الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

Advanced Education in General Dentistry Diploma

2021


بسم الله الرحمن الرحيم

I PREFACE

- Saudi Commission for Health Specialties (SCFHS) is the national regulatory body of postgraduate training programs across all health professions in Saudi Arabia.
- The primary goal of this document is to enrich the training experience of postgraduate trainees by outlining the learning objectives to enable them to become independent and competent future practitioners.
- The curriculum is a vital part of learning. In addition to informing trainees, trainers, and training supervisors with the goals and objectives of training, the curriculum will have major impacts on program planning, execution, and quality assurance of training outcomes.
- This curriculum may contain sections outlining some regulations of training, however such regulations need to be sought from training's "General Bylaws" and "Executive Policies" published by the Saudi Commission for Health Specialties (SCFHS), which can be accessed online through the official SCFHS website. In the occasion of discrepancy in regulation statements, the one stated in the most updated bylaws and executive policies will be the reference to apply.
- As this curriculum is subject to periodic refinements, please refer to the electronic version posted online for the most updated edition available at www.scfhs.org.sa.

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IV FOREWORD:

The Advance General Dentistry residency curriculum development team acknowledges the valuable contributions and feedback from the scientific committee members in the development of this program. We extend special appreciation and gratitude to all the members who have been pivotal in the completion of this booklet, especially the Curriculum Group, the Curriculum Specialists, and the Scientific Council. We would also like to acknowledge that the CanMEDS framework is a copyright of the Royal College of Physicians and Surgeons of Canada, and many of the descriptions' competencies have been acquired from their resources.

IV TABLE OF CONTENTS:

V INTRODUCTION:

1. Context of Practice

Advanced Education Programs in General Dentistry are educational programs designed to provide training beyond the level of pre-doctoral education in oral health care, using applied basic and behavioral sciences. Education in these programs is based on the concept that oral health is an integral part of total health. The programs are designed to expand the scope and depth of graduates' knowledge and skills to enable them to provide comprehensive oral health care to a wide range of population groups.

With an increasing number of dental schools graduating more dentists, along with the opening of new dental schools, more graduating dental students are considering utilizing Advanced Education in General Dentistry (AEGD) programs as a means to increase their understanding of the complexity of modern dentistry and to gain additional training and experience before joining practice. (1)

The increase in knowledge and advances in dental technology have raised oral health care to a new level, and dental educators and the profession have put increasing demands on the clinical competencies expected of new graduates. There have been radical reforms in the medical profession with its evidence-based and problem-based curricula, and its extension of the post-qualification training of family practitioners has meant that universities, colleges, and postgraduate institutes have developed new strategies. (2). Intensive clinical and didactic training in the comprehensive care of patients with complex medical issues, critical thinking, and treatment planning are the top priorities of our program. In addition, the AEGD program provides advanced training in dental specialties in an effort to expand the treatment repertoire practiced by our program's graduates. Program participants will also work and consult on a regular basis with orthodontists, periodontists, endodontists, and prosthodontists.

The program provides a broad-based experience in the diagnosis, treatment planning, and delivery of comprehensive general dental care to a wide variety of patients. Integration of the various disciplines of clinical dentistry, considering the patient's medical, dental, and psychosocial status, forms the program's broad approach to patient care.

Studies have shown that numerous unaddressed and neglected oral health issues have resulted in a high percentage of carious diseases in the community. The need for dental care, predominantly for illness-related dental care, drives the utilization of dental health services among children in Saudi Arabia. Enhancing oral health literacy and mitigating organizational and financial barriers to dental care for families will increase access to quality oral healthcare and promote better oral health practices and outcomes. (3). The prevalence of dental caries in a study conducted among male students aged 15-17 was found to be 72.9%. (4)

Dental caries is a serious public health problem that warrants immediate attention from the government and dental profession officials in Saudi Arabia. Baseline data on oral health and a good understanding of dental caries determinants are necessary for setting appropriate oral health goals. (5). It is the ethical and moral duty of all dentists to render the best possible treatment to every patient he/she will serve. However, problems arise if there is inadequate access to dental care, especially for areas where there is a huge demand in the society, but the treatment served is limited depending on the availability due to different circumstances, thus constituting a significant part of oral care problems.

The best solution that would effectively help resolve the issue is to establish a program wherein dentists may acquire both basic and advanced knowledge from different perspectives and methodologies that may equip them and help address this urgent issue wherein continuing care is the objective.

2. Goals and Responsibilities of Curriculum Implementation

This curriculum ultimately seeks to guide trainees to become competent in their respective specialties. Accordingly, this goal requires significant effort and coordination from all stakeholders involved in postgraduate training. As "adult-learners," trainees must be proactive, fully engaged, and exhibit the following: a careful understanding of learning objectives, self-directed learning, problem solving, an eagerness to apply learning by means of reflective practice from feedback and formative assessment, and self-awareness and willingness to ask for support when needed. The program director plays a vital role in ensuring the successful implementation of this curriculum. Moreover, training committee members, particularly the program administrator and chief resident, have a significant impact on program implementation. Trainees should be called to share responsibility in curriculum implementation. The Saudi Commission for Health Specialties (SCFHS) applies the best models of training governance to achieve the highest quality of training. Additionally, academic affairs in training centers and the regional supervisory training committee play a major role in training supervision and implementation. The Specialty Scientific Committee will guarantee that the content of this curriculum is constantly updated to match the highest standards in postgraduate education of each trainee's specialty.

A post-graduate two-year diploma course was offered to all Saudi dentists, which aims to provide extensive multidisciplinary training in the field of general dentistry that focuses on treatment planning, patient management, and comprehensive care. The program provides didactic and clinical training in proper sequencing of treatment and the delivery of comprehensive care in all aspects of modern dental procedures, using state-of-the-art equipment and techniques in a competitive setting. The instruction and experience provided in the AEGD can prepare trainees to be highly qualified modern dentists who are able to treat complex cases that encompass components from each of the established specialties and more suitable to fulfill the job of a quality dental healthcare provider in a primary care center.

The Advanced Education in General Dentistry (AEGD) aims to enable the residents to successfully treat patients with advanced and multidisciplinary dental diseases through evidence-based comprehensive treatment modalities. Such cases are too complex to be treated by general dentists and, therefore, are usually referred to specialists. The program fulfills the demand of the society by providing a holistic approach balancing the centeredness into modern teaching techniques and high-quality standards in our methodology, aiming to produce a globally competitive dentist that has an active role as a quality primary care provider for improving the community dental health that answers all its needs without limitation.

The mission of AEGD is to become a national, regional, and world-renowned leading postgraduate dental program that will cater to eligible general dentists and provide training beyond the level of pre-doctoral education in oral health care and research.

Formulated a well-structured and independent scientific continual training for general practitioners that will create an ideal work environment that will provide trainees with the tools necessary for excellence in dental care. The AEGD program aims to boost the academic achievement of trainees by implementing strategic, measurable, and effective learning methods.

The AEGD program is dedicated to providing the community with efficient, effective, and up-to-date resources. We anticipate that our graduates will be important members of the oral health community and perform to an outstanding level in clinics and research.

Overall Goals:

1. Act as primary care provider. This includes providing emergency and multidisciplinary comprehensive oral health care, providing patient-focused care coordinated by the general practitioner, directing health promotion and disease prevention activities, and using advanced dental treatment modalities.

2. Plan and provide multidisciplinary oral health care for a wide variety of patients, including those with special needs.

3. Manage the delivery of oral health care by applying concepts of patient and practice management and quality improvement that are responsive to a dynamic healthcare environment.

4. Function effectively within interdisciplinary health care teams.

5. Apply scientific principles to learning and oral healthcare This includes using critical thinking, evidence- or outcomes-based clinical decision-making, and technology-based information retrieval systems.

6. Use the values of professional ethics, lifelong learning, patient-centered care, adaptability, and acceptance of cultural diversity in professional practice.

7. Understand the oral health needs of communities and engage in community service.

The objective of the program is to achieve competency or proficiency in each of the goals listed below. Proficiency has a higher level of achievement than competency. Consequently, a resident can move from competency to proficiency throughout the year.

VI PROGRAM ENTRY REQUIREMENTS:

- Please refer to the executive policy of SCFHS on admission and registration.
- The eligibility criteria for enrolment in the diploma are as follows:
  - Bachelor's dental degree (e.g., BDS, DMD, DDS) from an accredited Dental University with a minimum GPA of 3.5/5.0
  - A valid Saudi Commission license
  - Passing the Saudi Dental Licensure Examination (SDLE)
  - English proficiency (TOEFL 60, IELTS 6.0)
  - Two letters of recommendation from dental supervisor.
  - Approval from employer, if applicable.

VII ABBREVIATIONS:

Abbreviation	Description
SCFHS	Saudi Commission for Health Specialties
AEGD	Advance Education of General Dentistry
R(1)	(First) year of residency
R(2)	(Second) year of residency
PT	Progress test
OSCE	Objective Structured Clinical Examination
OSPE	Objective Structured Practical Examination
Mini-CEX	Mini-Clinical Experience report
DOPS	Direct Observation of Procedural Skills report

VIII LEARNING AND COMPETENCIES:

1. Introduction to Learning Outcomes and Competency-Based Education

Training should be guided by well-defined "*learning objectives*" that are driven by targeted "*learning outcomes*" of a particular program to serve specific specialty needs. Learning outcomes should reflect the professional "*competencies*" and tasks that are aimed to be "*entrusted*" by trainees upon graduation. This will ensure that graduates meet the expected demands of the healthcare system and patient care in relation to their particular specialty. *Competency-based education* (CBE) is an approach of "*adult-learning*" that is based on achieving *pre-defined*, *fine-grained, and well-paced* learning objectives that are driven from complex professional competencies.

Professional competencies related to healthcare are usually complex and contain a mixture of multiple learning domains (knowledge, skills, and attitude). CBE is expected to change the traditional way of postgraduate education. For instance, the time of training, though a precious resource, should not be regarded as a proxy for *competence* (e.g., time of rotation in certain hospital areas is not the primary marker of competency). Furthermore, CBE emphasizes the critical role of informed judgment of learners' competency progress, which is based on a staged and formative assessment that is driven by multiple workplace-based observations. Several CBE models have been developed for postgraduate healthcare education (e.g., CanMEDs by the Royal College of Physicians and Surgeon of Canada [RCPSC], the CBME-Competency model by the Accreditation Council for Graduate Medical Education [ACGME], tomorrow's doctor in the UK, and

multiple others). The following are concepts that enhance the implementation of CBE in this curriculum:

- **Competency:** Competency is a cognitive construct that assesses the potential for efficient performance in a given situation based on the standards of the profession. Professional roles (e.g., experts, advocates, communicators, leaders, scholars, collaborators, and professionals) are used to define competency role in order to make it mendable for learning and assessment.
- **Milestones:** Milestones are stages of the developmental journey throughout the competency continuum. Trainees throughout their learning journey, from junior and throughout senior levels, will be assisted in their transformation from being novice/supervised to master/unsupervised practitioners. This should not undermine the role of supervisory/regulatory bodies in the malpractice of independent practitioners. Milestones are expected to enhance the learning process by pacing training/assessment to match the developmental level of trainees (junior vs. senior).
- **Learning-Domains:** Whenever possible, efforts should be directed to annotate the learning outcomes with the corresponding domain (K=Knowledge, S=Skills, and A=Attitude). You might have more than one annotation for a given learning outcome.
- **Content-area Categorization:** It is advisable to categorize learning outcomes in broad content areas related to the practice of profession. For example, diagnostic versus therapeutic, simple versus complex, urgent versus chronic, etc.
- **Trainees** are expected to progress from the novice to the mastery level in a certain set of professional competencies. SCFHS endorsed CanMEDs to articulate professional competencies. This curriculum applies the principles of competency –based medical education. CanMEDs/ACGME/OTHER represents a globally accepted framework outlining competency roles. The CanMeds 2015/ACGME 2018 framework" was adopted in this section.

ACGME reference and link

https://www.acgme.org/Portals/0/MilestonesGuidebook.pdf

2. Program Durations

The duration of the AEGD program is two years.

3. Program Rotations:

Training Year	Rotation Name	Duration
R1	General Clinical Rotation	11 Months
	Vacation	1 Month
R2	General Clinical Rotation	11 Months
	Pediatric Clinical Rotation	1 session/week/11 Months
	Vacation	1 Month

4. Mapping of Learning Objectives and Competency Roles to Program Rotations:

DENTAL EXPERT

Key Competencies	Learning Outcomes	Junior	Senior
	• Use and implement accepted sterilization, disinfection, universal precautions, and occupational hazard prevention procedures in the practice of dentistry.	✓	
	• Effective utilization of four-handed dentistry.	✓	
	• Improve dental auxiliary utilization.	✓	
	• Apply dental ergonomics.	✓	
	• Obtain and interpret a full patient history including "chief complaint, history of present illness, medical, dental, family and cultural background, social histories, and review of systems".	✓	
	• Describe the relevant biology, anatomy, and physiology of normal and abnormal intra-oral and extra-oral structures and tissues.	✓	
	• Identify emergency conditions.	✓	
	ORAL PATHOLOGY & MEDICAL DENTISTRY:	✓	
	• Explain the pathophysiology of disease.	✓	✓
	• Describe oral manifestation of systemic disease.	✓	✓
	• Diagnosis and manage oral manifestations of systemic disease.	✓	✓
	• Recognized indications and site selection for biopsies.	✓	✓
	• Outline risk factors and site for oral cancer.	✓	✓
	RADIOLOGY:	✓	
	• Align, expose, develop, and mount x-rays.	✓	✓
	• Interpret oral radiographs.	✓	✓
	• Recognize oral pathology.	✓	✓
	• Interpret computerized tomography (CAT SCAN), and magnetic resonance imaging (MRI).	✓	✓
	• Perform different dental radiographic techniques	✓	✓

Key Competencies	Learning Outcomes	Junior	Senior
	PERIODONTICS		
	• Outline biological basis of periodontal disease.	✓	✓
	• Define current concepts in periodontal therapy.	✓	✓
	• Treat periodontal disease.	✓	✓
	• Manage risk factors in periodontics	✓	✓
	• Perform surgical periodontal therapy.	✓	✓
	• Prescribe appropriate chemotherapeutic agents.	✓	✓
	• Perform crown lengthening procedures.	✓	✓
	IMPLANTOLOGY		
	• Describe the role of implant therapy.	✓	✓
	• Outline criteria, indications, and contraindications for implant therapy.	✓	✓
	• Perform surgical placement and restoration of implants.	✓	✓
	RESTORATIVE DENTISTRY		
	• Improve current knowledge of dental biomaterials.	✓	✓
	• Explain scientific basis for restorative therapy.	✓	✓
	• Provide pulp protection methods.	✓	✓
	PROSTHODONTICS		
	• Perform provisional restoration.	✓	✓
	• Replace missing dentition with appropriate removable and/or fixed dentures or implants.	✓	✓
	• Perform esthetic Dentistry: restorations, veneers, and bleaching.	✓	✓
	• Describe laboratory procedures in fixed and removable prosthodontics.	✓	✓

Key Competencies	Learning Outcomes	Junior	Senior
	• Perform cast post restoration.	✓	✓
	PEDODONTICS		
	• Diagnose and treat primary dentition pathology.	✓	✓
	• Perform oral hygiene procedures.	✓	✓
	• Manage pediatric emergency.	✓	✓
	• Explain etiology and treatment of “baby bottle caries.”	✓	✓
	• Recognize criteria for timing of molar extraction in children.	✓	✓
	ORTHODONTICS		
	• Recognize the time of orthodontic referral.	✓	✓
	• Analyze Cephalometric radiograph	✓	✓
	• Recognize role of orthodontics in comprehensive case treatment.	✓	✓
	• Describe Interceptive orthodontics.	✓	✓
	• Describe Adult orthodontics.	✓	✓
	PREVENTIVE DENTISTRY AND PUBLIC HEALTH:		
	• Perform fluoride therapy.	✓	✓
	• Apply Sealants and preventive resin restorations.	✓	✓
	• Apply infection control procedures guidelines of CDC, ADA, OSHA, and other agencies.	✓	✓
	• Participate in community health prevention dentistry program	✓	✓
	• Participate in patient Education Programs and lectures	✓	✓
	ENDODONTICS:		
	• Diagnose and treat most common and advanced endodontic problems on anterior and posterior teeth.	✓	✓

Key Competencies	Learning Outcomes	Junior	Senior
	• Improve biological knowledge of Endodontics.	✓	✓
	• Document patient history for treatment planning using the 4R Diagnostic System.	✓	✓
	• Describe pulp and periapical disease.	✓	✓
	• Perform Prefabricated post restorations.	✓	✓
	• Perform appropriate treatment sequence in multidisciplinary comprehensive care.	✓	✓
	• Provide emergency treatment.	✓	✓
	• Manage treatment complications.	✓	✓
	• Perform retreatment and simple surgical endodontics.	✓	✓
	• Manage trauma and endodontics.	✓	✓
	• Describe finalization system.	✓	✓
	MULTIDISCIPLINARY ORAL SURGERY:		
	• Recognize and prepare the needs for anesthesia or IV sedation.	✓	✓
	• Treat uncomplicated infection of dental origin.	✓	✓
	• Recognize and refer cysts and tumors.	✓	✓
	• Perform simple extractions of uncomplicated impacted teeth.	✓	✓
	• Treat oral surgical complications	✓	✓
	• Explain different flap design.	✓	✓
	• Perform Apico, Retro repair.	✓	✓
	• Perform Hemisection and root amputation.	✓	✓
	• Describe Suturing materials and methods.	✓	✓
	• Management of surgical complications.	✓	✓

