spring sem. (IDC, Distance Education from BU)

**PE 880 Seminar: Integration of Periodontology: Restorative and Implant Therapy**

Discussions and case presentations on the integration of periodontology, restorative dentistry and implantology into the comprehensive treatment plan. 1 cr, Fall and Spring sem. (IDC)

**PH 741 Behavioral Sciences**

Focuses on developing a framework for delivering total health care. Examines the meaning and impact of effective communication skills, managing transitions, enhancing patient relations, and managing stress and pain. 1 cr, Fall sem. (IDC, Distance Education from BU)

**PH 763 Bioethics and Law**

Introduces models of applied ethics used within the field of dentistry. With lectures, case studies, and class discussion, students engage in identification and analysis of ethical dilemmas. Topics include professional responsibility and ethical principles, the doctor-patient relationship, the dentist and the community, and ethical conduct in science. 1 cr, Spring sem. (IDC, Distance Education from BU)

**PH 800 Introduction to Biostatistics / Epidemiology**

Designed to provide students in a clinical specialty program (CAGS) with skills in basic concepts of clinical research methods and statistical analysis. Acquaints the student with basic data types and summary statistics for the study of disease in human populations. For students who have not had prior experience with statistics and epidemiology. 1 cr, Fall sem. (IDC, Distance Education from BU)

**PH 803 Biostatistics**

Introduces the concepts and techniques of biostatistics used in dental research and referred to in dental literature. Emphasizes the fundamentals of statistical logic and presents the basic principles of experimental design, statistical inference, and probability. Examples from current basic sciences research, survey research, and clinical trials augment the presentation of statistical theory. 1 cr, Fall and Spring sem. (**IDC, Distance Education from BU**)

**PR 761 Occlusion**

Principles of occlusion. The analysis and management of occlusal problems as related to periodontology, restorative dentistry, and tooth movement. 1 cr, Spring sem. (**IDC**)

**PR 825 Postdoctoral Biomaterials**

In-depth discussion of all dental materials related to the practice of restorative dentistry. Reviews the latest polymer and ceramic chemistry as well as the metallurgy of precious and nonprecious metals. 2 cr, Fall and Spring sem. (**IDC**)

**PR 844 Implantology Literature Review**

A seminar course consisting of a comprehensive review of the current and classical literature in implantology and related fields. Review of the literature is followed by comment and discussion conducted by one of the masters in the field. 1 cr, Fall and Spring sem. (**IDC**)

**PR 845 Implantology Topics**

A presentation course given by leading experts of implantology with emphasis on current and classical implantology topics. 1 cr, Fall and Spring sem. (**IDC**)

**PR 846, 847, 848 Implantology Case Presentation**

A case presentation course by periodontology, prosthodontic, oral surgery, and implantology students on a variety of clinical implantology topics. 1 cr, Fall and Spring sem. (**IDC**)

*Other Course Descriptions*

**EN 819 Endodontics for Prosthodontists**

Series of lectures presented to students enrolled in the postdoctoral programs in Periodontology and Prosthodontics. Topics include diagnostic procedures in endodontic practice, classification of pulpal and periradicular pathology, management of the endodontic emergency, diagnosis and management of endodontic-periodontic lesions. .5 cr, 2nd sem.

**PR 816 Seminar: Implantology**

Comprehensive course covering the history of implants, tissue biocompatibility, and biomechanics. Encompasses implants, tissue biology, patient selection, diagnosis, treatment planning, and literature review. Includes presentation of oral surgery and prosthodontic considerations utilizing different implant systems. 1 cr, 2nd sem.

**PR 832 Temporomandibular Disorders and Orofacial Pain**

A comprehensive review of the anatomy, physiology, and pathology of the temporomandibular articulation and muscles of mastication. Pathophysiology of pain along with methods of

diagnosis and treatment of orofacial pain. Special emphasis on the multidisciplinary management of patients with head and neck pain. 1 cr, 4th sem.

## Clinical and Laboratory Experience

The emphasis of the clinical program is on the development of advanced knowledge and skills through supervised treatment of patients requiring complex prosthodontic treatment rather than the completion of a specific number of procedures. Nevertheless, experience has shown that certain minimal accomplishments in a variety of procedures are desirable to ensure proficiency. Students are encouraged to maximize their experiences beyond these guidelines, and the Program Coordinator reserves the right to increase or decrease the number of any of the following clinical or laboratory experiences. Some flexibility is permitted in meeting specific guidelines because each student's patient mix varies considerably.

### Clinical Experiences

Treatment Plans: No minimal number  
Consultations: As assigned by faculty

#### **Fixed Prosthodontics:**

1. A total of 210 units are expected for students in the clinical track
2. A total of 180 units are expected for students in the research track
3. The above total units should fall within the following guidelines:
  - Fixed Dental Prostheses: 80 units to include:
    1. Anterior and posterior FDPs - approximately 36 units
    2. Full arches, fixed Prosthodontic - 2 arches (approximately 24 units)
    3. Full arches, combination fixed/removable - 3 arches (approximately 24 units)
    4. Attachment arches (fixed or removable) – 2

Included in the above total units of fixed Prosthodontic, students should complete:

- 80 complete crowns, either single units or retainers
- 12 partial coverage cast restorations, either single units or retainers
- 30 posts and cores
- 10 anterior and 10 posterior pontics

**Combination Fixed/Removable:** 3 arches

**Removable Prosthodontics:** A total of 22 units are expected with the following guidelines:

- Removable Complete Dental Prostheses:
  1. Both arches - 3-6 patients (6-12 units)
  2. Single arch - 2-4 patients (2-4 units), at least one occluding with RPD
  3. Immediate - 2 units of above
  4. Reline - 2 units
- Removable Partial Dental Prostheses:

1. Single arch - 8 arches to include:
  2. Distal extension - 4
  3. Combination fixed/removable - 3
  4. Attachment retained RPD - 2
- Overdentures:
    1. Single arch - attachments - 1 unit

**Occlusion:**

- All treatment is completed on semi-adjustable articulators or fully adjustable articulators.
- Other types of articulators as desired by faculty, e.g., simple hinge for a single-unit restoration.

**Temporomandibular Disorders:**

- Provide treatment for 1 patient with active signs and symptoms of TMD

**Maxillofacial Prosthetics:**

- Provide or observe treatment or follow-up care - 1 patient

**Implant Dentistry:**

- Implant Prosthodontics:
  1. Provide implant prosthodontic treatment - 15 patients with the following guidelines:
    - a. Implant-supported overdenture – 1 unit
    - b. Partial arch, implant-supported restoration – 2 units.
    - c. Implant-supported single crown – 2 units.
    - d. Complete-arch-implant-supported restoration – 1 arch
- Implant surgery:
  1. Students must be involved in all areas of implant dentistry, including implant surgery. Minimal clinical experiences in implant surgery include:
    - a. serving as first assistant for 5 patients, and
    - b. serving as primary surgeon for 5 patients.

Laboratory Experiences

**Fixed:** Students are expected to complete all laboratory procedures for 25 units of fixed Prosthodontics. The Program Coordinator will determine which units are completed entirely by the students and which units may be completed with the assistance of a dental laboratory technician.

**Removable:** All removable prosthodontic laboratory procedures, except for fabrication of chromium-cobalt frameworks, must be completed by the student. Therefore, students must select and set all artificial teeth for removable dental prostheses and pack and process all acrylic resin bases.

## Documentation

Students must maintain current and accurate documentation of all clinical achievements in the clinic log (red book) and on the appropriate forms. Clinic logs, patient records, and all forms will be audited by the Program Coordinator.

## Calculating Units

Please note that when calculating the number of units completed for clinical experiences in postdoctoral Prosthodontic, the following guidelines will be used:

### **Fixed Prosthodontics**

The following will be considered one (1) unit:

- Complete metal crown
- Ceramic crown
- Metal inlay
- Metal onlay
- Metal crown with resin veneer
- Porcelain inlay
- Porcelain onlay
- Porcelain labial veneer
- Retainer for fixed dental prosthesis (including resin-bonded retainer)
- Pontic for fixed prosthesis
- Implant-supported crown (cemented or screw retained)
- Custom implant abutment
- Implant-supported pontic (not screw-retained prosthesis)
- Cast portion of screw-retained, implant-support metal/acrylic resin prosthesis (one unit for each implant)

The following will be considered one-half (1/2) unit:

- Post coping for overdenture
- Implant-supported bar (one-half unit for every two supporting implants)

The following will be considered one-third (1/3) unit:

- Cast post and core
- Prefabricated post with direct core reconstruction

The following will be considered one-tenth (1/10) unit:

- Each surface restored with a direct filling restoration (teeth that will not receive fixed restorations)

### **Removable Prosthodontics**

The following will be considered one (1) unit:

- Removable complete dental prosthesis (including immediate denture or overdenture)

- Implant-supported, removable complete dental prosthesis
- Removable partial dental prosthesis with cast chromium cobalt framework (including attachment-retained removable prosthesis)
- Removable maxillofacial prosthesis
- Acrylic resin component of screw-retained, implant-supported metal/acrylic resin prosthesis

The following will be considered one-third (1/3) unit:

- Temporary complete or partial removable dental prosthesis
- Laboratory processed relines or rebase of removable dental or maxillofacial prosthesis
- Laboratory processed occlusal device
- Laboratory processed surgical guide template or radiologic template for implant prosthodontics

## Competency and Proficiency Evaluations

(See attached forms following this section.)