Key Competencies	Learning Outcomes	Junior	Senior
	• Manage patient pre and post- surgery.	✓	✓
	BASIC SCIENCES		
	• Define Oral and Maxillofacial Anatomy.	✓	✓
	• Recognize Oral and Maxillofacial Pathology.	✓	✓
	• Define Oral Medicine.	✓	✓
	• Define Medical Dentistry.	✓	✓
	• Define Pharmacology.	✓	✓
	• Explain Anesthesia and Pain Control.	✓	✓
	• Explain Hospital Dentistry and Special Patient Care.	✓	✓
	• Perform physical Evaluation and Medical Emergencies.	✓	✓
	• Describe Biomaterials	✓	✓
	• Patient assessment and diagnosis:		
	• Interpret Maxillofacial Radiology.	✓	✓
	• Obtain and interpret a patient's chief complaint, history of present illness, medical, dental, family and cultural background, social histories and review of systems.	✓	✓
	• Obtain and interpret appropriate laboratory and radiographic data and obtain additional diagnostic information through consultation with other health care providers.	✓	✓
	• Perform a history and physical examination and collect other data to establish a risk assessment for use in the development of a dental treatment plan.	✓	✓
	Hard and Soft Tissue Surgery, and Hospital Protocol	✓	✓
	• Perform surgical and non-surgical extraction of erupted teeth.	✓	✓
	• Perform uncomplicated pre-prosthetic surgery	✓	✓

Key Competencies	Learning Outcomes	Junior	Senior
	• Recognize and manage surgical emergencies and complications of intraoral surgical treatment.	✓	✓
	• Extract uncomplicated impacted wisdom teeth.	✓	✓
	• Diagnose and manage common oral pathological abnormalities.	✓	✓
	• Provide dental treatment in the operating room	✓	✓
	PREVENTIVE DENTISTRY:	✓	✓
	• Define Preventive Orthodontics and Pediatric Dentistry.	✓	✓
	Pediatric Dentistry	✓	✓
	• Perform pediatric pulpal therapy.	✓	✓
	• Restore intra- and extra-coronal defects in primary dentition.	✓	✓
	• Perform uncomplicated surgical procedures on pediatric patients.	✓	✓
	• Use pharmacologic and non-pharmacologic behavior management skills with pediatric patients.	✓	✓
	Periodontal Therapy	✓	✓
	• Diagnose periodontal disease demonstrating periodontal examination and using radiographs.	✓	✓
	• Treat and manage mild and moderate periodontal disease, including non-surgical and surgical techniques.	✓	✓
	• Recognize and manage periodontal emergencies and complications of periodontal treatment.	✓	✓
	• Evaluate the results of periodontal treatment and establish and monitor a periodontal maintenance program.	✓	✓
	Pulpal Therapy	✓	✓
	• Diagnose and treat pain of pulpal origin, to include performing uncomplicated non-surgical endodontic therapy.	✓	✓
	• Recognize and manage uncomplicated endodontic situations and emergencies.	✓	✓

Key Competencies	Learning Outcomes	Junior	Senior
	Replacement of teeth	✓	✓
	• Treat patients with missing teeth who require uncomplicated removable and/or fixed prostheses.	✓	✓
	• Communicate care design with laboratory technicians and evaluate the resultant prostheses.	✓	✓
	• Recognize and manage cases requiring complicated prostheses.	✓	✓
	• Treat patients with missing teeth using uncomplicated dental implant restorations.	✓	✓
	• Manage the surgical component of dental implant systems.	✓	✓
	• Assess and manage complications of dental implants.	✓	✓
	Restoration of teeth	✓	✓
	• Restore single teeth using a functionally acceptable range of materials and methods.	✓	✓
	• Place restorations and perform techniques to enhance facial esthetics.	✓	✓
	• Restore intra- and extra-coronal defects.	✓	✓
	• Restore endodontically treated teeth.	✓	✓
	Sedation, pain, and anxiety control		
	• Evaluate the need for behavioral and/or pharmacologic modalities in managing pain and anxiety based upon psychosocial factors and anticipated clinical procedures.		
	• Use pharmacological agents in treating dental patients.		
	• Provide control of pain and anxiety in the conscious patient through the use of psychological interventions, behavior management techniques, local anesthesia, and oral and nitrous oxide conscious sedation techniques.		
	• Prevent, recognize, and manage complications related to the use and interactions of drugs to sedate patients and control pain and anxiety.		

Key Competencies	Learning Outcomes	Junior	Senior
	• Provide control of pain and anxiety in the conscious patient through the use of parenteral conscious sedation techniques.		
	• Anticipate, diagnose, and provide initial treatment and follow-up management for medical emergencies that may occur during dental treatment.		
	Treatment of medical and dental emergencies		
	• Diagnose and manage dental emergencies, performing uncomplicated or reversible techniques where indicated.		
	• Treat intraoral hard and soft tissue lesions of traumatic origin.		
	• Manage intraoral soft tissue lesions of non-traumatic origin.		
	• Evaluate scientific literature and use information in the literature in making professional decisions.		
	• Modify the treatment plan, if indicated, based on therapeutic outcomes, unexpected circumstances or the patient's individual needs.		
	• Develop and carry out dental treatment plans for special needs patients in a manner that considers and integrates those patients' medical, psychological, and social needs		

COMMUNICATOR

	Junior	Senior
Maintain a patient record system that facilitates the retrieval and analysis of the process and outcomes of patient treatment.	✓	✓
Integrate culturally appropriate modalities in the comprehensive treatment plan.	✓	✓
Explain and discuss with patients, parents or guardians, findings, diagnoses, treatment options, realistic treatment expectations, patient responsibilities, time requirements, sequence of treatment, estimated fees and payment responsibilities, in order to establish therapeutic alliance between the care provider and the patient and/or parent or guardian.	✓	✓
Demonstrate handover of care, using both verbal and written communication, during a patient transition to a different dental health care professional, setting, or stage of care.	✓	✓
Write appropriate referral and consultation request forms.	✓	✓

COLLABORATOR

Definition:

As collaborators, AEGD residents work effectively with other dental health care professionals to provide safe, high-quality, and patient-centered care

	Key competencies Residents are able to:	Enabling competencies Residents are able to:	Junior R1	Senior R2
1	Work effectively and appropriately with dentists, physicians and other colleagues in the dental health care professions	1.1 Work with other health care professionals and dental specialists to integrate care at the individual and community levels.	✓	✓
		1.2 Recognize and respect the diversity of roles, responsibilities, and competencies of other professionals in relation to their own.	✓	✓
		1.3 Work with others by applying the principles of team dynamics to assess, plan, provide, and integrate care for individual patients or group of patients.	✓	✓
		1.4 Negotiate overlapping and shared responsibilities with dentists and other health care professionals during episodic and ongoing care.	✓	✓
		1.5 Engage in respectful shared decision-making with dentists and other colleagues in the dental health care professions.	✓	✓
		1.6 Practice and promote the principles of jurisprudence and ethics in the practice of dentistry and in relationships with patients, personnel, and colleagues.	✓	✓
2	Work with dentists, and other colleagues in the dental health care professions to promote understanding, manage differences, and resolve conflicts	2.1 Show respect toward other colleagues and members of interprofessional team.	✓	✓
		2.2 Encourage the opinions and ideas of other interprofessional and intraprofessional dental health care team members.	✓	✓
		2.3 Value diversity among dental professionals.		✓
		2.4 Use constructive negotiation to resolves conflicts.		✓

	Key competencies Residents are able to:	Enabling competencies Residents are able to:	Junior R1	Senior R2
3	Hand over the care of dental patients to another dental health care professional when necessary to facilitate continuity of safe patient care	3.1 Determine when care should be transferred to another dentist or dental health care professional.	✓	✓
		3.2 Recognize one's own limitations and being aware of when to seek help from others.	✓	✓
		3.3 Demonstrate handover of care, using both verbal and written communication, during a patient transition to a different dental health care professional, setting, or stage of care.	✓	✓
		3.4 Write appropriate referral and consultation request forms.	✓	✓

LEADER

Definition:

As leaders, AEGD residents engage with others to contribute to the vision of a high-quality dental health care system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.

	Key competencies Residents are able to:	Enabling competencies: Residents are able to:	Junior R1	Senior R2
1	Contribute to improved delivery of dental health care in teams, organizations, and systems	1.1 Apply the science of quality improvement in enhancing patient care.		✓
		1.2 Contribute to a culture that promotes patient safety.	✓	✓
		1.3 Analyze patient safety incidents to enhance systems of care.	✓	✓
		1.4 Use health informatics to improve the quality of patient care and optimize patient safety.	✓	✓
2		2.1 Set priorities and manage time to achieve work-life balance.	✓	✓

	Key competencies Residents are able to:	Enabling competencies: Residents are able to:	Junior R1	Senior R2
	Manage their practice and career effectively	2.2 Manage a practice including finance and human resources.	✓	✓
		2.3 Implement processes to ensure improvement in personal practice.		✓
		2.4 Employ information technology appropriately for patient care.		✓
3	Allocate healthcare resources appropriately	3.1 Allocate dental care resources for optimal patient care.	✓	✓
		3.2 Apply evidence and management processes to achieve cost-appropriate care.		✓
4	Demonstrate leadership in professional practice	4.1 Demonstrate leadership skills to enhance dental care.	✓	✓
		4.2 Lead or implement a change in health care.		✓
		4.3 Chair or participate effectively in committees and meetings.		✓

ORAL HEALTH ADVOCATE

Definition:

As health advocates, AEGD residents responsibly use their expertise and influence to advance the oral health and well-being of individual patients, communities, and population.

	Key competencies Residents are able to:	Enabling competencies Residents are able to:	Junior R2	Senior R1
1	Respond to an individual patient's dental health needs and issues as part of patients' care	1.1 Work with patients to identify their individual oral health needs.	✓	✓
		1.2 Work with patients and their families to increase opportunities to adopt healthy dental behaviors.	✓	✓
		1.3 Use accepted prevention strategies, such as oral hygiene instruction, nutritional education and pharmacologic intervention to help	✓	✓

	Key competencies Residents are able to:	Enabling competencies Residents are able to:	Junior R2	Senior R1
		patients maintain and improve their oral and systemic health.		
2	Respond to the oral health needs of the communities that they serve	2.1 Work with the community or population to identify the determinants of oral health that affect its members.		✓
		2.2 Improve clinical practice by applying a process of continuous quality improvement to prevention, promotion, and surveillance of oral health.		✓
		2.3 Contribute to the process of improving oral health in the community or population served.		✓

SCHOLAR

Definition:

As scholars, AEGD residents demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others, evaluating evidence, and contributing to scholarship.

	Key competencies Residents are able to:	Enabling competencies Residents are able to:		Junior (R1)	Senior (R2)
1	*LIFELONG LEARNING* Maintain and enhance professional activities through continuous learning	1.1	Develop and implement a personal learning plan to enhance professional practice.	✓	✓
		1.2	Identify opportunities for learning and improvement by regularly reflecting on and assessing personal performance using various internal and external data sources.	✓	✓
		1.3	Engage in collaborative learning to improve personal practice and contribute to collective improvements in practice in an ongoing manner.	✓	✓
		1.4	Learn from and make use of the expertise of other dentists or dental health care professionals.	✓	✓
2	*TEACHER* Teach students, residents, patients, public, and other health care professionals	2.1	Recognize the influence of role modeling and the impact of the formal, informal, and hidden curriculum on learners.		✓
		2.2	Promote a safe learning environment.	✓	✓
		2.3	Ensure that patient safety is maintained when learners are involved.	✓	✓
		2.4	Plan and deliver a learning activity.		✓
		2.5	Provide feedback to enhance learning and performance.		✓
		2.6	Assess and evaluate learners, teachers, and programs in an educationally appropriate manner.		✓
3	*EVIDENCE-INFORMED DECISION-MAKING* Integrate best available evidence into practice	3.1	Recognize uncertainty in clinical practice and knowledge gaps in clinical and other professional encounters, and generate focused questions that address them.		✓
		3.2	Identify, select, and navigate pre-appraised resources.	✓	✓
		3.3	Critically evaluate the integrity, reliability, and applicability of health-related research and literature.	✓	✓

	Key competencies Residents are able to:	Enabling competencies Residents are able to:		Junior (R1)	Senior (R2)
		3.4	Integrate evidence into decision-making in clinical practice.	✓	✓
4	*RESEARCH* Contribute to the creation and dissemination of knowledge and practices applicable to health	4.1	Demonstrate an understanding of the scientific principles of research and scholarly inquiry and the role of research evidence in health care.	✓	✓
		4.2	Identify ethical principles for research and incorporate them into obtaining informed consent, considering potential harms and benefits, and accounting for vulnerable populations.	✓	✓
		4.3	Contribute to the work of a research program.	✓	✓
		4.4	Pose questions amenable to scholarly inquiry and select appropriate methods to address them.	✓	✓
		4.5	Summarize and communicate to professional and lay audiences, including patients and their families, the findings of relevant research and scholarly inquiry.	✓	✓

PROFESSIONAL

Definition:

As professionals, AEGD residents are committed to the dental health and well-being of individual patients and the society through ethical practice, high personal standards of behavior, accountability to the profession and society, dentist-led regulation, and maintenance of personal oral health.

	Key competencies Residents are able to:	Enabling competencies Residents are able to:		Junior (R1)	Senior (R2)
1	COMMITMENT TO PATIENTS Demonstrate a commitment to patients by	1.1	Exhibit appropriate professional behavior and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality.	✓	✓

	Key competencies Residents are able to:	Enabling competencies Residents are able to:	Junior (R1)	Senior (R2)
	applying best practices and adhering to high ethical standards	1.2 Put patients' interests before their own or those of any colleague, organization, or business.	✓	✓
		1.3 Maintain confidentiality with regard to patients' information and utilize them solely for their intended purpose.	✓	✓
		1.4 In special cases, it may be justified to make confidential patient information known without consent if it is in the interest of the public or the patient.	✓	✓
		1.5 Maintain appropriate boundaries in relationships with patients and without abusing those relationships.	✓	✓
		1.6 Demonstrate a commitment to excellence in all aspects of practice.	✓	✓
		1.7 Recognize and respond to ethical issues encountered in practice.	✓	✓
		1.8 Politely reject any payment, gift, and hospitality, request to make or accept any referral that may affect professional judgment.	✓	✓
		1.9 Treat patients politely and with respect, recognizing their dignity and rights as individuals.	✓	✓
		1.10 Recognize and promote the patient's responsibility for making decisions about oral and dental treatment.	✓	✓
		1.11 Treat patients fairly and in line with the law.	✓	✓
		1.12 Recognize and manage conflicts of interest.		✓
		1.13 Display professional behavior in the use of technology-enabled communication.		✓
2	COMMITMENT TO SOCIETY	2.1 Demonstrate accountability to patients, society, and the profession by responding to societal expectations of dentists.	✓	✓

	Key competencies Residents are able to:	Enabling competencies Residents are able to:		Junior (R1)	Senior (R2)
	Demonstrate a commitment to society by recognizing and responding to societal expectations in oral health care	2.2	Demonstrate a commitment to patient safety and quality improvement.	✓	✓
3	COMMITMENT TO PROFESSION Demonstrate a commitment to the profession by adhering to standards and participating in dentist-led regulation	3.1	Fulfill and adhere to the professional and ethical codes, standards of practice, and laws governing dental practice.	✓	✓
		3.2	Recognize laws and regulations that affect a dentist's work, premises, equipment and business, and follow them.	✓	✓
		3.3	Recognize and respond to unprofessional and unethical behaviors in dentists and other colleagues in the health care professions.	✓	✓
		3.4	Treat all team members and other colleagues fairly and in line with the law without discrimination.	✓	✓
		3.5	Participate in peer assessment and setting of standards.		✓
		3.6	Share knowledge and skills effectively with other team members and colleagues in the interests of patients.		✓
4	COMMITMENT TO SELF Demonstrate a commitment to dental health and well-being to foster optimal patient care.	4.1	Display self-awareness and manage influences on personal well-being and professional performance.	✓	✓
		4.2	Manage personal and professional demands for a sustainable practice throughout life.	✓	✓
		4.3	Promote a culture that recognizes, supports, and responds effectively to colleagues in need.	✓	✓

Milestones and continuum of learning

Milestones are a new feature of CanMEDS 2015 (part of the CBD project) and reflect the abilities expected of a health professional at a certain stage of expertise. These milestones represent a continuum of learning and training. This continuum focuses on residency and continuing professional development after graduation. The CBD continuum approach breaks down specialist education into a series of integrated stages (see diagram), whereby residents in the program develop competencies at different stages during their residency and throughout practice. These stages are:

Transition to discipline stage: This is a new preparatory stage emphasizing the clinical knowledge and skills of the resident before entering the clinic.

Foundation of discipline: This stage covers scientific research and basic core science before progressing to more advanced discipline-specific competencies.

Core of discipline: This is the main stage in which the resident covers the core competencies that constitute the majority of the discipline. This begins with the basic specialty and progresses to become more advanced and complex during the transition from junior to senior residency.

Continuing professional development: After graduation, dentists progress in competence to attain expertise during continuing professional development (learning in practice).

Clinically, residents in the training program will be exposed to different cases from different training centers. Therefore, their responsibility in the clinic will increase and progress across the duration of the training period, starting with clinical examination and making the correct diagnosis by devising a treatment plan and appropriate management. Junior residents are responsible for examining, collecting full patient records and data, making the correct diagnosis, and writing a treatment plan. Moreover, junior residents perform dental procedures in clinics and provide high-quality treatment to their patients. The earlier procedures were performed under the

supervision of an assigned specialist and consultant. Senior residents have greater responsibility for the management of advanced cases, in addition to teaching junior residents under minimum supervision by a specialist and consultant.

The following table shows the expected continuum of learning that should be achieved at each level of progression.

Procedures	Junior level	Senior level
Medical expert: Comprehensive dental treatment includes: • Clinical examination • Diagnosis • Treatment plan • Restorative procedures • Limited endo, prostho, and perio procedures • Recall and follow-up.	Residents show limited knowledge, skills, and broad competencies. Residents work in a dental clinic with close supervision. Their attitude is under development.	Residents show knowledge and experience as specialists in restorative, endo, prostho, and perio procedures. Residents work in dental clinics without close supervision. Residents perform general dental procedures as expected in restorative dentistry, endodontics, and prosthodontics. Their attitude develops as expected of a specialist in restorative dentistry.
Communicator	Residents can actively listen and respond to a patient inquiry. Residents use appropriate non-verbal body language to demonstrate attentiveness, interest, and responsiveness to patients and their families.	Residents use appropriate non-verbal body language to enhance communication with patients. Residents provide information on diagnosis and prognosis in a clear, compassionate, respectful, and objective manner. Residents facilitate discussions with patients and their families

Procedures	Junior level	Senior level
		in a respectful and safe environment.
Collaborator	Residents respect the established rules of their team. Residents receive and appropriately respond to input from other health care professionals. Residents differentiate between task and relationship issues among health care professionals.	Residents work effectively with dentists and other health care professionals. Residents establish and maintain positive and healthy relationships with dentists and other health care professionals.
Leader	Residents describe the process for reporting adverse events and medical errors. Residents determine cost discrepancies between best practice and their current practice.	Residents analyze adverse events and medical errors to enhance systems of care. Residents develop plans to change areas of wasteful practice within their discipline. Residents evaluate a problem, set priorities, execute the plan, and analyze the results.
Health advocate	Residents respond to an individual patient's health needs by advocating for the patient within and beyond the dental clinical environment. Residents analyze a given patient's needs for health services or resources related to the scope of their discipline. Residents select appropriate patient education resources related to their discipline.	Residents apply the principles of behavior modification during conversations with patients to improve oral health. Residents participate in a process to improve oral health in the community.

Procedures	Junior level	Senior level
Scholar	Residents review and update earlier learning plan(s) with input from others. Residents demonstrate basic skills in teaching others. Residents demonstrate an understanding of the importance of scientific research and analyze its limitations and applicability.	Residents create a learning plan, incorporating all the CanMEDS domains. Residents discuss a learning plan and strategy for ongoing self-monitoring with a mentor and faculty advisor. Residents conduct scientific research.
Professional	Residents manage tensions between societal and dentists' expectations. Residents demonstrate an ability to regulate tension, emotions, thoughts, and behaviors while maintaining their capacity to perform professional tasks.	Residents demonstrate a commitment to patients by applying best practices and adhering to high ethical standards. Residents demonstrate a commitment to patients by applying best practices and adhering to high ethical standards.

IX CONTINUUM OF LEARNING

Undergraduate	R 1	R 2	Consultant
Non-practicing	Dependent/supervised practice	Dependent/supervised practice	Independent practice/provide supervision
Obtain basic health science and foundational level to core discipline knowledge	Obtain fundamental knowledge related to core clinical problems of the specialty	Apply knowledge to provide appropriate clinical care related to core clinical problems of the specialty	Acquire advanced and up-to-date knowledge related to core clinical problems of the specialty
Internship to the practice of discipline	Apply clinical skills such as physical examination and practical procedures related to the core problems of the specialty	Analyze and interpret the findings from clinical skills to develop appropriate differential diagnoses and management plan for the patient	Compare and evaluate challenging, contradictory findings and develop expanded differential diagnoses and management plan

X TEACHING METHODS

The teaching process in postgraduate diploma training programs is mainly based on the principles of adult learning theory. As trainees are cognizant of the importance of learning, they play an active role in its content and process. The training programs implement the adult learning concept on each feature of the activities where the residents are responsible for their own learning requirements. Formal training time includes the following three teaching activities:

- Program Specific Learning Activities
- Universal topics
- General Learning Opportunities

1.1 Program Specific learning activities:

Program-specific activities are educational activities that are specifically designed and intended for trainees' teaching during their training time. The trainees are required to attend these activities; non-compliance may result in disciplinary action. The program administration should support these activities by allocating time for trainees to attend these activities and allow them to participate in such activities.

A) Academic half day:

Every week, at least 2-4 hours of formal training time (commonly referred to as academic half day) should be reserved. A formal teaching time is an activity that is planned in advance with an assigned tutor, time slots, and venue. Formal teaching time excludes bedside teaching, clinic postings, etc. The academic half-day covers the core specialty topics that are determined and approved by the specialty's scientific council aligned with the specialty-defined competencies and teaching methods. The core specialty topics will ensure that important clinical problems of the specialty are well taught. It is recommended that lectures be conducted in an interactive, case-based

discussion format. The learning objectives of each core topic need to be clearly defined, and it is preferable to use a pre-learning material. Whenever applicable, core specialty topics should include workshops, team-based learning (TBL), and simulation to develop skills in core procedures. Regional supervisory committees in coordination with academic and training affairs, program directors, and chief residents should work together to plan and implement the academic activities, as indicated in the curriculum. There should be an active involvement of the trainee in the development and delivery of the topics under faculty supervision; the involvement might be in the form of delivery, content development, research, etc. The supervisor's educator should ensure that each topic is stratified into three categories of the learning domain: knowledge, skill, and attitude. The curriculum includes weekly literature review seminars covering historical and current articles from peer-reviewed scientific dental literature and topics in general dentistry seminars. (see Appendix B for the table on top conditions and procedures in specialty).

This section describes the required courses and workshops. These courses are the specialty components of the diagnostic sciences, preventive, restorative, and prosthodontic program curricula. Their main focus is to develop the residents' skills and knowledge on basic principles necessary to prepare them for proficient patient clinical and laboratory care. The knowledge and psychomotor skills gained in this course will also provide the residents with the ability and confidence to acquire further knowledge and technical skills in the different disciplines of AEGD. see Appendix-B for details of these courses)

Table of Courses:

Course Title	Course Level
1. Dental Photography	R1
2. Medical Dentistry	R1
3. Dental Biomaterial	R1
4. Endodontics Part 1 Basic Endodontics	R1
5. Endodontics Part 2 Advance Endodontics	R1
6. Endodontics Part 3 Surgical Endodontics	R1
7. Prosthodontics	R1
8. Orthodontics	R1
9. Book Review	R1
10. Periodontics	R2
11. Dental Implants	R2
12. Pedodontics	R1
13. Basic Comprehensive Dental Care	R1
14. Clinical Restorative Dentistry	R2
15. Clinical Prosthodontics	R2
16. Clinical Endodontics	R2
17. Intensive CAD-CAM learning	R1
18. Advance Comprehensive Dental Care	R2
19. Basic Research	R2

EXAMPLES OF WEEKLY EDUCATION ACTIVITIES

DAY	8:00 - 9:00	9:00 -10:00	11:00 - 12:00	12:00 - 1:00	1:00 - 4:00
SUN		GENERAL DENTISTRY CLINIC		LUNCH & PRAYER	ACADEMIC HALF DAY
MON		GENERAL DENTISTRY CLINIC			GENERAL DENTISTRY CLINIC
TUES		TREATMENT PLANNING & CASE PRESENTATION			GENERAL DENTISTRY CLINIC
WED		GENERAL DENTISTRY CLINIC			GENERAL DENTISTRY CLINIC
THURS		GENERAL DENTISTRY CLINIC			GENERAL DENTISTRY CLINIC

B) Treatment planning and case presentations:

The curriculum includes weekly treatment planning seminars / case presentation seminar that provides advanced education in diagnosis and treatment planning, as well as in the presentation of clinical cases.

C) Practice –based Learning:

Practice-based learning allows educators to supervise trainees to become competent in the required program practical skills that ensure fulfilling knowledge, psychomotor, and/or attitude learning domains.

Each trainee needs to maintain a logbook documenting the procedures observed, performed under supervision, and performed independently. It would be prudent to determine the minimum number of procedures to be performed before training completion and the minimum number needed to maintain competency after certification.

Procedural requirements upon completion of residency according to level of training:

Procedure		CODE	Minimum Requirement (2 years)	Minimum requirements/year R1	R2	Remarks
I. TREATMENT PLAN AND DIAGNOSIS						
Approved treatment plan according to AEGD guidelines for adult patients			6	3	3	Per patient
Approved treatment plan according to AEGD guidelines for pediatric patients			1	0	1	Per patient
Approved treatment plan according to AEGD guidelines for medically compromised patients			1	0	1	Per patient
Diet analysis for adult patients			6	3	3	Per patient
Smile analysis for adult patients			6	3	3	Per patient
Diet analysis for pediatric patients			1	0	1	Per patient
II. CARIOLOGY						
Caries control for adult patients			6	3	3	Per patient
Caries control for pediatric patients			1	0	1	Per patient
Caries assessment for adult patients			6	3	3	Per patient
Caries assessment for pediatric patients			1	0	1	Per patient
III. OPERATIVE						
Amalgam (depend on the center)	Amalgam all classes		10	5	5	Per tooth
Composite	Anterior (Cl III, IV, V)		50	25	25	Per tooth
	Posterior (Cl I, II, V, VI)		50	25	25	Per tooth
	Anterior composite buildup		8	3	5	Per tooth
	Posterior composite buildup		8	3	5	Per tooth

Procedure		CODE	Minimum Requirement (2 years)	Minimum requirements/year R1	R2	Remarks
Glass ionomers (resin-modified)			15	5	10	Per tooth
Pit and fissure sealants			15	5	10	Per tooth
Preventive resin restoration			10	5	5	Per tooth
IV. ESTHETIC						
In-office bleaching			4	1	3	Assessed per arch with a minimum of four teeth per arch
Home bleaching			4	1	3	Per arch
Non-vital bleaching			3	1	2	Per tooth
Microabrasion			3	1	2	Per tooth
Enameloplasty/reshaping			2	0	2	Per tooth
Inlay/onlay			8	4	4	Per tooth
Veneers	Direct - composite		4	0	4	Per tooth
	Indirect - ceramic		6	-	6	Per tooth
Full coverage crown (minimum 5 PFM)			40	10	30	Per tooth
V. ENDODONTIC						
Anterior	RCT		15	5	10	
Premolar	RCT		15	5	10	
Molar	RCT		10	5	5	
VI. RESTORATION OF ENDODONTICALLY TREATED TEETH						
Post and core (min. 5 cast post and core)			25	5	20	
VII. PROSTHODONTIC						
Removable denture			2	-	2	Per arch
Non-surgical management of TMJ dysfunction			1	-	1	

Procedure	CODE	Minimum Requirement (2 years)	Minimum requirements/year		Remarks
			R1	R2	
VIII. IMPLANT					
Implant fixed prosthesis		3	-	3	
IX. PEDODONTICS					
Fissure sealant		5	0	5	
Restoration		10	0	10	
Topical fluoride		5	0	5	
Pulp therapy		5	0	5	
St.st crowns		5	0	5	
Space maintainer		1	0	1	
X. SURGERY					
Extraction		30	10	20	Per tooth
XI. PERIODONTICS					
Scaling and root planning		6	3	3	Per Patient
XII. RECALL					
6 months, completed comprehensive case recall for adult patients		3	0	3	Per Patient

Minimum Clinical Case Requirement per Resident Level (per Patient Case) Comprehensive Requirement Specification		
Complexity	Required Number	Specification
Simple (S)	2	3 Crowns (with Endo, Resto, and Prostho)
Moderate (M)	3	3 Crowns + Surgery (with Endo, Resto, and Prostho)
		4 – 10 Crowns (with Endo, Resto, and Prostho)
Total	4 to 5	They have to begin from Residency 1 atleast
	4 to 5	Completed Comprehensive Case in 2 Years

1.2 Universal Topics

Universal topics are educational activities developed by SCFHS and are intended for all specialties. They are available as e-learning material via personalized access for each trainee (to access the online modules). Each universal topic will have a self-assessment section at the end of the module. Universal topics are mandatory components for the trainees' annual promotion from their current level of training to the subsequent level. The topics are delivered in a modular fashion. At the end of each learning unit, there will be an online formative assessment. After the completion of all topics, there will be a combined summative assessment in the form of a context-rich MCQ. All trainees must attain a minimum competency in the summative assessment. (see Appendix-D for table of topics) The titles of these universal topics are listed and described in the following modules.

Module	Topic	Subtopic
1	Introduction	Safe drug prescription
		Hospital-acquired infections
		Sepsis; SIRS; DIVC
		Antibiotic stewardship
		Blood transfusion
2	Cancer	Principles of cancer management
		Side effects of chemotherapy and radiation therapy
		Oncologic emergencies
3	Diabetes and Metabolic Disorders	Recognition and management of diabetic emergencies
		Management of diabetic complications
		Abnormal ECG
4	Medical and Surgical Emergencies	Management of acute chest pain
		Management of acute breathlessness
		Management of hypotension and hypertension
5	Acute Care	Pre-operative assessment
		Acute pain management
		Chronic pain management
6	Ethics and Healthcare	Occupational hazards of HCW
		Evidence-based approach to smoking cessation
		Patient advocacy
		Ethical issues: transplantation/ organ harvesting; withdrawal of care
		Ethical issues: treatment refusal; patient autonomy
		Role of doctors in death and dying

1.3 General Learning Opportunities:

A formal training time will be supplemented by other practice-based learning (PBL), such as:

- Journal Club

- Grand rounds
- Continuous professional activities (CPD) (conferences and workshop)

A monthly journal club activity should be planned in advance with an assigned tutor, time slots, and venue. Residents from all hospitals in the region will attend this activity.

Every month, at least one hour should be allocated to a meeting with mentors, conducting a portfolio review, monitoring patient progress , etc.

Trainees are required to attend and participate in the academic and clinical activities of the department, such as grand rounds, systemic reviews, and treatment plan seminars.

XI ASSESSMENT AND EVALUATION

1. Purpose of Assessment

Assessment plays a vital role in successful postgraduate training. Assessment will guide trainees and trainers to achieve defined standards, learning outcomes, and competencies. In addition, the assessment will provide feedback to learners and faculty regarding curriculum development, teaching methods, and quality of the learning environment. A reliable and valid assessment is an excellent tool for assessing curriculum alignments between objectives, learning methods, and assessment methods. Finally, assessments assure patients and the public that health professionals are well trained and competent.

Assessment can serve the following purposes:

a. **Assessment for learning:** Assessment provides information regarding trainees' level of knowledge, understanding, and skills and informs educators on the trainees' scope for improvement. It helps the faculty to recognize areas for improvement in relation to residents' performance and taking appropriate and timely measures to address their academic needs and problem immediately.

b. **Assessment as learning:** It involves trainees in the learning process, which enables them to monitor their own progress. Trainees use self-assessment and educators' feedback to reflect on their progression. It develops and supports trainees' metacognitive skills. Assessment as learning is crucial in helping residents/fellows become lifelong learners.

c. **Assessment of learning:** It is used to demonstrate the achievement of learning. This is a graded assessment and is usually counted toward the trainees' end-of-training degree.

d. **Feedback and evaluation:** Assessment outcomes will represent quality metrics that can improve learning experience.

Miller's Pyramid of Assessment provides a framework for assessing the trainees' clinical competences which acts as a roadmap for the trainers to select the assessment methods to target different clinical competencies including "knows," "knows how," "shows how," and "does" (Appendix F).

The assessment plan of the AEGD program is formulated in accordance with the Saudi Commission's training and examination rules and regulations and classified into two main categories: formative and summative.

2. Formative Assessment

2.1 General Principles

The residents, as adult learners, should strive for positive feedback throughout their journey of competency from the dental expert to the professional level. Formative assessment is distributed throughout the academic year, primarily to provide trainees with effective feedback. Input from the overall formative assessment tools will be helpful at the end of the year to make the decision to promote each individual trainee to a higher training level. According to the executive policy on continuous assessment (available online: www.scfhs.org), formative assessment will have the following features that will be based on Miller's pyramid (Appendix F) :

a. Multisource: minimum four tools.
b. Comprehensive: covering all learning domains (knowledge, skills, and attitude).
c. Relevant: focusing on workplace-based observations.
d. Competency-milestone oriented: reflecting the trainee's expected competencies that match the trainee's developmental level.