1. Each student will maintain a log book made up of Competency/Proficiency Evaluation Forms—one or more sheets for each patient. All treatment provided must be documented on these sheets with appropriate dates and signatures. Signatures should be obtained during clinic hours and while the patient is present. The faculty will also grade the student's performance on these forms.
2. The Competency/Proficiency Books will be reviewed periodically by an assigned Faculty Advisor or the Program Coordinator.
3. The Competency/Proficiency Books will be submitted to the Program Coordinator at the completion of the third year of the program. These books represent the accomplishments of the students during their clinical education and will be retained on file.

### Completion of the Program

The postdoctoral CAGS/MSD program will be considered complete on or after June 30th of the third year when the following requirements have been met to the satisfaction of the program coordinator and postdoctoral prosthodontic staff.

1. Satisfactory completion of clinical experiences.
2. Clinical proficiency in Prosthodontic.
3. Satisfactory completion of all didactic components.
4. Patient charts are complete (with dates, treatment entries, case summaries for completed patients, student and instructor signatures) and are approved by reviewing staff member (advisor) and program coordinator.
5. Student Competency/Proficiency Book (clinic log) is completed, turned in, reviewed and accepted.
6. All patients not completed by a student who has otherwise satisfied the entire program components have been reassigned by the postdoctoral prosthodontic program coordinator. All diagnostic casts, definitive casts, dies, metal substructures, interocclusal records, etc. have been turned over to enable the new student to continue the treatment in an efficient manner. A Transfer Case Summary should be written in the patient's chart by the transferring student who is leaving school. An entry should appear in the patient's chart that the transfer of all case materials has taken place and should be signed by both students.
7. Equipment, instruments, textbooks, clinical supplies, lockers, units, cabinets and other materials loaned to the student have been properly turned in.
8. All tuition, research fees and bills for lost or damaged materials loaned to a student have been properly met and discharged.

Professional growth both didactically and clinically in the specialty of prosthodontics can be an exciting and rewarding experience. Development of our students is the goal of the entire staff of

the Postdoctoral Prosthodontic Program. Careful adherence to the guidelines of this Postdoctoral Prosthodontic Program Orientation and Procedures Manual will allow the student to derive maximal growth, development, and achievement during the program. The guidelines have been developed over the years to create an orderly and productive learning experience of which each graduate can be justifiably proud.

## Competency-Proficiency Evaluation Forms

### Competency-Proficiency Evaluation for all Gold-Casting

**Student's Name:** \_\_\_\_\_

**Patient's Name:** \_\_\_\_\_ **Record Number:** \_\_\_\_\_

**Case Type:**     Uncomplicated             Intermediate             Complex

**Tooth Number(s):** \_\_\_\_\_

**In evaluating student performance, use the following scale:**

1 = Completed with substantial assistance

3 = Completed independently (Competent)

2 = Completed with minimal assistance

4 = Completed independently, efficiently, and effective (Proficient)

Procedure	Date	Student Performance	Faculty Name (Print)	Faculty Signature	Comments
Diagnosis					
Treatment Planning					
Diagnostic Waxing					
Initial Preparation and Temporization					
Final Preparation					
Final Impression					
Casts Mounted					
Final Wax Pattern					
Individual Casting, Try-in, Occlusal Adjustment					
Solder Index					
Temporary Cementation					
Final Cementation					
Post Cementation					

Outcome of overall student performance:     Clinically Outstanding     Clinically Acceptable

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Competency-Proficiency Evaluation for Complete Dentures

**Student's Name:** \_\_\_\_\_

**Patient's Name:** \_\_\_\_\_

**Case Type:** Uncomplicated Intermediate Complex

**Record Number:** \_\_\_\_\_

**Arch:** MAX MAND

**In evaluating student performance, use the following scale:**

1 = Completed with substantial assistance

3 = Completed independently (Competent)

2 = Completed with minimal assistance

4 = Completed independently, efficiently, and effectively (Proficient)

Procedure	Date	Student Performance	Faculty Name (Print)	Faculty Signature	Comments
Diagnosis					
Treatment Planning					
Custom Tray, Border Mold, Final Impression					
Record Bases					
Posterior Palatal Seal					
Vertical Dimension, Centric Rel. Rec.					
Face Bow Transfer, Casts Articulated					
Anterior Tooth Arrangement					
Complete Tooth Arrangement					
Try-in, Occlusal Plane, Esthetics, Phonetics, Centric Rel.					
Protrusive Record					
Final Occlusal Balance					
Final Waxing					
Investing and Processing					
Laboratory Remount or Patient Remount Procedure					
Occlusal Equilibration					
Follow-up Adjustments					
Final Insertion					