Trainees should actively seek feedback during training. However, trainers are expected to provide timely and formative assessments. Formative assessment is conducted toward the end of each training year throughout the

program in accordance with the SCFHS Executive Policy of Continuous Assessment and Annual Promotion (available online).

These assessment parameters and features of evaluation are beneficial as AEGD is an educational program designed to provide training beyond the level of pre-doctoral education in oral health care, using applied basic and behavioral sciences. A side by side analysis of formative and summative assessment strikes the right balance for both the residents and the AEGD program, as broad alignment between both forms of assessments can assure successful overall learning outcomes.

2.2 Formative Assessment Tools

The following Table summarizes the annual formative assessment tools that will be applied in this program.

1. End of year in-training report (continuous appraisal)

Learning Domain	Formative Assessment Tools	Specification/ Frequency	Level
Knowledge	- Case Based Discussion (CBD) Promotion Exam	- CBD with program director/Once during R1 and once at the end of R1 - SOE	R1
Skills	- Log Book - Multidisciplinary Case Presentation	- Committee-Assessment/every 3 months - Workplace Based Assessment/ Once during R1	
Attitude	ITER: In-Training Evaluation Report	Direct observation/ every 3 months	

Learning Domain	Formative Assessment Tools	Specification/ Frequency	Level
Knowledge	- Case Based Discussion (CBD) - Scientific activities	- Case Based Discussion/ once during R2 - During R2 (refer to table of courses)	R2
Skills	- Log Book - Multidisciplinary Case Presentation - DOPS	- Committee-Assessment/ every 3 months - Workplace Based Assessment/ once during R2 - Workplace Based Assessment/ once during R2	
Attitude	ITER: In-Training Evaluation Report	Direct observation/ every 3 months	

This evaluation report is prepared for each resident at the end of each year on a quarterly basis, oral presentation on a regional treatment plan, and oral clinical examination, in addition to completion of the clinical requirements. These clinical requirements should be documented using an electronic tracking system on an annual basis. Evaluations are based on achieving the minimum requirements of the procedures and clinical skills.

2. End of year in-training evaluation: formative continuous evaluation

This evaluation should fulfill the CanMEDS competencies based on the in-training evaluation, including medical experts, communicators, collaborators, leaders, health advocates, and scholars. The resident's performance will be evaluated by the program director and joint staff (at least two) for the following competencies:

1. Performance of the trainee during daily work for each discipline.
2. Performance and participation in academic activities.
3. Performance of diagnostic and therapeutic procedural skills by the trainee (direct observation procedural skills [DOPS] and daily direct clinical supervision). Timely and specific feedback for the trainees after each procedure is mandatory.
4. In-Training Evaluation Report (ITER): It must be completed at the end of a rotation every three months during the training year and signed by at least two consultants. The program director will discuss the evaluation with the resident as necessary; thereafter, the resident should sign the form.
5. The clinical requirements should be documented by an electronic tracking system (e-logbook when applicable) on an annual basis. Evaluation will be based on the achievement of the minimum requirements of the procedures and clinical skills as determined by the program.

3. Summative Assessment

3.1 General Principles

Summative assessment is a component of assessment that primarily aims to make informed decisions on trainees' competency. In comparison to formative assessment, summative assessment does not aim to provide constructive feedback. For further details on this section, please refer to the general bylaws and executive policy of assessment (www.scfhs.org). Upon successful completion of all training rotations, trainees will be granted "Certification of Training Completion" following which they will be eligible to appear for the final exams.

3.2 Summative Assessment Tools

The following Table summarizes the summative assessment tools that will be applied in this program.

Learning Domain	Summative Assessment Tools	Passing score	Specification/ Frequency
Knowledge	Final Exiting Examination	> 60%	One final exam at the end of the training year
Skills	Structured Oral Examinations (SOE)	> 60 %	One exam during R2
Attitude	ITER: In-Training Evaluation Report	Successfully pass ITER	Every 3 months during the training year

3.3 Principles of AEGD Examination (Promotion Exam)

This is conducted in the form of an SOE, and is held at least once a year. It is mandatory to clear the promotion exam in order to be eligible for promotion from junior to senior (from R1 to R2). The number of examination items, eligibility, and passing score will be in accordance with the SCFHS executive policy of continuous assessment and an nual promotion rules and regulations.

Blueprint of the promotion exam is shown in the following table:

No.	Sections	Percentage (%)
1	Cariology	25
2	Operative	25
3	Endodontics	25
4	Prosthodontics	25
Total		100%

3.4 Final AEGD Exiting Examination (Examination Part 2)

The final AEGD examination comprises two parts:

i Written examination

This examination assesses the theoretical knowledge base (including recent advances) and problem-solving capabilities of candidates in the specialty of AEGD. It is delivered in an MCQ format and held at least once a year. The number of examination items, eligibility, and passing score will be in accordance with the SCFHS executive policy of continuous assessment and annual promotion rules and regulations.

ii Structured Oral examination

This examination assesses a broad range of high-level clinical skills, including gathering data, patient management, and communication and counseling skills. The examination is conducted at least once a year. The examination eligibility and passing score will be in accordance with the SCFHS executive policy of continuous assessment and annual promotion rules and regulations. (see Appendix E for details of the SOE)

Blueprint of the second part of the exam is shown in the following table:

No.	Sections	Percentage (%)
1	Operative	25
2	Endodontics	15
3	Prosthodontics	12
4	Periodontics	10
5	Dental implant	8
6	Pediatric Dentistry	10
7	Oral Surgery	6
8	Hospital Dentistry	6
9	Research Ethics and Professionalism and Patient Safety	8
Total		100%

3.5 Certification of Training-Completion

To be eligible for the final specialty examinations, each trainee is required to obtain "Certification of Training-Completion." Based on the training bylaws and executive policy (please refer to www.scfhs.org), trainees will be granted "Certification of Training-Completion" once the following criteria is fulfilled:

a) Successful completion of all training rotations.

b) Completion of training requirements (e.g., logbook, research, and others) as outlined, which is approved by the scientific committee of specialty.

c) Clearance from SCFHS training affairs ensures compliance with tuition payments and the completion of universal topics.

"Certification of Training-Completion" will be issued and approved by the supervisory committee or its equivalent according to SCFHS policies.

Candidates passing all components of the final specialty examination will be awarded AEGD diploma.

3.6 Promotion Decision Mechanism

Residents are evaluated according to the following criteria:

<50%	50%–59.4%	60%–69.4%	≥70%
Clear Fail	Borderline fail	Borderline pass	Clear pass

- In order to be promoted, residents should obtain a "Borderline pass" in all criteria.
- Residents will not be promoted if he/she receives a "Clear Fail" in any of the criteria
- However, in exceptional cases, the training program director can recommend the resident's promotion under the following conditions:
  - If the resident receives "Borderline Fail" in 1 criterion he/she should compensate it by getting a "Clear Pass" in another criterion in order to be considered for promotion to the next level. The resident will only be prom oted after obtaining the required approval according to the executive policy of continuous assessment and annual promotion (available online).

3.7 Examination Methods used to Assess Performance of the Residents

Multiple assessment methods are used to capture all or most aspects of the required competencies. Context-based MCQ, extended matching items, and

short answer questions are implemented for knowledge, concepts, and application of knowledge. For "Shows How," SOE and DOPS are used. Alternatively, clinical work sampling and a portfolio or logbook are used.

Table. Description of rationale and checklist items applied in formative assessment:

Tool of assessment	Rationale	Check list items
Structured Oral Exam	To assess the theoretical knowledge base	For the SOE
Direct observation of procedural skills	DOPS is a structured rating scale for assessing and providing feedback on practical procedures	1. Demonstrates understanding of indications, relevant anatomy, and technique of procedure 2. Obtains informed consent 3. Demonstrates appropriate preparation pre-procedure 4. Demonstrates situational awareness 5. Aseptic technique 6. Technical ability 7. Seeks help where appropriate 8. Post-procedure management 9. Communication skills 10. Consideration of patient 11. Overall ability to perform procedure
One45 Evaluation	The One45 evaluation assesses general aspects of competence, including communication skills, clinical abilities, medical and dental knowledge, technical skills, and teaching abilities.	1. Caring behavior 2. Effective questioning and listening 3. Effective counseling 4. Demonstrates ethical behavior 5. Communicates well with staff 6. Works effectively as team member and leader 7. Works to improve system of care 8. Participates in therapies and patient education 9. Advocates for quality 10. Committed to self-assessment and uses feedback 11. Teaches effectively

Tool of assessment	Rationale	Check list items
Portfolios and Logbooks	Portfolios/Logbooks should contain evidence of how trainees fulfill tasks and how their competence is progressing. Portfolios may be digital or paper-based, reporting on work done, feedback received, progress made, and plans for improving competence.	Should be completed for each rotation throughout the program.
ITER	Direct observation	Prepared by program director every three months

XII PROGRAM AND COURSES EVALUATION

SCFHS applies variable measures to evaluate the implementation of this curriculum. The training outcomes of this program will undergo the quality assurance framework endorsed by the Central Training Committee at the SCFHS. Trainees' assessment (both formative and summative) results will be analyzed and mapped to curriculum content. Other indicators that will be incorporated are as follows.

- Report of the annual trainees' satisfaction survey.
- Reports from trainees' evaluation of faculty members.
- Reports from trainees' evaluation of rotations.
- Reports from the annual survey of program directors.
- Data available from program accreditations.
- Reports from direct field communications with trainees and trainers.

Goal-based Evaluation: The intended achievement of milestones will be evaluated at the end of each stage to assess the progress of the curriculum delivery, and any deficiency will be addressed in the following stage utilizing the time devoted to trainee-selected topics and professional sessions.

In addition to subject-matter opinion and best practices from benchmarked international programs, SCFHS will apply a robust method to ensure that this curriculum will utilize all the data that will be available during the revision of this curriculum in the future.

XIII POLICIES AND PROCEDURES

This curriculum represents the means and materials that outline the learning objectives with which trainees and trainers will interact to achieve the identified educational outcomes. The Saudi Commission for Health Specialties (SCFHS) has a full set of "General Bylaws" and "Executive Policies" (published on the official SCFHS website) that regulate all training-related processes. The general bylaws of training, assessment, and accreditation, as well as executive policies on admission, registration, continuous assessment and promotion, examination, trainees' representation and support, duty hours, and leaves are examples of regulations that need to be implemented. Under this curriculum, trainees, trainers, and supervisors must comply with the most updated bylaws and policies, which can be accessed online (via the official SCFHS website).

GENERAL TRAINING REQUIREMENTS:

- Admission into the program is in accordance with the commission training rules and regulations.
- Trainees shall abide by the training regulations and obligations established by the SCFHS and the training center.
- Training is a full-time commitment. Residents shall be enrolled in full-time, continuous education for the entire duration of the program.
- Training will be conducted in institutions accredited by the SCHS.
- Training shall be comprehensive and should fulfill promotion requirements and comprehensive patient management.
- Trainees shall be actively involved in patient care with gradual progression of responsibility.

XIV APPENDICES

A. Top Conditions and procedures in the Specialty
B. Academic half day topics and Description of each course
C. Universal Topics Modules
D. Structure Oral Exam (SOE) Description
E. Miller's Pyramid of Assessment
F. Glossary

Appendix-A

Top Conditions and procedures in the Specialty

Top ten conditions in the specialty
1- Dental caries
2- Reversible pulpits and irreversible pulpitis
3- Medically compromised patients
4- Apical abscess
5- Missing teeth
6- Tooth discoloration
7- Tooth sensitivity
8- Tooth fracture
9- Restoration failure
10-Malalignment of occlusion

Top ten causes of a visit to accident and emergency
1- Dental pain
2- Dental trauma
3- Intra-oral swelling
4- Extra-oral swelling
5- Porcelain fracture or chipping
6- Lost, unstable, fallen crown
7- Loss of healing abutment/fixture of implant
8- A fallen restoration
9- Postoperative sensitivity
10-Tooth mobility

Top ten procedures performed:
1- Preventive treatment (OHI and fluoride application)
2- Amalgam restoration
3- Composite restoration
4- Root canal treatment
5- Removable prosthesis
6- Prostatic crown
7- Post and core
8- Bleaching
9- Extraction
10-Dental implants

Common complications or malpractice
1- Root canal perforation 2- File separation in the canal 3- Open margin 4- Flare-up 5- Overhang 6- Spacing between crowns 7- Root fracture during extraction 8- Broken restoration 9- Tooth discoloration (due to intrinsic and extrinsic factors) 10-Occlusal interference

Appendix-B

Academic Half Day Topics

No	Courses	Topics
1	• Examination and diagnosis History-taking Clinical examination Radiographic interpretation Development of treatment strategies and plans Writing referral and consultation letters	• List the steps and skills needed to conduct a patient interview and for medical and dental history-taking. • Obtain and interpret a patient's chief complaint, history of present illness, medical, dental, family and cultural background, social histories, and review of systems. • Explain factors in the dental, medical, and social history likely to be relevant to the presenting condition and its previous management.

No	Courses	Topics
	Obtain informed consent	• Describe the relevant biology, anatomy, and physiology of normal and abnormal intra-oral and extra-oral structures and tissues. • List the steps for examination of the patient such as: oral mucosa and related structures periodontium dental hard tissues and make the appropriate diagnoses. • Discuss the systemic factors likely to have a bearing on the above. • Identify all types of dental and medical tests and investigations needed for the diagnosis. • Consolidate all data from the history, symptoms, examination, and tests to form a final diagnosis. • Obtain and interpret appropriate laboratory and radiographic data and obtain additional diagnostic information through consultation with other health care providers. • Explain the phases and sequences of writing a treatment strategy in conjunction with the patient and producing a plan according to their needs and preferences, including any future need for revision or modification. • Explain the importance and procedure involved in using evidence-based dentistry concepts while creating a treatment plan. • Identify emergency conditions that require immediate treatment. • Recognize components of a consultation and referral letter.

No	Courses	Topics
		• Explain and discuss with patients, parents or guardians of patients, who lack decisional capacity, findings, diagnoses, treatment options, realistic treatment expectations, patient responsibilities, time requirements, sequence of treatment, in order to establish therapeutic alliance between the patient and/or parent or guardian and care provider
2	• Management of medically compromised patients	Treat patients with a broad variety of acute and chronic systemic disorders.
3	• Management of dental emergencies and traumatic injuries	• Anticipate, diagnose, and provide initial treatment and follow-up management for medical emergencies that may occur during dental treatment. • Diagnose and manage dental emergencies • Provide initial treatment and then manage patients with extra and complex orofacial emergencies and infections. • Perform initial treatment and management of extra-oral facial trauma. • Treat intraoral hard and soft tissue lesions of traumatic origin. • Manage intraoral soft tissue lesions of non-traumatic origin.
4	• Oral Surgery and Hospital Protocol	• Perform surgical and nonsurgical extraction of erupted teeth. • Perform biopsies of oral tissues. • Provide dental treatment in an operating room.

No	Courses		Topics
			• Provide comprehensive management and care for individual inpatients or same day surgery patients from the beginning to the end of a patient's hospital experience. • Respond to consultation requests. • Identify needs and make referrals to appropriate health care providers for the treatment of physiological, psychological, and social problems presented by dental patients. • Perform dental consultations and request medical consultations for hospitalized patients and patients in other health care settings.
5	• Dental Photography		• Learn basic principles of dental photography • Recognize basic equipment needed for dental photography • Perform different techniques of dental photography • Perform basics of dental photograph editing for presentations
6	endodontic	• Introduction to endodontics, diagnosis, and treatment planning • Diagnostic tools and techniques used in endodontics • Pulp anatomy	• Explain the scope of endodontics in dentistry. • Classify pulpal and periapical pathosis. • Organize diagnostic steps in a sequential manner. • Describe the tools and techniques used in diagnosis. • Identify factors that will affect the treatment plan. • Describe the anatomic regions of pulp.

No		Courses	Topics
		• Access opening	• Describe common shapes of roots in cross-section and common canal configurations in these roots. • Explain the process of access opening.
7	endodontic	• Biological and mechanical objectives of cleaning and shaping • Endodontic instruments • Isolation • Working length determination • instrumentation (hands and rotary)	• Describe the objectives of both cleaning and shaping. • Describe the design (longitudinal, cross-sectional, and tip configuration) of the common canal preparation instruments and their mode of use. • Explain the differences between stainless steel and NiTi instruments. • Explain the basis for sizing and taper (standardization) of hand-operated instruments. • Describe the correct use of instruments to prevent breakage within the canal. • Describe the action and use of engine-driven (Gates Glidden drills and Peeso reamers) and rotary instruments. • Differentiate between hand and rotary techniques (including advantages and disadvantages) • Describe the importance of rubber dam isolation during endodontic procedures. • Describe the apical anatomy. • List the methods for measuring working length.

No		Courses	Topics
			• Explain how to determine the appropriate size of the master apical file. • Describe the techniques used for standardized and flaring preparations. • State the properties of the "ideal" root canal irrigants. • Describe the needles and techniques that provide the maximal irrigant effect. • Discuss the main types, properties, and role of intraconal and interappointment medicaments.
8	endodontic	• Obturation • Coronal seals	• Analyze the importance of both apical and coronal seals. • List the criteria for the ideal obturating material. • Differentiate between lateral and vertical compaction. • Describe the lateral and vertical compaction technique. • List the other techniques used for obturation. • Describe the steps and tests for master cone fitting. • List the criteria for the ideal sealer. • List the most common sealers used. • Explain the importance and technique for removing excess sealer and obturating material from the pulp chamber. • Name the most common core materials and their advantages and disadvantages. • Outline the postoperative risks to the unrestored tooth.

No	Courses		Topics
			• Discuss the clinical and radiographic criteria for evaluating the quality of obturation. • Describe signs of successful and unsuccessful RCT.
9	endodontic	• Restoration of endodontically treated teeth • Types of posts and cores	• Recognize the restorative options following RCT. • State the factors influencing the choice of technique used in restoring endodontically treated teeth. • Discuss the types of core material. • Lists the steps and instruments used in preparation of a post space. • Describe the common mistakes during preparation of a post space. • Know the types of cement used with a post. • Explain the method used to mix dental cement.
10	prosthodontics	• Introduction to FPD • Diagnostic casts	• Recognize the scope and importance of fixed prosthodontic treatment. • Discuss prosthodontics principles and treatment methods from a scientific standpoint, i.e. clinical evidence-based, in vivo and in vitro studies. • State the areas of treatment in prosthodontics • List all types of materials used in laboratory work. • Discuss the importance and uses of diagnostic casts. • Explain the laboratory procedures for construction of a cast.

No		Courses	Topics
11	prosthodontics	• Principles of occlusion • Occlusal analysis • Diagnostic wax-up	• Explain the main principles of occlusion. • Discuss the importance of and procedure used in occlusal analysis. • Discuss importance and uses of diagnostic wax-up. • Discuss the purpose of using a face-bow. • Classify the articulators used in dentistry. Name the parts of the articulators. • Describe the procedure for mounting diagnostic casts.
12	Prosthodontics	• Basic principles of treatment planning for teeth • Restorations and replacement • Principles of tooth preparation • Provisional restorations	• Acquire basic concepts for diagnosis and treatment planning to restore and replace teeth and short edentulous spans. • Discuss the main principles of crown and bridge preparation. • List the types of provisional restoration. • Describe the techniques for constructing provisional restorations.
13	Prosthodontics	• Restoration of endodontically treated teeth • Types of posts and cores	• Recognize the restorative options following RCT. • State the factors influencing the choice of technique used in restoring endodontically treated teeth. • Discuss the types of core material. • Lists the steps and instruments used in preparation of a post space.

No	Courses		Topics
			• Describe the common mistakes during preparation of a post space. • Know the types of cement used with a post. • Explain the method used to mix dental cement.
14	Prosthodontics	• Tissue management • Final impression making • Interocclusal record • Working cast and die • Die preparation	• Discuss indications for tissue management. • Describe the different methods of gingival tissue displacement and hemostasis. • Discuss the requirements of an ideal final impression. • List types of impression material used. • Explain the principles and techniques used for making an impression. • State the types of bite registration material. • Describe the methods used for bite registration. • Discuss the requirements of an ideal working cast. • Describe the different materials and techniques used for a die system and die trimming.

No		Courses	Topics
15	prosthodontics	• Dental laboratory procedure. • Dental alloy • Dental porcelain • Framework designs for metal ceramic restoration • Metal-ceramic restorations • All-ceramic restorations • Metal and porcelain try-in • Characterization and glazing • cementation	• Explain the steps of wax pattern fabrication. • Explain the laboratory procedures for construction of cast restorations. • Identify all types of dental laboratory materials. • Describe the different types of ceramics used. • Describe the different types of metal alloy used in a porcelain-fused-to-metal prosthesis. • Recognize the importance and procedure of framework designs for metal ceramic restoration. • State the laboratory steps for fabricating metal-ceramic restorations. • State the laboratory steps for fabricating all-ceramic restorations. • Explain the steps of clinical try-in for crowns. • State the advantages, disadvantages, and steps of stain application. • List the types of luting agents used for cementation. • Explain the correct technique for cementation.
16	prosthodontics	• Removable prosthodontics	• Introduce the clinical and theoretical aspects of removable prosthodontics which involves the examination, diagnosis, treatment planning, construction of the removable prostheses, and maintenance of the hard and soft tissues. • Concepts involved in the design and production of complete and partial dentures • Health and safety in the clinic's communication with the dental laboratory

No		Courses	Topics
17	Cariology	• Dynamics of dental caries • Diagnosis of caries • Caries risk assessment and the CAMBRA system, Part 1 • Caries risk assessment and the CAMBRA system, Part 2	• Explain the dynamics of caries. • Discuss the concept of balance and imbalance with regard to dental caries. • Explain the factors affecting the dental caries process. • Introduce the concepts of critical pH, saturation, demineralization, and remineralization. • Justify the appearance of incipient lesions. • Demonstrate the optimum method for diagnosis of caries. • Describe the different clinical presentations of caries. • Explain the principles of the International Caries Detection and Assessment System. • Revise the concepts of sensitivity and specificity. • Explain the role of oral bacteria and biofilm in dental caries. • Explain the effect of fluoride and formation of fluorapatite. • Explain the role of diet in development of caries. • Explain the role of saliva in dental caries. • Summarize the different salivary tests available. • Contrast the different models used to estimate the risk of caries, e.g., CAMBRA. • Explain the principles of CAMBRA. • Develop preventive and management strategies based on the risk of caries.

No		Courses	Topics
18	Restorative	• Introduction to operative and esthetic dentistry • Factors affecting operative treatment plan • Amalgam, composite, and glass ionomer restorations • Instruments used in operative practice • Dental adhesives	• Recognize the importance and scope of operative restorative dentistry. • State the main factors that can affect the choice of material and technique to be used. • List the types, advantages, indications, and contraindications of amalgam, composite and glass ionomer restorations. • Explain the basic principles of amalgam and composite preparations and restorations. • Describe the process of polymerization for composites and methods to reduce polymerization shrinkage and stress. • Describe the technique of matrix application, incremental placement, and finishing and polishing for composite resins. • Recognize the types of adhesive systems.
19	Restorative	• Main principles in esthetic, colors, and shade selection • Conservative treatments for discolored teeth • Inlays and onlays • Smile analysis • Esthetic veneers	• Define esthetics and recognize the basic artistic elements that need to be considered to ensure optimal esthetic results. • Smile analysis • State the scientific basis of color. • Explain the steps in the color replication process (shade selection and duplication). • Explain the methods used in the main shade guide systems. • Recognize the different types and causes of tooth discoloration.

No		Courses	Topics
			• Describe the strategies applied in the management of discolored teeth (bleaching, microabrasion, and macroabrasion). • Describe the techniques, indications, and contraindications for restoration of ceramic inlays and onlays. • Describe the types, techniques, indications, and contraindications for preparation and restoration of esthetic veneers, both direct and indirect. • Describe the techniques used for fabrication of provisional restorations.
20	Digital Dentistry	• Digital dentistry	• To pursue advance didactic education and clinical experience in the field of digital and CAD/CAM technology for comprehensive dental treatment • To practice diagnostic and treatment planning techniques to provide comprehensive clinical treatment. • To give didactic, laboratory, and comprehensive patient care experience in application of computerized treatment techniques
21	Periodontics	• Periodontal consideration • Basic concepts in Periodontics • Components of gingiva	• Recognize the basic concepts used in periodontics. • List the parts of the gingiva. • Differentiate between normal and diseased gingiva. • Identify the main classification of periodontal diseases.

No		Courses	Topics
		• Periodontal disease classification • Periodontal examination • Periodontic indices • Biological width • Introduction to management • Introduction to periodontal surgery	• List the steps of clinical examination and assessment methods to arrive at a periodontal diagnosis (probing depth, bleeding index, clinical attachment level, radiographic evidence of bone loss, and the presence or absence of signs and symptoms in the patient). • Diagnose periodontal disease using the periodontal examination and radiographs. • Performing phase I therapy (scaling and root planning) • Recognize and manage periodontal emergencies and complications of periodontal treatment. • Evaluate the results of periodontal treatment and establish and monitor a periodontal maintenance program. • Explain the meaning and importance of biological width. • Name the main periodontal treatment modalities used. • Identify the different periodontal surgical therapies and their indications. • Discuss the healing period after surgical crown lengthening.
22	Pediatric	• Pediatric Dentistry	• Introduction to Pediatric Dentistry • Dental radiology for the child patient • Pain control in Pediatric Dentistry • Development of the child patient from the psychological management perspective

No	Courses	Topics
		• Non-pharmacological behavior management for the child patient in the dental environment • Preventive care in pediatric dentistry • Fluoride therapy in the management of the dental caries in children and adolescent • Basic principles and advances in cariology • Caries in children • Restorations of primary and young permanent teeth (new trends) • Pulp therapy for primary and young permanent teeth • Gingival and periodontal diseases and conditions in children • Diagnosis and management of traumatic injuries of the oral and perioral structures including primary and permanent dentition and in infants, children, and adolescents. • Treatment of conditions that can be corrected or significantly improved by evidence-based early interventions which might require guidance of eruption, space supervision, and interceptive orthodontic treatments.
23	• Temporomandibular Dysfunction and Occlusion.	• Diagnose and manage a patient's occlusion. • Treat minor occlusal abnormalities • Diagnose and non-surgically treat uncomplicated temporomandibular disorders.
24	• Practice management	• Function as a patient's primary oral health care provider.

No	Courses	Topics
		• Treat patients efficiently in a dental practice setting • Use and implement accepted sterilization, disinfection, universal precautions, and occupational hazard prevention procedures in the practice of dentistry. • Practice and promote the principles of jurisprudence and ethics in the practice of dentistry and in relationships with patients, personnel, and colleagues. • Provide patient care by working effectively with allied dental personnel including performing sit down, fourhanded dentistry.
25	• Dental public health	• Use accepted prevention strategies such as oral hygiene instruction, nutritional education, and pharmacologic intervention to help patients maintain and improve their oral and systemic health. • To apply preventive program or public education for selected community (e.g. school children)
26	• Orthodontic	• To understand the concept of growth and development ❖ Methods of studying growth ❖ Theories of growth ❖ Clinical application of growth and development in orthodontics • Space Analysis for permanent and mixed dentition

No	Courses	Topics
		• Properly diagnose orthodontic dental malocclusions and skeletal discrepancies • Recognize potential complications and the need to refer to an orthodontic specialist when appropriate • Adjunctive orthodontic treatment (e.g. up righting, extrusion. etc)
27	• Dental implants	• Introduction to dental implants • Describe the history and types of implants. • Identify implant terminology. • Explain the process for reaching an appropriate treatment plan. • The importance of soft and hard tissue • Describe the components of the implant. • Describe the steps for the surgical component of the implant. • Recognize the healing period for the surgical component. • Identify the prosthetic components of the implant. • Describe the different techniques for taking an impression. • State the types of crown (cemented and screwed types), along with their indications, and contraindications. • Implant maintenance

No	Courses	Topics
28	• Soft Skill	This module clarifies the importance of soft skills for resident. It provides and trains residents in the essential knowledge and skills needed to develop and acquire the necessary soft skills. Usually, the importance of these soft skills is often undervalued and people do not receive adequate soft skills training. The teaching of soft skills is a challenge. It will depend on the following; 1. Raise awareness of its importance. 2. Conduct self-evaluation. 3. Apply the methods into the hard skills training. 4. Role model –preceptors and faculty (observing and mimicking exceptional professionals). 5. Communication - describe how to communicate with patients, supervisors, and co-workers. 6. Punctuality - Identify the importance of punctuality and its effect on residents' career. 7. Time management. - Manage the time in clinics with high quality standards. 8. Professionalism. - Acquire the traits of highly professional dentist which consist of • Altruism • Honor and integrity • Respect • Responsibility • Accountability • Excellence and scholarship 9. Leadership. - Obtain the characteristics of leaders.

No	Courses	Topics
		10. Problem solving. - Define the problem, generate alternatives, evaluate and select alternatives, then implement the solutions. 11. Motivation. - Learn to be self-motivated and able to positively motivate others. 12. Self-development. -Develop the hard and soft skills as a lifelong process. With Self-directed and Self-regulated learning. 13. Team worker. - Be a good team player, who is cooperative and respectful. Treat all team members fairly and in line with the law. 14. Clinical reasoning. - Think through the various aspects of patient care to arrive at a reasonable decision. 15. Self-confidence. - Achieve high self-confidence by: • Doing what they believe to be right. • Admitting their mistakes, and learning from them. • Able to convince the patients. 16. Dealing with criticism. - describe how to use criticism in a positive way to improve their skills. 17. Flexibility and Adaptability. - Adapt to changing environments and be highly flexible to any changes in work process.

Courses Description:

Course Title:	Course Level: (Semester and year)
DENTAL PHOTOGRAPHY	First year

Course Description:

This course teaches the skills and knowledge required to take professional dental photographs with consistent quality. It is composed of three parts:

1. Lectures covering the basic knowledge of digital photography in general and different techniques of digital dental photography.
2. Hands-on instruction on digital photography: residents are assisted in setting up their own individual cameras and taking their first intra-oral and extra-oral photographs on each other.
3. Digital dental photography on patients where residents take full sets of photographs on their patients with minimal assistance.

Course Objectives

1> Learn basic principles of dental photography

2> Recognize basic equipment needed for dental photography

3> Learn different techniques of dental photography

4> Learn the basics of dental photograph editing for presentations

Textbooks and References:

Mastering Digital Dental Photography by Wolfgang Bengel

Digital and Conventional Dental Photography: A Practical Clinical Manual by Irfan Ahmad

Course Title:	Course Level: (Semester and year)
MEDICAL DENTISTRY	First Year

Course Description:

This course is designed to provide the residents with the knowledge and skill to provide safe and effective care for the medically compromised dental patients. It will also provide a study of the various medical emergencies that can occur on a dental setting and their management. Moreover, this course will allow the residents to apply, clinically, the concepts of basic science especially those related to physiology, pathology, immunology, and oral biology. Will also allow the clinical application of diet analysis, dietary advice, and behavior modification as related to our field. Thus, the residents will have the opportunity to undertake a wide variety of clinical experiences that will prove beneficial to their overall training.

Course Objectives

- Recognize the importance of a complete physical examination, psychological assessment, and medical history for the dental patient.
- Assess the medical risk of dental procedures for healthy and medically compromised patients.
- Successfully manage the medically-compromised dental patient.
- Properly diagnose and manage the more commonly encountered medical emergencies that can occur in the dental office.
- List the appropriate rationale for selecting an antibiotic agent.
- List the most common oral lesions, premalignant, and malignant lesions.
- Develop a team approach in patient management through the use of auxiliaries and experiences with hospital administration.

Textbooks and References:

- Dental management of the medically compromised patient. By James W. Little, Donald A. Falace, Craig S. Miller, Nelson L. Rhodus
- Medical emergencies in the dental office. By Stanley F. Malamed
- Handouts given by lecturers
- Presentations prepared by the residents

I COURSE PHILOSOPHY

The philosophy of this course is to integrate medical science knowledge with dental knowledge, and to teach residents the intimate relationship that exists between general health and oral and dental health with specific emphasis on oral and dental manifestations of systemic diseases. Therefore, this course is designed to equip residents with the knowledge and skills to provide safer and more effective patient care, and to clinically apply the concepts of basic science in areas related to physiology, pathology, immunology, and oral biology. The course also includes a study of the various medical emergencies and their management that can occur in a dental setting, together with the clinical application of diet analysis, dietary advice, and behavior modification related to the dental profession to improve oral health.