Outcome of overall student performance:  Clinically Outstanding  Clinically Acceptable

Faculty Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Competency-Proficiency Evaluation for Fixed Prosthodontics

Student's Name: \_\_\_\_\_

Patient's Name: \_\_\_\_\_ Record Number: \_\_\_\_\_

Case Type:  Uncomplicated     Intermediate     Complex

Describe Prosthesis: \_\_\_\_\_

**In evaluating student performance, use the following scale:**

1 = Completed with substantial assistance

3 = Completed independently (Competent)

2 = Completed with minimal assistance

4 = Completed independently, efficiently, and effective (Proficient)

Procedure	Date	Student Performance	Faculty Name (Print)	Faculty Signature	Comments
Diagnosis					
Treatment Planning					
Diagnostic Waxing					
Initial Preparation and Temporization					
Final Preparation					
Final Impression					
Individual Casting Try-in					
Solder Index					
Framework Try-in, Pick-up Impression Occlusal Record					
Shade Selection					
Casts Mounted					
Laboratory Prescription					
Bisque Try-in					
Final Try-in, Occlusal Adjustment					
Temporary Cementation					
Final Cementation					
Post Cementation					

Outcome of overall student performance:     Clinically Outstanding     Clinically Acceptable

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Competency-Proficiency Evaluation for Implant Prosthesis

**Student's Name:** \_\_\_\_\_

**Patient's Name:** \_\_\_\_\_

**Record Number:** \_\_\_\_\_

**Case Type:**  Uncomplicated  Intermediate  Complex

**Describe Prosthesis:** \_\_\_\_\_

**In evaluating student performance, use the following scale:**

1 = Completed with substantial assistance

3 = Completed independently (Competent)

2 = Completed with minimal assistance

4 = Completed independently, efficiently, and effectively (Proficient)

Procedure	Date	Student Performance	Faculty Name (Print)	Faculty Signature	Comments
Initial Diagnosis					
Treatment Planning					
CT Scan Evaluation					
Proposed Treatment Plan Presurgical Contract					
Final Treatment Plan Following Uncovering					
Provisional Restoration					
Final Impression					
Casts Mounted, Laboratory Prescription					
Framework Try-in, Transfer Impression					
Occlusal Record					
Shade Selection					
Bisque/Wax Try-in					
Final Try-in					
Final Insertion					

Outcome of overall student performance:  Clinically Outstanding  Clinically Acceptable

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Competency-Proficiency Evaluation for Occlusal Device

Student's Name: \_\_\_\_\_

Patient's Name: \_\_\_\_\_

Record Number: \_\_\_\_\_

Case Type:  Uncomplicated  Intermediate  Complex

Describe Device: \_\_\_\_\_

**In evaluating student performance, use the following scale:**

1 = Completed with substantial assistance

3 = Completed independently (Competent)

2 = Completed with minimal assistance

4 = Completed independently, efficiently, and effectively (Proficient)

Procedure	Date	Student Performance	Faculty Name (Print)	Faculty Signature	Comments
Diagnosis					
Treatment Planning					
Impressions					
Interocclusal Record					
Wax Pattern					
Investing and Processing					
Finished Prosthesis					
Intra-oral Adjustments					
Final Insertion					
Follow-up Adjustments					

Outcome of overall student performance:  Clinically Outstanding  Clinically Acceptable

Faculty Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Competency-Proficiency Evaluation for Posts and Cores

Student's Name: \_\_\_\_\_

Patient's Name: \_\_\_\_\_

Record Number: \_\_\_\_\_

Case Type:  Uncomplicated  Intermediate  Complex

Tooth Number(s): \_\_\_\_\_

**In evaluating Student Performance, use the following scale:**

1 = Completed With Substantial Assistance

3 = Completed Independently (Competent)

2 = Completed With Minimal Assistance

4 = Completed Independently, Efficiently, and Effectively (Proficient)

Procedure	Date	Student Performance	Faculty Name (Print)	Faculty Signature	Comments
Diagnosis					
Treatment Planning					
Canal Preparation					
Radiographic Verification					
Impression or Direct Pattern					
Wax Pattern (if indirect)					
Try-in of Post(s) and Core(s)					
Cementation					
Provisional Restoration					

Outcome of overall student performance:  Clinically Outstanding  Clinically Acceptable

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Competency-Proficiency Evaluation for Provisional Removable Partial Dentures