II COURSE TOPICS

1. Human Behavior
2. Nutrition counseling as it relates to oral health
3. Smoking – Its effect on general and oral health
4. Bone Histology and Physiology
5. Bone Repair and Healing
6. Bone Metabolism
7. Inflammation
8. Immunology
9. The Immune System
10. Systemic conditions and dental disease: Is there a connection?
11. (Dr. Sultan Al Mobarak).
12. Oral manifestations of systemic diseases
13. Medical history and physical evaluation
14. Medicine relevant to dentistry
15. Medical emergencies in the dental clinic
16. The Dental Pulp
17. Therapeutics
18. Medical risk assessment (ASA classification)

III COURSE GOALS AND LEARNING OBJECTIVES

1. HUMAN BEHAVIOR

1.1 Recognize common psychological and behavioral signs indicating that the patient is anxious, fearful, or phobic

1.2 Assess patient's perceptions of dentistry

1.3 Identify the environmental characteristics that may worsen anxiety in the fearful patient

1.4 State etiology of fear

1.5 Outline research findings regarding the most fearful aspects of dental treatment

1.6 Combine the pharmacologic and non-pharmacologic techniques to control patient anxiety

1.7 List the points of compliance and non-compliance of dental patients

1.8 List factors that cause stress in the dentist, and methods of stress reduction

1.9 communication skills: patient's rapport and interview:

1.9.1. Observe patient closely for unusual signs in grooming, breathing, body odor etc

1.9.2. Recognize non-verbal communication behaviors

1.9.3. Demonstrate active listening behaviors including questioning, rephrasing, clarification, and empathy

1.9.4. Identify the basic components of the patient interview

2 NUTRITION COUNSELING AS IT RELATES TO ORAL HEALTH AND BEHAVIOR MODIFICATION:

2.1 Define nutrient and nutrition and list nutritional requirements

2.2 Define oral disease, list lifestyle and positive factors

2.3 Define calories and list daily calorie requirement for an average person

2.4 Refer to recommended dietary allowance (RDA) in USA

2.5 Explain the Mypyramid food guide

2.6 Analyze diet and list the ABCDs of nutrition assessment

2.7 Refer to the NutriGenie Pyramid Analysis for imbalanced diet

2.8 Describe the “mother of all diets”

2.9 Define malnutrition - refer to cited literature

2.10 Define Pathophysiology

2.11 List clinical signs and symptoms of PEM

2.12 List dietary assessment for patient

2.13 List causes of nutritional deficiencies

2.14 List effects of nutrient deficiencies on tooth development

2.15 List systemic diseases associated with oral manifestations and nutrient deficiencies

2.16 List nutrition, saliva, oral health, and influences

2.17 List diet and dental health and describe how diet and nutrition have a direct influence on dental caries

2.18 List nutrition as a mediator in the relationship between oral and systemic health

2.19 Refer to cited studies on the effects of tooth loss on diet

2.20 Refer to cited studies on the effects of the use of prostheses on nutritional status

2.21 Counsel on diet and follow the Dietary Guidelines for Americans

2.22 List benefits of fluoridation, its sources and risks

2.23 List effects of vitamin deficiency

2.24 List dietary supplementation and its potential risks

2.25 Refer to the Fluoride Supplementation by the American Academy of Pediatrics (AAP)

2.26 Define obesity and being overweight, list BMI categories and describe corrective measures

2.27 List oral manifestations and changes in the tongue

2.28 List effects of nutrient deficiencies on tooth development

2.29 List systemic diseases associated with oral manifestations and nutrient deficiencies

2.30 Recognize the clinical signs of good nutritional status and provide counsel on diet education

3. SMOKING – ITS EFFECT ON GENERAL AND DENTAL HEALTH:

3.1 Assess harmful constituents of cigarette smoke
3.2 Assess effects on the immune system
3.3 Assess effects on the cardiovascular system
3.4 Assess effects on the respiratory system
3.5 State how smoking can cause cancer
3.6 Assess smoking behavior modification

4. BONE HISTOLOGY AND PHYSIOLOGY

4.1 Define bone, types, and functions
4.2 List bone marrow and cells
4.3 List osteoblasts and their origin,
4.4 List osteocytes and functions
4.5 List bone lining cells
4.6 Define osteogenesis and types
4.7 List bone physiology and appositional bone growth
4.8 List bone maintenance and stages of bone remodeling
4.9 State the nature of bone mineral and matrix
4.10 State bone biomechanics and mineralization
4.11 List the stages of bone growth
4.12 State the factors affecting bone healing and the remodeling process
4.13 Describe pathological bone resorption
4.14 Describe bone calcium homeostasis
4.15 Describe the dynamics of bone adaptation

5. BONE REPAIR AND HEALING

5.1 List series of mechanisms and components of repair
5.2 Define hematoma inflammation
5.3 Describe the remodeling process in the cortical bone and cancellous bone
5.4 List cutting cones
5.5 List systemic and local factors affecting bone healing

5.6 Refer to cited updates

5.7 List clinical implications in dentistry

5.8 List bone quantity, quality, and types

5.9 List ways in which a bone graft can help repair a defect

6. BONE METABOLISM

6.1 List mineral homeostasis

6.2 Describe bone minerals and how they are present in two forms in the skeleton

6.3 List mineral homeostasis

6.4 List parathyroid hormone

6.5 List vitamin D

6.6 List the hormones that are necessary for normal bone growth

6.7 Describe osteoporosis, list locally produced factors medications and therapies

7. INFLAMMATION

7.1 Define inflammation

7.2 List the damage and benefits of inflammatory reactions

7.3 List types of inflammation

7.4 State etiology of inflammation

7.5 Describe acute inflammation, types, and sequence of events

7.6 List the cardinal signs of acute inflammation

7.7 Identify chemotaxis

7.8 List pathogenesis of acute inflammation

7.9 State the role of chemical mediators

7.10 List clinical features of acute inflammation and systemic features

7.11 List exudates of acute inflammation

7.12 List lesions of acute inflammation

7.13 Define abscesses

7.14 List microscopic features of acute inflammation and the outcome

7.15 List signs and symptoms of chronic inflammation

7.16 State etiology and pathogenesis

7.17 List clinical features of chronic inflammation and complications

7.18 List sub-acute inflammation

7.19 List major cellular mediators of inflammation

7.20 Define regeneration and healing and list types of cells

7.21 List sequence of events

7.22 Describe the management of wounds and list steps

7.23 List clinical factors affecting repair and aberrations of wound healing

8. IMMUNOLOGY

8.1 Define antigen

8.2 Define pathogen

8.3 Describe the immune system and how it eliminates pathogens

8.4 List innate immunity, host defenses, and mechanical, biological and chemical factors

8.5 List inflammatory and cellular components

8.6 List adaptive (acquired) immunity, responses and tissues of the immune system

8.7 List comparison of innate and adaptive immunity

8.8 List cells and development of the immune system

8.9 List complement system, functions, and definitions

8.10 List pathways of complement activation

8.11 List components of mannose-binding lectin pathway

8.12 List lytic pathway

9. THE IMMUNE SYSTEM

9.1 Define immunoglobins and list properties, general functions, and basic structure

9.2 Define antigen processing and antibody production

9.3 Define oral immunology and its immunity and periodontics

9.4 List immune disorders and reactions

9.5 List hypersensitivity reactions, types, and clinical examples

10. SYSTEMIC CONDITIONS AND DENTAL DISEASE – IS THERE A CONNECTION?

10.1 Describe the oral cavity and how dental bacteria accumulates

10.2 Define gingivitis and list inflammatory responses and its common and rare causes

10.3 Describe HIV, infections, new findings, environmental and genetic influences on periodontal infection

10.4 Assess the effects of smoking on periodontal disease, and list influences, factors, and new findings.

10.5 Define osteoporosis and list new findings on medications and medications associated with gingival overgrowth

10.6 List effective measures for plaque control

10.7 List medications associated with gingival overgrowth

10.8 Define genes

10.9 Refer to cited literature on influence of obesity and hypertension on the severity of periodontitis in rats and state the results

10.10 List oral inflammation associated with pregnancy and diabetes

10.11 List systemic conditions, associations, behavioral influences, medications, and effects on periodontal infection

10.12 List factors that place patient at high risk

10.13 Refer to cited literature on frequency and distribution of periodontal pathogens in the atheroma of coronary arteries

10.14 List objectives

10.15 List summary results and conclusions

10.16 List infections that produce changes in lipid metabolism which may favor atherosclerosis

10.17 List new findings, other findings, and list risk modification practices

10.18 Identify strong risk factors and indicators

10.19 List background risk characteristics

10.20 Define periodontal medicine and list risk assessment and risk factor categorization

11. ORAL MANIFESTATIONS OF SYSTEMIC DISEASES

11.1 List systemic diseases with oral manifestations
11.2 List manifestations, clinical presentations, and drug reactions
11.3 List diagnosis and treatment
11.4 Define leukoplakia, erythroplakia, and speckled leukoplakia
11.5 State etiology, site staging, histopathology, and management of oral cancer
11.6 List gene therapy for prevention of oral cancer

12. MEDICAL HISTORY AND PHYSICAL EVALUATION

12.1 List procedures for medically compromised patients
12.2 List direct referrals
12.3 List medical history
12.4 Design a medical questionnaire
12.5 Conduct a dialogue history
12.6 List procedures for physical examination
12.7 List vital signs
12.8 List medical and laboratory tests
12.9 List complete blood count
12.10 Take liver function tests
12.11 Take a blood culture
12.12 Do radiology tests
12.13 Define biopsies
12.14 Assess determination of medical risk
12.15 List ASA physical status classification and list examples

13 MEDICINE RELEVANT TO DENTISTRY

13.1 State the pathophysiology, pharmacology, and dental management of cardiovascular diseases
13.2 Identify hematological malignancies and bleeding disorders
13.3 List the oral complications of chemotherapy and radiotherapy
13.4 List renal disorders and transplants
13.5 List endocrinology: diabetes and thyroid disorders

13.6 Assess the effects of hepatitis

14 MEDICAL EMERGENCIES IN THE DENTAL CLINIC

14.1 List the most common dental emergencies

15 THERAPEUTICS

15.1 List the appropriate rationale for selecting an antibiotic agent

16 MEDICAL RISK ASSESSMENT (ASA CLASSIFICATION)

16.1 State the Medical Risk assessment (ASA classification)

Course Title:	Course Level:(Semester and year)
DENTAL BIOMATERIALS	First year

Course Description:

This course provides basic fundamental principle knowledge and is intended to bridge the gap between the obtained knowledge (material science, chemistry, physics, etc) and the dental operation. Almost every dental procedure requires the use of materials. It is clear that successful dentistry depends on the choice of material for a given application, and the ability to conduct manipulative procedure to gain the optimum properties of that material.

For better appreciation of the course, it is important to understand the fundamental principles of the science of biomaterials which provides a scientific foundation for clinical application, and manipulation of dental materials. This course covers the most widely used materials in current practice. This course is divided into:

1. Lectures: Will elaborate on several important points associated with the assigned reading. Some of the aspects will not be covered in the lectures as they are adequately covered in the assigned reading.
2. Literature Review: As part of the didactic component of this course, each resident will be assigned a topic and required to present a comprehensive (typewritten) paper to the course director. The resident should be familiar with the topic and must be ready to discuss it with the supervising faculty.

Course Objectives

- Provide the dental clinician with a basic understanding of the principles of material science.
- Present the basic properties of dental materials as they are related to clinical manipulation.
- Apply those principles to the selection, handling, and better understanding of the various materials currently used in dentistry.
- Enable the dental clinician to adapt the knowledge of the basic science and the behavior of existing materials to the new materials that are rapidly evolving.

Textbooks and References:

- Handouts,
- Required textbook (Phillips Science of Dental Materials tenth edition)

BIOMATERIALS COURSE LECTURE OBJECTIVES

QUALITY ASSURANCE STANDARD

- Describe the different forms of materials.

- Discuss the time-temperature curve, which represents the conversion of solid to liquid, and vice versa.
- List the ideal requirements for a dental material.
- ADA classification formulated for a particular material, based on this, list the processing steps required for a material from the manufacturing process until it has a seal of certification.
- Explain the ADA specification and acceptance programs and their importance to professionals and the public.

ESSENTIAL OF DENTAL MATERIALS

- Define the matter
- Describe the atomic structure
- List the types of interatomic bond
- List the three forms of existing material

DENTAL AMALGAM

- Define amalgam as a restorative material.
- List the metals and their concentrations present in the amalgam alloy.
- Classify the amalgam according to the particle shape.
- Classify the amalgam according to copper content.
- Discuss the differences between low -and high-copper alloys in terms of composition and structure. Properties and Clinical Performance
- Explain the setting mechanism for both low and high copper alloy using the chemical equation that depicts the reaction.
- Draw a schematic to illustrate the sequence of development of the amalgam microstructure.
- Discuss the equilibrium phase diagram of silver-tin system.

ADHESION AND BONDING AGENTS:

- List the requirements for the dental adhesive.
- Discussion on the difference between cohesion and adhesion.
- Describe the primary role of the dentin adhesive material.
- Discuss the viscosity, surface energy, contact angle, and wettability.

- Discuss the effects of viscosity, surface energy, contact angle, and wettability on the strength of the adhesion between the bonding agents and tooth structure.

GLASS IONOMER:

- Define glass ionomer
- Discuss the composition of glass ionomer powder and liquid
- Explain the role of Acid in glass ionomer
- Classify the glass ionomer according to its application
- Discuss the Physical Properties for each type of glass ionomer
- Explain the mechanism of adhesion of glass ionomer
- Discuss the role of water in the setting reaction of a glass ionomer
- Draw a schematic to illustrate the final setting reaction of a glass ionomer.

CAST METAL ALLOY:

- Define noble metal, alloy, and metallic bond.
- List metal properties and requirements.
- Classify metal casting alloy according to their gold contents.
- Classify metal casting according to ADA classification and explain use of each type.
- List the composition of casting gold alloy.
- Discuss the role of each ingredient in casting gold alloy.
- Discuss physical properties of modern noble metal alloy.

CAST METAL FRAMEWORK AND WROUGHT WIRE ALLOYS

- Define base metal and wrought wire alloys.
- Classify the base metal alloys and list the constituents of each one.
- Discuss the differences between noble metal and base metal alloys.
- Describe a metal-ceramic restoration.
- Discuss the various types of alloys used for metal-ceramic restorations and the requirements for such alloys.
- Discuss the physical properties of base metal and wrought wire alloys.
- Compare the properties of cobalt-chromium alloys with type 4 gold alloys for the partial denture framework.

- Classify the wrought wire alloy.
- Name some of the ways by which wrought wire metals are shaped.

DENTAL PORCELAIN:

- Define the dental ceramic material.
- Classify the dental ceramic according to their application.
- Classify the dental ceramic according to their firing temperature.
- Discuss the basic chemical components of dental porcelain.
- Explain the function of each component of dental porcelain.
- Describe the mechanical properties of dental porcelain.
- Classify the all-ceramic system.

DENTAL IMPLANT MATERIAL:

- Name and define the three categories of dental implants.
- List the most common metal and metal alloys used in dental implants.
- Discuss the mechanical properties of pure titanium.
- Explain why titanium alloy is commonly used for dental implant.
- Describe the materials used to coat the titanium alloy.

RESIN CEMENT AND LINER:

- Explain the meaning of luting cement.
- Discuss the general composition of resin cement.
- Define film thickness and give the ADA Specification limit for film thickness.
- Explain setting reaction (polymerization) of resin cement.

Course Title:	Course Level: (Semester and year)
ENDODONTICS A.1 BASIC ENDO.	First Year

Course Description:

To prepare students to conduct patient interview, identify patient problems, and perform necessary diagnostic examination and treatment for management of pulpal and periapical diseases.

Course Objectives

Course Title:	Course Level: (Semester and year)
ENDODONTICS A.1 BASIC ENDO.	First Year

1. Diagnose and treat patients with most common endodontic problems.
2. Demonstrate a biological knowledge of root canal therapy.
3. Collect and document patient history for proper diagnosis and treatment planning.
4. Perform diagnostic procedures for pulp, periapical, and periodontal tissue.
5. Accomplish complete intraoral examinations.
6. Determine type and degree of pulp disease.
7. Differentiate between endodontic pathology and non-endodontic pathology.
8. Identify difficult treatment cases.
9. Know when to refer to oral surgeons, periodontists, and other specialists.
10. Determine appropriate treatment sequence in multidisciplinary cases.
11. Provide emergency treatment and relief of acute pain.
12. Identify complications and be able to refer to the staff specialist.

Textbooks and References:

Pathway of the Pulp - Stephen Cohen 11 Ed.

Course Description/Philosophy

The course focuses on endodontic case selection, patient interviewing, patient problem identification, treatment planning, and treatment execution. The biological and scientific (evidence-based) basis for each of the above items is emphasized as per the following topics:

Course Topics

1. Endodontic preparation
2. Rubber dam tooth isolation
3. Endodontic access preparation
4. Root canal preparation principles
5. Endodontic measurements
6. Root canal irrigation
7. Automated endodontic instrumentation
8. Root canal filling: Materials and methods

9. Restoration of endodontically treated teeth
10. Prefabricated endodontic post technique
11. Endodontic emergency treatment principles
12. Endodontic case selection and treatment planning

Course Specific Objectives

1. Pre-Endodontic Preparation

1.1 Describe restorability of the tooth in an insufficient tooth structure.
1.2 List the pre-endodontic preparation methods for teeth with insufficient structure.
1.3 Describe the build-up preparation method.
1.4 List the disadvantages of traditional pre-endodontic build up methods.
1.5 State the rationales for traditional build-up method.
1.6 List the current concepts of traditional build-up method.
1.7 State the guidelines of rubber dam applications.
1.8 Discuss the removal of restoration in modern endodontics.
1.9 List the types of pre-endodontics buildup.
1.10 Identify the different elements of restorative index.
1.11 List the restoration evaluation guidelines.
1.12 List the criteria for pre-endodontic restoration removal.
1.13 List the criteria for mid-endodontic restoration removal.
1.14 Explain the different guiding principles of tooth restorations.
1.15 List the methods of restoration removal.
1.16 State the recommended technique of tooth restorations removal.

2. Rubber Dam Tooth Isolation

2.1 List the rationales for tooth isolation.
2.2 Describe the value of rubber dam in protecting the staff.
2.3 State the limitations of rubber dam use.
2.4 The rubber dam and malpositioned teeth.
2.5 State the history of tooth rubber dam isolation.

2.6 State the history of clamp selection for a particular tooth.

2.7 Apply the universal clamp method of endodontic rubber dam.

2.8 List the criteria of rubber dam placement.

2.9 List rubber dam armamentarium.

2.10 Determine the different types of rubber dam placement techniques.

2.11 Describe the restorative method of rubber dam application.

2.12 Describe the endodontics universal method.

2.13 Perform the steps in placing rubber dam.

2.14 State the other dam application methods.

2.15 Describe the errors in rubber dam application.

3. Endodotic Access Preparation

3.1 Define traditional access preparations.

3.2 Define access preparation according to research conclusions.

3.3 List the factors that influence endodontic access preparation.

3.4 Plan access approach according to radiograph analysis.

3.5 State the criteria of endodontic access.

3.6 Identify the clinical recommendations of access preparation.

3.7 State the clinical guidelines in access preparation.

3.8 Determine the elements of radiographic analysis.

3.9 Recognize the elements of coronal analysis.

3.10 Describe the crown and root relationship.

3.11 State the endodontic access on different clinical situations.

3.12 List the guidelines in accessing intact teeth.

3.13 Describe the need to reduce occlusal reduction.

3.14 List the steps in access on carious teeth.

3.15 State the guidelines on access on intracoronal restoration.

3.16 State the location of adult maxillary and mandibular canal orifice locations.

3.17 Recognize an overextended access.

3.18 State the access guidelines on extracoronal restorations.

3.19 List the problems when accessing full coverage restoration.

3.20 State the guidelines for access through full coverage restorations.

3.21 Perform endodontics access on porcelain fused to metal restoration.

3.22 Perform endodontics access on full coverage metal restorations.

3.23 State the procedural errors in endodontic access preparation.

3.24 State endodontic access preparation.

3.25 State other modifications of access preparation

3.26 Recognize the risks in endodontic access through existing intracoronal restoration.

3.27 State the guidelines of accessing teeth with calcified canals.

4. Root Canal Preparation Principles

4.1 List the past trends in root canal preparation.

4.2 Recognize endodontics instruments.

4.3 State the percentage of untouched prepared canal surface due to anatomic variation.

4.4 Describe the principles of curved canal preparation.

4.5 State how to determine curvature degree.

4.6 State the percentage of untouched curved canal by traditional approach.

4.7 Describe the size of instrument ledging curved canal.

4.8 Describe hourglass preparation.

4.9 State the incidence of ledge formation through canal curvature, tooth, and canal position.

4.10 State the results of using instrumentation techniques in curved canals.

4.11 Identify the results of lacking anatomic knowledge.

4.12 Describe the effect of zipping of canal.

4.13 Describe the effect of file movements on the foramen.

4.14 Avoid the creation of permanent ledge by pushing through the wedging point.

4.15 Identify the causes of stripping or perforation of the root.

4.16 State the surgical philosophy of endodontics preparation.

4.17 List root canal preparation methods.

4.18 Define flared canal preparation.

4.19 List the biological criteria of root canal preparation.

4.20 Apply the design criteria of preparation.

4.21 List the procedural criteria of preparation.

4.22 Describe the non-flared design preparation.

4.23 Define standardized canal preparation technique.

4.24 Define serial preparation.

4.25 Define step preparation.

4.26 List the advantages of flared design preparation.

4.27 List the biological and mechanical objectives of root canal treatment.

4.28 State the names of different canal preparation used in endodontics literature.

4.29 List the apical preparation errors.

4.30 Define the terms ledging, foramen transportation, and stripping and patency control.

4.31 Identify the specific danger and safety zones of the root canal.

4.32 Perform the anticurvature method.

4.33 Describe the access preparation of the anticurvature method.

4.34 List the radiographic and functional considerations of the anticurvative method.

4.35 State the rules of anticurvature.

4.36 Compare the relative risks of molar root perforations by using various endodontic instrumentation techniques.

4.37 State the purposes of Kessler article on anticurvature.

4.38 Compare techniques between anticurvature hand instrumentation and engine-driven techniques using round burs #4 and #2.

4.39 Compare the technique between step back and anticurvature filling as a result of reducing perforation risk in the curved canal.

4.40 Evaluate anticurvature filling in reducing procedural errors.

4.41 List the guidelines of canal preparation.

4.42 List the criteria of coronal preparation.

4.43 List the instruments used in cervical preparation.

4.44 List the value of cervical preparation.

4.45 State the specific danger zones of cervical preparation.

4.46 Evaluate the effectiveness of using the giromatic method or hand instrumentation using a peeso reamer or glidden drill.

4.47 List the criteria for apical preparation.

4.48 Describe the probability of round preparation due to presence of curve.

4.49 Locate apical constriction by tactile sense.

4.50 Check apical constriction with negotiation file.

4.51 Determine apical constriction.

5. Endodontic Measurements

5.1 List the complications of inaccurate measurement.

5.2 State the different measurement errors.

5.3 Define the term ledging and perforation as function of preparation.

5.4 State the different measurement methods.

5.5 Use bleeding on absorbent points as canal measurement method.

5.6 Explain the mathematical formulae.

5.7 Recognize application for mathematical formulae.

5.8 State the average lengths of maxillary and mandibular teeth.

5.9 Use the electronic root length measurement.

5.10 Define the concept of calibration.

5.11 Describe tactile sense to locate apical constriction.

5.12 State the criteria of endodontics measurement.

5.13 Use of measurements in taking radiograph.

5.14 State the criteria for measurement.

5.15 List the factors affecting canal length measurement.

5.16 State the different kinds of endodontic radiograph exposures.

5.17 List the radiographic armamentarium.

5.18 Perform radiographs on anterior-posterior teeth.

5.19 Describe the process for measuring anterior teeth.

5.20 State the guidelines for measuring maxillary bicuspids.

5.21 Use Clark's rule to identify the spatial relationship of an object.

5.22 Determine the series of three angulated radiographs.

5.23 State the guidelines for the measurement of mandibular molars.

5.24 Use the guidelines for the measurement of maxillary molars.

6. Root Canal Irrigation

6.1 Describe the bacteria found in necrotic root canal.

6.2 Describe the types of bacterial toxins.

6.3 List the intracanal medications.

6.4 List the indications for medications in canal therapy.

6.5 Discuss the concept of irrigation.

6.6 List the types of irrigant solutions throughout the history of endodontics.

6.7 Uses of sodium hypochlorite (NaOCl).

6.8 Describe the concept of sodium hypocholorite soaking.

6.9 List factors that enhance the activity of sodium hypochlorite.

6.10 Describe the advantages of sodium hypochlorite.

6.11 List the components of Clorox bleach.

6.12 Apply endodontic irrigation.

6.13 Perform flush out irrigation.

7. Automated Endodontic Instrumentation

7.1 List the advantages and disadvantages of hand instrumentation.

7.2 Identify which hand instruments are safer to use.

7.3 Select efficient auxiliary instruments.

7.4 Evaluate carbon steel and stainless steel for efficiency.

7.5 List the ultrasonic principles.

7.6 Define the terms cavitation, acoustic streaming, and vibrating file.

7.7 List the characteristics of ultrasonics.

7.8 List the advantages of sonic instrument.

7.9 Describe all instruments and identify the most efficient instrument.

7.10 Identify the dangerous instrument.

7.11 Describe the canal finder system.

7.12 List the characteristics of canal finder system as a safety instrument.

7.13 List the types of canal master.

7.14 Describe the second generation canal master U instrument.

7.15 List the pros and cons of using CMU and light speed.

7.16 Describe the mechanical instrumentation motion.

7.17 State the actions performed while using hand instrumentation:

7.18 List the factors to consider when using mechanical instrumentation.

7.19 List the canal anatomy factors that influence instrumentation selection.

7.20 Classify endodontic instruments' designs.

7.21 List the designs of endodontics file tip.

7.22 List the characteristics of triangular file.

7.23 List the characteristics of quadrangular file.

7.24 Describe the motions of the different file usage.

7.25 List the different numbers of instruments as per ISO standards.

7.26 List the characteristics of profile instrumentation.

7.27 List the advantages of profile instrumentation.

8. Root Canal Filling: Materials and Methods

8.1 List the endodontics filling materials used since 1900.

8.2 List the types of filling techniques.

8.3 List the materials used in impregnation technique.

8.4 List the disadvantages in using impregnation technique.

8.5 List the different steps in overfilling technique.

8.6 Describe the filling of the canal by diffusion technique.

8.7 List the components of Kloroperka filling.

8.8 Define the filling of canal by dipping technique ("dipper").

8.9 Describe the condensation filling technique.

8.10 Define the term condensation.

8.11 List the materials used in condensation method.

8.12 List the criteria of endodontics sealer.

8.13 List the criteria of filling material.

8.14 Identify the filling materials that encourage bacterial growth.

8.15 List paste filler kinds.

8.16 The N2 root canal filling material acts as a disinfectant, as shown in clinical, X-ray, and bacteriological evidence.

8.17 List the rationales of not using N2.

8.18 List the criteria of endodontics filling material.

8.19 List the components of the various paste fillers such as Diaket, Wach sealer, Walkoff paste, Riket paste, and Reibler paste.

8.20 List the historical periods of filling material.

8.21 List the disadvantages of paste filling.

8.22 Identify the current paste being used in endodontics.

8.23 List the components of stailine super and gutta percha.

8.24 Name the accessory point used in PAADI technique.

8.25 List the components of pastes such as Grossman sealer, Rickert's paste, and Tubli-seal.

8.26 Define AH 26 paste.

8.27 List the properties of AH 26 paste.

8.28 List the composition of AH 26.

8.29 Describe mid-treatment flare up.

8.30 Determine when to open or close a weeping canal.

8.31 List the factors that influence patient's having single or multi-visits endodontics.

8.32 Determine the need for tugback or no tugback.

8.33 List the ways of delivering cement to the canal.

8.34 Recognize when to fill or wait.

8.35 Discuss the consequences of cement overfill or GP?

9. Restoration of Endodontically Treated Teeth

9.1 Define prefabricated post restoration.

9.2 List the advantages of prefabricated post and core.

9.3 State the guiding principles of post restoration.

9.4 State the endodontics post functions.

9.5 List the designs of post restoration.

9.6 State the disadvantage of active post.

9.7 List the procedural error incidences in using screw post.

9.8 List the properties of parallel and passively fitted post.

9.9 Describe the stressed root when placing flexi-post.

9.10 Describe the consequences of using a short post.

9.11 List the criteria of endodontics post.

9.12 Identify post failures.

9.13 List the different modes of post failures.

9.14 List the guidelines of post cavity preparation (P.C.P.)

9.15 List the factors to consider in dealing with P.C.P.

9.16 State the types of post cavity preparation dimension.

9.17 Identify the size of drill used for PCP horizontal dimension.

9.18 List the suggested maximum sizes of peeso reamer for horizontal dimension.

9.19 List the guidelines for preparation of diameter.

9.20 Describe the dimensional thickness of different teeth.

9.21 Identify the width or diameter criteria of minimum size 70 post.

9.22 Recognize precautions of post placement in the roots.

9.23 List the factors to consider in PCP.

9.24 List the post length traditional concepts.

9.25 List the post length current guidelines.

9.26 List the indications of post restoration.

9.27 List the contraindications of post restoration.

10. Prefabricated Endodontic Post Technique

10.1 List the instruments and material used.

10.2 Characterize rubber dam application in field isolation.

10.3 List the guidelines of coronal clean out.

10.4 Describe the current USC-RKH post cavity preparation standards.

10.5 Describe the USC-RKH method for removal of Gutta Percha.

10.6 Describe the procedures used in pulp chamber and post cavity preparation.

10.7 Select correct size of ultrasonic tips for post cavity debridement.

10.8 Describe the procedures in post fitting.

10.9 List the types of cement media.

10.10 Review the history of materials used in post cementation.

10.11 Describe the delivery of cement into the post cavity preparation.

10.12 Use acid etch for coronal build up, intraradicular restoration, and core build up.

10.13 Differentiate the use of current materials such as composites, alloys, amalgams, and glass ionomers.

10.14 Describe the endodontic post technique sequence.

10.15 List the post removal hazards.

10.16 List the post removal guiding principles.

10.17 Describe the post removal techniques.

11. Emergency Treatment Principles

11.1 Describe the medical versus surgical approach to emergency treatment.

11.2 State how to protect periapical tissue from future invasion by canal toxic contents.

11.3 Describe the reduction of pulp cavity and periapical tissue fluid pressure.

11.4 Describe the protection of the periapical tissue from further infection by tooth closure.

11.5 Describe the promotion of patients' defense potentials.

11.6 State the human aspects of emergency care.

11.7 Describe the change in symptoms as a positive indication of successful treatment.

11.8 Describe how dental infections are spread.

11.9 Define the term Ludwig's angina infection.

11.10 State other symptoms associated with bulging submandibular space.

11.11 Define the different types of space infections: masticator, buccal, and canine.

11.12 Describe the treatment of canine space infection.

11.13 Explain the anatomy of maxillary sinus.

11.14 State the treatment of maxillary sinus infection.

11.15 List the four cardinal signs of lateral pharyngeal space infection.

11.16 List the causes of temporal space infection.

11.17 State the most important therapeutic management of infection.

11.18 Describe the trephination surgical procedure.

11.19 Describe the internal venting chamber concept.

11.20 State the concept of pulpotomy as an emergency.

12. Endodontic Case Selection and Treatment Planning

12.1 List the endodontic case selection and treatment planning considerations.

12.2 List the patients' personality types in treatment.

12.3 Define the meaning of the acronym: RAM-E.

12.4 State the stress reduction measures of endodontic case selection and treatment planning.

12.5 State the general health conditions of patients in endodontic case selection and treatment planning.

12.6 State the oral health conditions of endodontic case selection and treatment planning.

12.7 State the clinical and root canal tooth conditions in endodontic case selection and treatment planning.

12.8 State the canal anatomy factors.

12.9 Describe the overall retreatment plans for periapical pathology, root resorption, periodontic-endodontic, tooth structure crack lines, cracked tooth syndrome, and pulpal calcification.

12.10 State the role of a dentist as a team leader in case presentation.

12.11 State the considerations of defensive dentistry.

12.12 List the doctrine of informed consent.

12.13 Describe endodontic treatment finalization.

12.14 Explain each phase of endodontic treatment finalization.

- Phase I – Diagnosis
- Phase II – Endodontic Treatment
- Phase III – Intracoronal Buildup
- Phase IV – Surgical Treatment
- Phase V – Final Restoration

Course Title:	Course Level:
Endodontics A.2 ADVANCED ENDO.	(Semester and year)

Course Description:

Advanced Endodontic course is designed for the management of endodontic treatment complications and failures. Special emphasis will be on the definition of the concept of success and the concept of failure. The course also emphasizes detailed clinical procedures used in the retreatment of the different endodontics materials. Additional topics include the treatment of advanced and complicated endodontic cases that are usually treated by an endodontic specialist.

Course Objectives

1. The Endodontic Success and Failure

1.1 State the measures of success.
1.2 List the histological criteria of success.
1.3 List the endodontic treatment success factors.
1.4 Analyze the traditional literature of success and failure.
1.5 Describe the significance of the different factors for success and failure.
1.6 Describe the role of radiology in success and failure assessment
1.7 List the radiographic criteria for assessment.
1.8 Describe the role of recall in success and failure.
1.9 State the endodontic success rate in periodontal disease of >2mm pockets.
1.10 Recognize the success rate of removable partial denture.
1.11 List the causes of endodontic failures.
1.12 Determine the rate of failure by comparing each cause.
1.13 Explain the meaning of the acronym POOR PAST.
1.14 State the rates of retreatment reasons for each condition of POOR PAST.
1.15 Classify the types of endodontic failures.