**Student's Name:** \_\_\_\_\_

**Patient's Name:** \_\_\_\_\_

**Record Number:** \_\_\_\_\_

**Case Type:**  Uncomplicated  Intermediate  Complex

**Describe Prosthesis or Device:** \_\_\_\_\_

**In evaluating student performance, use the following scale:**

1 = Completed with substantial assistance

3 = Completed independently (Competent)

2=Completed with minimal assistance

4 = Completed independently, efficiently, and effectively (Proficient)

Procedure	Date	Student Performance	Faculty Name (Print)	Faculty Signature	Comments
Diagnosis					
Treatment Planning					
Impressions					
Set-up of Teeth					
Try-in					
Investing and Processing					
Finished Prosthesis					
Intra-oral Adjustments					
Final Insertion					
Follow-up Adjustments					

Outcome of overall student performance:  Clinically Outstanding  Clinically Acceptable

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Competency-Proficiency Evaluation or Radiologic/Surgical Implant Template

**Student's Name:** \_\_\_\_\_

**Patient's Name:** \_\_\_\_\_

**Record Number:** \_\_\_\_\_

**Describe Device:** \_\_\_\_\_

**In evaluating student performance, use the following scale:**

1 = Completed with substantial assistance

3 = Completed independently (Competent)

2 = Completed with minimal assistance

4 = Completed independently, efficiently, and effectively (Proficient)

Procedure	Date	Student Performance	Faculty Name (Print)	Faculty Signature	Comments
Diagnosis					
Treatment Planning					
Impressions					
Set-up of Teeth					
Investing and Processing					
Finished Prosthesis					
Intra-oral Adjustments					
Final Insertion					
Follow-up Adjustments (after CT scan)					

Outcome of overall student performance:     Clinically Outstanding     Clinically Acceptable

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Competency-Proficiency Evaluation for Removable Partial Dentures

**Student's Name:** \_\_\_\_\_

**Patient's Name:** \_\_\_\_\_

**Record Number:** \_\_\_\_\_

**Case Type:**  Uncomplicated  Intermediate  Complex

**Arch:**  MAX  MAND

**In evaluating student performance, use the following scale:**

1 = Completed with substantial assistance

3 = Completed independently (Competent)

2 = Completed with minimal assistance

4 = Completed independently, efficiently, and effectively (Proficient)

Procedure	Date	Student Performance	Faculty Name (Print)	Faculty Signature	Comments
Diagnosis					
Treatment Planning					
Diagnostic Casts, Survey and Design					
Mouth Preparation Final Impression					
Master Cast Survey and Design					
Framework Try-in and Adjustment					
Altered Cast Impression					
Interocclusal Records					
Arrangement of Teeth					
Investing and Processing					
Occlusal Equilibration					
Tissue Surface, Peripheral Extension					
Final Insertion					
Follow-up Adjustments					

Outcome of overall student performance:  Clinically Outstanding  Clinically Acceptable

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## **General Policies for Graduate Programs**

### **Academic Credit**

The academic year is divided into two semesters. A credit hour (or semester hour) is approximately equivalent to one class hour per week or approximately fifteen hours per semester. There is not a credit hour requirement for successful completion of a program. Credit hours assigned to each course is for weighting each course for calculation of grade point average.

### **Methods for Assessing Student Participation in the Learning Process**

Student performance is evaluated using multiple measures over time which are reviewed semi-annually using student portfolios. Student performance includes the evaluation of clinical performance using proficiency measures, patient case presentations, course grades, incident and noteworthy reports, patient management record reviews, and self-evaluation of performance. Faculty evaluation and self-evaluation are essential aspects of the learning process. Building self-assessment skills assist students in better monitoring and adjusting their learning as they work toward clinical proficiency in the program. Once they graduate they will need to rely on their self-assessment skills to further refine their skills as they shift from proficiency towards mastery. Studies show that one major factor that discriminates highly successful clinicians from average ones is a refined ability to self-evaluate their performance both during and after the delivery of treatment. Therefore, the Program Evaluation Plan couples faculty evaluation of performance with student self-evaluation activities so as to support the future success of students after completion of the program. The use of student portfolios to compile evidence of their work and accomplishments can be used after the program to seek employment in private practice and/or academics.

Accordingly, not only are students continuously evaluated to ensure adequate feedback that supports effective learning, but they also evaluate the quality of the program and its teaching.

### **Research Project and Thesis**

At the outset of the research phase a research advisor is assigned to each student. The advisor is a faculty member of BUIDRE and is responsible for the selection of a research project, the supervision of all phases of the research project, academic guidance, evaluation of progress, and assistance in writing of the thesis. The thesis project will teach scientific methodology, research techniques, approaches to research questions, development of a hypothesis, data analysis, and the presentation of data. The student is expected to participate in bi-weekly research meetings with his/her research advisor. After completion of the thesis project the student is required to write a thesis according to guidelines stated below. Research projects will be supervised by full-time, on-site BUIDRE faculty members. Faculty members from Boston University may act as second or third readers in the thesis defense process.

Student progress will be monitored and evaluated at regular intervals of not more than one semester duration by the student's Thesis Defense Committee. The Chief Academic Officer is responsible for selecting faculty members to serve on the Committee which will be comprised of all faculty who serve as research advisors for the program and may include additional faculty. Research advisors are required to present an evaluation of the student's activities with respect to the academic performance (course grades not lower than a B), research quality, research

quantity, and attitude towards achieving his/her goals. The committee may make recommendations with respect to changes of the student's project. The committee is responsible for grading each student's performance. Unsatisfactory performance requires recommendations regarding remedial efforts (with or without prolongation of the program) or termination. The Chief Academic Officer will communicate with each student the findings of the committee. Successful completion of the program requires the completion of a thesis according to BUIDRE guidelines and the presentation of the research project in a seminar. Each thesis is evaluated by a first reader (advisor) and in some cases a second reader or a third reader (selected by the Thesis Defense Committee). At the completion of the project the Thesis Defense Committee reviews the final drafts of the student's thesis, provides input for the changes, and makes a final recommendation for awarding the degree.

For detailed instructions on thesis format and requirements, refer to the "Guidelines for Thesis Submission" in Appendix IV of the Student Handbook.

### **Outline of Study**

An outline of the research project, approved and signed by the research advisor, shall be submitted for the approval of the student's program no later than four months after initial registration. This program of study must be submitted to the BUIDRE primary research advisor.

### **Deadlines for Submission of Thesis or Dissertation**

Theses and dissertations must be submitted to the reader eight (8) weeks prior to the anticipated date of graduation. This allows ample time for the thesis/dissertation to be read and for corrections/revisions to be made. Delay in submission may result in postponement of the date of graduation, which, in turn, may result in additional tuition.

### **Institutional Review Board (IRB)**

Under DHCC regulations, an IRB is an appropriately constituted group that has been formally designated to review and monitor biomedical research involving human subjects. In accordance with regulations, an IRB has the authority to approve, require modifications in (to secure approval), or disapprove research. This review group serves an important role in the protection of the rights and welfare of human research subjects.

### **Policies Regarding Students in Combined Programs**

Students in combined programs that offer a certificate and research degree must complete the requirements of each program before they are awarded their certificate and degree. Students will not receive their research degree until they have completed their CAGS program. Students will not receive their certificate until the research project has been submitted, accepted and approved.

### **Time Limit**

The program shall be completed within four years after the first registration for study leading to the MSD degree.

## Grading Policy

### Grading Scale

Grades awarded for course work at BUIDRE are:

- A = 4.0
- A- = 3.7
- B+ = 3.3
- B = 3.0
- B- = 2.7
- C+ = 2.3
- C = 2.0
- C- = 1.7
- D = 1.0
- F = 0.0
- I = Incomplete
- W = Withdrawal

Please note that there are no A+, D+, D-, F+ or F- grades. A grade of “I” (incomplete) as an interim grade is only awarded in special circumstances such as an inability to complete course work due to illness or personal reasons beyond the student’s control and acceptable to a course director. An interim grade of “I” (incomplete) will not be recorded as a final grade. If the student has not rectified the “I” by no later than 30 days after the close of the semester, the grade will be recorded as W (withdrawn) or F.

Student promotion requires satisfactory completion of all course requirements, both clinical and didactic, and the maintenance of professional ethical standards

### Determination of Grades

The methods by which grades are allocated are determined by the course director. Didactic courses are to be *criterion reference* graded. Criterion referencing infers that there are *predetermined* cut-off points or standards matching numerical or percentage grades with corresponding letter grades. (Example: 90-100=A, 80-89=B, 70-79=C, 60-69=D, below 60=F). Norm referencing, which infers that letter grades are assigned to a comparative curve or scale of all the numerical grades in a given examination or course, is not to be used.

Preclinical or clinical courses are also to use criteria-referenced grading, using BUIDRE’s defined competencies and associated criteria of evaluation. Criterion referencing compares students’ work to pre-determined criteria for excellence or goals for the task or project to be graded. The mechanisms for applying criterion-referenced grading must be communicated to the student in a clear fashion (in writing) at the beginning of the course.

### Weighting of Course Work

The relative weighting of the various examinations, practical projects or clinical procedures which makes up the final course grade is at the discretion of the course director and will be *clearly provided to the student at the beginning of each course in the course syllabus*. Flexibility

in weighting of course work is not inappropriate but options (such as dropping the worst test score, etc.) must be made known to the students at the beginning of the course.

### **Weighting of Course Grades (Credits)**

Each course is assigned a number of credits. Credit assignment is for the sole purpose of calculating overall grade point average. Graduation is not dependant on accumulating a certain number of credits. Each postdoctoral program has a fixed curriculum and graduation is dependant on passing all courses in the curriculum, demonstrating clinical proficiency in the discipline and completing a research project, and writing and defending a thesis.

### **Posting Grades**

Course directors must inform students of the course grade within ten (10) business days of the final exam or end of course. Course directors may elect to send grades via email to students.

### **Grade Point Requirement and General Policy Regarding Deficient Grades**

Students are expected to maintain a grade point average of 3.0. Grades of “F” or “D” are not acceptable for promotion from year to year or for successful completion of a postdoctoral program. If the program director or curriculum committee allows a student with a deficient grade to remain in a program, that deficient grade must be rectified. A grade of “F” must be rectified by repetition of the course. A grade of “D” may, at the discretion of the course director, be remedied by a written or oral reexamination or completion of an assigned project.

When a student repeats a course in its entirety, the student may be awarded the grade earned for that course. When a deficiency grade is rectified by repeating a course, the original grade remains on the student’s transcript and a new grade is recorded for the year the course is retaken along with the designation “ Repeat or RP”. Successful completion of a remediation option short of repetition of a course in its entirety will result in a grade improvement from a “D” to a “C-“. Improvement of a grade of “D” by this means will be recorded in the transcript as a “C-“ with the designation “ Remediate or RM”.

### **Remediation of Deficient Grades**

Recommendations for scheduling of re-examinations, remediation projects or clinical practical exams for remediation of course failure should be communicated to the Curriculum Committee for review and approval. Furthermore, remediation programs or examinations of any type with the goal of improving a final grade should not be offered to a student without approval of the Curriculum Committee. Students with final grades of "D" will be considered by the Curriculum Committee for the option to take any scheduled re-examination. All students will be informed no later than three weeks prior to the announced dates for re-examination. Upon notification of approval to take re-examination(s) the student must contact the appropriate course director(s) involved and advise them of the intention to be present for the re- examination and must be present on the scheduled date(s). No substitute dates are allowed.

The specific option for remediation of a student's deficient grade is determined by the course director and is based on the *course director's judgment* as to the nature of the student's deficiencies and as to the student's ability to demonstrate mastery of the course material within a given period of time. For example, one student who demonstrates limited minor conceptual

deficiencies may be given a re-examination after a short period of study and tutoring; while it maybe in the best interest of another student who demonstrates a complete lack of understanding of course material to be required to repeat the course. All such remediation decisions must be approved by the Curriculum Committee prior to implementation.

Options for remediation of deficiencies of a didactic course may include:

- Written exam after a review/tutorial period.
- Oral examination.
- Successful completion of a comparable program outside of BUIDRE, the content of which is acceptable to the course director.
- A written paper or essay project.
- A repetition of part of the course.
- A repetition of the course in its entirety.

Options for remediation of deficiencies of a laboratory course may include:

- A special practical exam.
- A remedial period of laboratory work with specific goals or practical examinations
- Repetition of part of the course.
- Repetition of course in its entirety.

Options for remediation of deficiencies of a clinical course may include:

- a remedial period of clinical work with specific goals
- repetition of the clinical course (entire rotation or year).

A student who repeats a course in its entirety may be awarded any grade for the course. When a failed course is repeated in its entirety, both the original failure grade and the newly awarded grade will appear in the transcript. As the process of remediation may extend past the end of the academic year, the original grade is the basis for computation of the student's grade point average for the year. The new grade will be weighted into the following year's grade point average computation.

In general, remediation of failure is applicable for a failing final course grade. Remediation of failure of a single examination or project (quiz, progress exam, mid-term exam, final exam) is not necessary and in most instances inappropriate as scheduling multiple retake examinations during the academic year may be disruptive. However, where a single examination is critical for certification or progression from one area of instruction to another, timely remediation of an individual examination maybe appropriate. Examples might be C.P.R. certification examinations or clinical certification examinations during a preclinical course.

### **Remediation of Grades other than Failure**

In general, short of repeating an entire course, there are no options for improving an existing passing grade (A, B, C) through re-examination or other remedial work.

### **Written Examinations**

1. An instructor will proctor all examinations. Adequate proctors must be available for each room used in the administration of the examination.

2. Rooms should be sufficiently large enough for adequate separation of students. Advance scheduling of all examinations will allow the scheduling of additional classrooms if necessary.
3. Policy statements regarding cheating and consequences of cheating must be discussed with students prior to each examination.
4. Proctors should actively circulate throughout the room observing student behavior.
5. If a student is suspected of trying to get or give information during an examination, the following actions must be taken:
  - a. alert a second proctor (if appropriate);
  - b. proctors shall observe the situation as unobtrusively as possible;
  - c. if proctors observe enough evidence that cheating is occurring, the names of involved students must be noted and reported to the supervising faculty member;
  - d. the supervising faculty member shall provide a written report of the infraction to the course or program coordinator;
  - e. the course director or program coordinator shall provide a written report of the incident to the Chief Academic Officer;
  - f. the examination(s) of the student (s) in question shall be held by the course director until such time as a determination is made.

### **Clinical and Preclinical Practical Examinations**

1. All faculty members in the clinic should be aware of which students are taking a practical examination. This may be facilitated by posting a card on the operatory wall at time of practical examinations.
2. If a student is suspected of trying to get or give information during an examination, the following actions must be taken:
  - a. alert a second proctor
  - b. proctors shall observe the situation as unobtrusively as possible
  - c. if proctors observe enough evidence that cheating is occurring, the names of involved students must be noted and reported to the supervising faculty member
  - d. the supervising faculty member shall provide a written report of the infraction to the course director or program coordinator
  - e. the course director or program coordinator shall provide a written report of the incident to the Chief Academic Officer. The examination(s) of the student(s) in questions shall be held by the course director until such time as a determination is made.

### **Examination Review Policy**

In keeping with BUIDRE's philosophy that examinations and testing situations should be educational as well as evaluative in nature and to ensure timely reporting of performance to students, instructors shall follow the policies below:

1. Written Examinations: Examinations must be corrected, graded and returned to students for discussion of the questions with the class as a whole within two weeks in case of multiple choice exams and three weeks in the case of essay or combined essay/multiple choice exams.
2. Preclinical Laboratory Examinations: Materials, including teeth, restorations and other appliances, and grades, along with a written evaluation, will be returned to the student within three weeks.

3. Clinical Practical Examinations: Written evaluation must be supplied to the student within two weeks after the practical examination. It is directed that each program giving clinical exercise or practical examinations develop a standard, uniform, grade sheet to be utilized by those faculty giving the examination. A copy of this grade sheet, with appropriate comments, is given to the student upon completion of the examination.

### **Process for Recording Grades**

The office of the Manager of Student Services will email grade sheets and grading policies to each course instructor.

Instructors will be required to submit completed grade sheets to the Office of the Manager of Student Services and the Academic Office within ten business days of the last class or final exam.

The Office of the Chief Academic Officer will review course final grades and contact the student and the student's department of any deficiency grades (D or F). For students who receive a grade of "F", the Chief Academic Officer will notify the student that repetition of the course is necessary. For students who receive a grade of "D", the Office of the Chief Academic Officer will discuss arrangements with the course director for a re-examination. Please keep in mind that the course director has sole discretion to determine whether it may be in the best interest of a student who received a grade of "D" to re-take the course in its entirety and not offer a re-examination.

Incomplete grades must be resolved no later than 30 days after the close of the semester.

The Office of the Manager of Student Services will forward transcripts to program directors twice a year, in January and July. Programs may request transcripts, for academic review and advising. When requesting transcripts, departments must give the Manager of Student Services a minimum of 10 working days to prepare student transcripts.

Programs must submit grades to the Manager of Student Services on a grade sheet within ten business days of the end of each semester. Course name, number and final grade must be included. Programs are responsible for submitting research grades for each student. Research advisors must submit grades to the Office of the Manager of Student Services within ten business days of the completion of each academic year.

## **Library**

The Maktoum Harvard Medical Library is available to BUIDRE students, staff and faculty. The library will be opened with 5,000 books and 400 journals plus additional electronic resources. The facility will provide on-line access to numerous journals. The resources that they have access to may be particularly helpful in commercializing research results (e.g., Nexus/Lexus, etc.). Several of these services would require a fairly high cost subscription to access as an individual.

Please refer to the BUIDRE Library Guide Manual for detailed Library Services information.

## **Accreditation**

The Advanced Education Programs will be accredited by the United Arab Emirates Ministry of Education, Commission for Academic Accreditation.

This program follows the standards established by the Commission on Dental Accreditation (CODA) for advanced educational programs in Prosthodontics and the multidisciplinary scope of the specialty certificate examination of the American Board of Prosthodontics.

Currently, the CODA does not accredit international specialty programs. However, the Commission is considering revising this policy, and accreditation of international programs may be instituted in the future. Because the structure and curriculum of the program parallels that of the accredited program in Boston, the program is already prepared to apply for accreditation without any alterations if the CODA changes its policy and begins international accreditation of specialty programs.