1.16 Define primary endodontic failures

1.17 List the factors that cause material failures.

1.18 List the types of method failures.

1.19 List the types of surgical method failures.

1.20 Define secondary endodontic failure.

1.21 Identify the concepts of "concurrent dental diseases."

1.22 Recognize the failures involving concurrent iatrogenic procedures.

1.23 Diagnose endodontic failure.

1.24 Identify endodontic success and failure by using 4R system.

4. SILVER POINTS RETREATMENT

4.1 State the causes of silver points success in endodontics.

4.2 State the causes of failures of silver points endodontics.

4.3 List the properties of silver points.

4.4 List the instruments used in silver points removal.

4.5 List the materials used in removing silver points.

4.6 Describe the braiding techniques procedures.

4.7 State the procedures in achieving clinical access to silver points

4.8 Identify the materials used in restoration for removal prior to accessing silver point.

4.9 List the procedures in removing amalgam in the pulp chamber.

4.10 List the procedures in removing composite in the chamber.

4.11 How do you avoid causing damage to the silver cone in the pulp chamber? Explain.

4.12 List the solvents used in removing cement in the chamber.

4.13 List the uses of endodontic extractor.

4.14 State the techniques for using the endodontic extractor instrument.

4.15 Identify the difficulties in using endodontic extractor.

5. Retreatment of Endodontic Paste Fillings

5.1 List the types of paste fillers.

5.2 Describe the philosophy behind the use of different pastes.

5.3 List the criteria to be considered when using paste as filing material.

5.4 Identify the criteria and the essential qualities of endodontic filling material.

5.5 Recognize the germ inhibitory characteristics of endodontic materials.

5.6 List the rationales for not using paste filling.

5.7 List the components of the different paste filling materials.

5.8 List the pastes used throughout dentistry history.

5.9 List the paste fillings that are used currently.

5.10 List the disadvantages of using paste filling.

5.11 List the current paste filling being used.

5.12 State the components of AH 26 paste cement.

5.13 State the components of Stailine Super.

5.14 State the components of Gutta Percha.

5.15 Describe the mechanisms of paste filling failure.

5.16 Describe the results of paste filling failure on the tooth.

5.17 Recognize the danger of formaldehyde of N_2.

5.18 State the precautions for retreatment of hardened pastes.

5.19 List the guidelines of retreatment of endodontic paste fillers.

7. The Endodontic-Periodontic Relationship: A Critical Review

7.1 Identify the common characteristics of pulp and periodontal.

7.2 List the ways of communication.

7.3 Describe the mechanisms of pathogenesis of endodontic disease.

7.4 Describe the mechanisms of pathogenesis of periodontal disease.

7.5 List the effects of periodontal on the pulp.

7.6 List the net effect of periodontal disease on the pulp.

7.7 List the effects of deep periodontal pockets.

7.8 List the periodontal procedures.

7.9 List the factors that increase enzymes in blood vessels endothelium.

7.10 Describe periodontal disease as a cause for rapid aging of the pulp.

7.11 List the effects of caries.

7.12 Describe advanced periodontal disease as a contributing factor to root calcification.

7.13 Describe pulp disease as a cause of periodontal defects.

7.14 State the microbial relationship.

7.15 State the differential diagnosis of periodontic and endodontic radiographically.

7.16 Classify endodontic-periodontic lesions.

8. Endodontic Bleaching

8.1 List the types of staining.

8.2 List the differential diagnosis of staining.

8.3 List the causes of systemic staining.

8.4 List the local causes of staining.

8.5 List the causes of endodontic staining.

8.6 Describe the mechanisms of tooth discoloration.

8.7 List the internal bleaching techniques.

8.8 Define thermal bleaching.

8.9 List the sources of thermocatalytic bleaching.

8.10 Define non-thermal bleaching.

8.11 List the endodontic considerations for non-thermal bleaching.

8.12 List the factors influencing pre-bleaching evaluation.

8.13 List the factors influencing coronal evaluation.

8.14 List the coronal preparations.

8.15 Discuss the need for retreatment in terms bleaching.

8.16 Use of cavit as an intrinsic restoration.

8.17 Use of cavit as a post bleaching restoration.

8.18 List the materials used for translucency.

8.19 List the factors to consider in evaluating post bleaching results.

8.20 State the dangers of using Superoxol solution.

8.21 List the instruments used in bleaching.

8.22 Describe the theory of Superoxol solution initiating inflammatory response through the patent dentinal tubules.

8.23 State the relationship between bleaching and root resorption

9. Treatment of Wide Open Apex Endodontic

9.1 List the wide-open endodotic management techniques.

- Vital pulp therapy
- Apexification
- Immediate endodontic with apical barrier
- Mid-surgery endodontic

9.2 Describe the different types of apex: wide-open, blunderbuss, immature, underdeveloped, incompletely formed, and incompletely developed.

9.3 Define the term apexification.

9.4 List the materials used in apexification therapy.

9.5 List the canal preparation in apexification therapy.

9.6 List the canal medications used in apexification therapy.

9.7 List the procedure of obturation in apexification therapy.

9.8 State the limitations of evaluating apexification success radiographically.

9.9 List the natures of apical closure.

9.10 List the possible disadvantages of apexification.

9.11 Apply the 4Rs system in apexification diagnosis.

9.12 Observe a demonstration for a case of apexification using standard GP filling.

9.13 Observe a demonstration for a case of apexification using immediate barrier and surgery.

9.14 Observe a demonstration of surgical treatment.

9.15 Observe a demonstration of wide open apex endodontics using immediate barrier technique.

Distribution of Syllabus by Contact Hours:

(Including Labs, Clinical, and Projects, etc) 3 hours lecture and 1 clinic/ wk

Text Book and References:

Pathway of the Pulp - Stephen Cohen 11 Ed

Description/Philosophy

The Advanced Endodontic course is designed to manage endodontic treatment complications and failures. Special emphasis will be placed on the definition of the concept of success and the concept of failure. The course also emphasizes on detailed clinical procedures used in the retreatment of different endodontic materials. Additional topics include the treatment of advanced and complicated endodontic cases that are usually treated by endodontic specialists.

Course Topics

1. The endodontic success and failure
2. Endodontic finalization, Part 1 (Some clinical and scientific observations)
3. Endodontic finalization, Part 2 (The system)
4. Treatment of silver points retreatment
5. Retreatment of endodontics paste fillings
6. Retreatment of Gutta Percha fillings
7. Endodontic procedural errors
8. Endodontic bleaching
9. Treatment of wide open apex endodontics
10. Critical Review of Canal Preparation Automation Method
11. Dental Trauma

Specific Objectives

1. The Endodontic Success and Failure

1.1 List the measures of success.

1.2 List the histological criteria of success.

1.3 List the factors for endodontic treatment success.

1.4 Analyze the traditional literature of success and failure.

1.5 Describe the significance of the different factors of success and failure.

1.6 Describe the limitations of radiology in success and failure assessment.

1.7 List the radiographic criteria for assessment.

1.8 Describe the role of recall in success and failure.

1.9 State the endodontic success rate in periodontal disease of >2mm pockets.

1.10 State the success rate of removable partial denture.

1.11 List the causes of endodontic failures.

1.12 List the rate of failure by cause.

1.13 Explain the meaning of the acronym POOR PAST.

1.14 State the rates of retreatment for each condition of POOR PAST.

1.15 Classify the endodontic failures.

1.16 Define primary endodontic failures.

1.17 List the factors that cause material failures.

1.18 List the factors that cause method failures.

1.19 List surgical method failures.

1.20 Define secondary endodontic failure.

1.21 Identify the concept of “concurrent dental diseases”.

1.22 Recognize the failures involving concurrent iatrogenic procedures.

1.23 Diagnose endodontic failure.

1.24 Identify endodontic success and failure by using 4R system.

2. The Endodontic Finalization, Part 1 (Some clinical and scientific observations)

2.1 List the clinical and scientific basis in endodontic finalization.

2.2 Describe the role of radiographs in clinical and scientific diagnosis.

2.3 State the limitations of dental radiography of the maxillary sinus.

2.4 State the anatomy of maxillo-facial.

2.5 List the pathways of infection.

2.6 State the clinicians' limitations in interpreting radiographs.

2.7 Describe the histology of periapical lesions.

2.8 List the microbiology of periapical lesion.

2.9 Interpret radiograph readings and state whether it is a healing scar or an apical lesion.

2.10 State the relationship of symptoms in pathology.

2.11 Describe the endodontic disease processes.

2.12 State the role of patient's health endodontics.

2.13 State the role of canal retreatment in management of endodontic failures.

2.14 List the role of retreatment in surgical endodontics.

2.15 State the role of surgery in the endodontics failures management.

2.16 Explain some philosophy of "wait and see" endodontics.

2.17 List the complications of "wait and see" endodontics.

2.18 Describe the periapical complications.

3. The Endodontic finalization, Part II (The System)

3.1 Describe the five phases of endodontic finalization.

- Phase 1 – Diagnosis
- Phase 2 – Endodontic treatment
- Phase 3 – Intracoronal buildup placement
- Phase 4 – Surgical treatment and periodontics
- Phase 5 – Final restoration

3.2 Perform a comprehensive diagnosis.

3.3 List the criteria for pre-endodontic restoration removal.

3.4 List the criteria for mid-endodontic restoration removal.

3.5 List the types of endodontic treatments.

3.6 State the indications of endodontic surgery.

3.7 State the importance of treating inaccessible canals prior to endodontics surgery.

3.8 Determine the endodontic treatment.

3.9 Determine whether post build-up or cast post and core is indicated.

3.10 List the types of posting/intra-coronal build-up.

3.11 Describe the different surgical indications.

3.12 List the diagnostic indications of surgery.

3.13 List the corrective indications of surgery.

3.14 List the reparative indications of surgery.

3.15 List the therapeutic indications of surgery.

3.16 List the periodontic indications of surgery.

3.17 State the clinician's main goals in endodontic treatment.

3.18 State the limiting factors in surgical endodontics.

4. Silver Points Retreatment

4.1 State the period of silver points use in endodontics.

4.2 State the causes of failures of silver points endodontics.

4.3 List the properties of silver points.

4.4 List the disadvantages of silver point endodontics.

4.5 List the precautions to be taken while removing silver points.

4.6 Describe the braiding techniques procedures.

4.7 State the procedures in achieving clinical access to silver points.

4.8 Identify the materials used in association for removal silver point.

4.9 List the procedures in removing amalgam in the pulp chamber in silver point retreatment.

4.10 List the procedures in removing composite in the chamber in silver point retreatment.

4.11 State the reasons for not damaging the silver cone in the pulp chamber.

4.12 List the solvents used in removing cement in the chamber.

4.13 List the uses of endodontic extractor.

4.14 State the techniques for using the endodontic extractor instrument.

4.15 Identify the difficulties in using endodontic extractor.

5. Retreatment of Endodontic Paste Fillings

5.1 List the reasons for using paste fillers.

5.2 Describe the philosophy behind the use of different pastes as endodontic fillings.

5.3 List the criteria when to use paste as filling material.

5.4 Identify the criteria and essential qualities of endodontic filling material.

5.5 Recognize the germ inhibitory characteristics of endodontic materials.

5.6 List the articles (authors) showing paste failures.

5.7 List the components of the different paste filling materials.

5.8 List the pastes used in dentistry from 1900 to the present.

5.9 List the current paste fillings being used.

5.10 List the disadvantages of paste filling.

5.11 List the paste filling being used currently.

5.12 State the components of AH 26 paste cement.

5.13 State the components of Stailine Super

5.14 State the components of Gutta-Percha.

5.15 Describe the mechanisms of paste filling failure.

5.16 Describe the results of paste filling failure on the tooth.

5.17 Describe the danger of formaldehyde of N_2.

5.18 State the precautions for retreatment of hardened pastes.

5.19 List the guidelines for retreatment of endodontic paste fillers.

6. Endodontic Procedural Errors

6.1 List the types of procedural errors.

6.2 State the incidences of ledging procedural errors.

6.3 List the management of ledges.

6.4 List the ledging prevention factors.

6.5 Describe apical canal transportation type of procedural errors.

6.6 List the techniques to reduce transportation type of procedural errors.

6.7 Identify the least procedural errors by comparing the four instrumentation techniques for apical canal transportation.

6.8 List the procedural errors of each instrumentation technique, namely, Crown-down technique, step-back technique, MM1500 sonic instrumentation, and the Nittimatic system.

6.9 List the specific danger and safety zones of anticurvature method in reducing procedural errors.

6.10 Use radiograph in anticurvature method to identify the danger and safety zones.

6.11 State the rules in anticurvature method.

6.12 Define perforation as a procedural error.

6.13 Differentiate between stripping and perforation.

6.14 List the causes of perforation.

6.15 Define perforation pathology as a function of time.

6.16 List the effects of perforation in the periodontium.

6.17 List the common types of perforations.

6.18 List the perforation incidences of each perforation type: furcation, cervical, mid-root, apical curvature, and apical foramen.

6.19 Describe the prognosis of cervical perforations.

6.20 State precaution of post cavity preparation perforations.

6.21 List the incidences of post cavity preparation perforations.

6.22 List the steps for perforation diagnosis.

6.23 Use paper points in perforation diagnosis when and how.

6.24 List perforation management guiding principles.

6.25 Describe the importance of immediate obturation.

6.26 List perforation repair materials.

6.27 Identify the ideal material and method for perforation repair.

6.28 Describe the use of decalcified freeze dried bone as matrix system.

6.29 Evaluate each material used in perforation repair: Amalgam, Gutta Percha, and MTA.

6.30 Identify the best sealing ability of materials used in perforations repair.

7. Endodontic Bleaching

7.1 List the types of discoloration.

7.2 List the differential diagnosis of discoloration.

7.3 List the causes of systemic discoloration.

7.4 List the local causes of discoloration.

7.5 List the causes of endodontic discoloration.

7.6 Describe the mechanisms of tooth discoloration.

7.7 List the internal bleaching techniques.

7.8 Define thermal bleaching.

7.9 List the sources of thermocatalytic bleaching.

7.10 Define non-thermal bleaching.

7.11 List the endodontic considerations for non-thermal bleaching.

7.12 List the factors influencing pre-bleaching evaluation.

7.13 List the factors influencing coronal evaluation.

7.14 List the coronal preparations.

7.15 Discuss the need for retreatment in the context of bleaching.

7.16 Use of Cavit as an intrinsic restoration.

7.17 Use of Cavit as a post bleaching restoration.

7.18 List the materials used for post bleaching restoration.

7.19 List the factors to consider in evaluating post bleaching results.

7.20 State the dangers of using superoxol solution.

7.21 List the instruments used in bleaching.

7.22 Describe the theory of superoxol solution initiating inflammatory response through the patent dentinal tubules.

7.23 State the relationship between bleaching and root resorption.

8. Treatment of Wide Open Apex Endodontic

8.1 List the wide-open endodontic management techniques.

8.2 Vital pulp therapy

8.3 Apexification

8.4 Immediate endodontic with apical barrier

8.5 Mid-surgery endodontic

8.6 Describe the following terms: wide-open, blunderbuss, immature, underdeveloped, incompletely formed, and incompletely developed.

8.7 Define the term apexification.

8.8 List the materials used in apexification therapy.

8.9 List the canal preparation in apexification therapy.

8.10 List the canal medications used in apexification therapy.

8.11 List the procedure of obturation in apexification therapy.

8.12 State the limitations of evaluating apexification success radiographically.

8.13 List the natures of apical closure.

8.14 List the possible disadvantages of apexification.

8.15 Apply the 4Rs system in apexification diagnosis.

8.16 Observe a demonstration for a case of apexification using standard GP filling.

8.17 Observe a demonstration for a case of apexification using immediate barrier and surgery.

8.18 Observe a demonstration of surgical treatment.

8.19 Observe a demonstration of wide open apex endodontics using immediate barrier technique.

9. Automation: Mechanical Endodontic Instrumentation Differential Diagnosis

9.1 Describe the role of hand instrumentation.

9.2 State the disadvantages of hand instrumentation.

9.3 List the methods of hand instrumentation.

9.4 Identify the reasons for complete removal of pulp tissue.

9.5 Discuss the issue of satisfying endodontic instrumentation.

9.6 Discuss the history of mechanical endodontic instrumentation.

9.7 Identify the concept of auxiliary rotary instrument.

9.8 List the mechanical endodontic instrumentation technique.

9.9 List the ultrasonic principles.

9.10 Define the terms: cavitation, acoustic streaming, and vibrating file.

9.11 List the disadvantages of ultrasonic technique.

9.12 List the advantages of sonic technique.

9.13 List the treatment procedures where ultrasonic technique is efficient.

9.14 List the dangers of using rotary instruments.

9.15 Determine the safest system of automation to use.

9.16 Describe file design.

9.17 Describe quadrangular and triangular K-files, and H-files.

9.18 Describe the profile instrumentation method.

9.19 List the advantages of profile instrumentation.

9.20 Define the taper of endodontics instrument.

9.21 Describe mechanical instrumentation motions.

9.22 List the hand instrumentation motions.

9.23 List the factors to be considered in mechanical canal instrumentation.

9.24 Define the Canal Finder System (CFS) instruments.

9.25 List the disadvantages of using Canal Master U (CMU) instrument.

9.26 List the disadvantages of using CMU and light speed instruments.

10. Root Fractures Trauma

10.1 List of terms for root fracture trauma.

10.2 List the causes of dental trauma and endodontics.

10.3 List the etiology and incidence of dental trauma.

10.4 List the extra oral examinations of trauma cases.

10.5 Describe the types of root fractures: apical, mid-root, cervical, and crown.

10.6 Describe the different tests for dental trauma diagnosis.

10.7 Describe root fracture repair.

10.8 Describe the concept of vital apical fragment.

10.9 Describe the treatment for canal root fracture (C-R-F).

10.10 Define tooth replantation.

10.11 List the clinical and biological considerations for avulsion management.

10.12 List suggested methods of case selection and prognosis.

10.13 List the clinical success criteria for avulsed tooth replantation.

10.14 Describe the current treatment method for splinting.

10.15 Describe the root resorption replantation treatment.

Course Title:	Course Level:
Endodontics A.3 surgical ENDO.	(Semester and year)

Course Description:

The philosophy of this course is to develop surgical orientation in each resident demonstrating benefit of surgical exploration, intervention, and surgical therapeutic intervention for relevant cases that do not heal by non-surgical therapy and to develop the philosophy that surgical endodontics is intimately related to periodontal surgery and oral surgery. The course includes patient case presentation and

Course Title:	Course Level:
Endodontics A.3 surgical ENDO.	(Semester and year)

preparation, surgical access, root-end procedures, periodontal surgery procedures, post-operative care, and management of complications.

Course Objectives

- State the traditional indications of surgical endodontics.
- State the current indications of surgical endodontics.
- State the current contraindications of surgical endodontics.
  - Define the treatment finalization concept.
  - State the treatment finalization phases.
  - State the rationales for treatment finalization.
  - State the advantages of treatment finalization.
  - State the relationship and difference between finalization and surgical indications.
- State the factors of proper and improper surgical endodontic case selection and patient interview.
- State and define the ASA status classification of patient's medical status.
- State and define the PAADI AEGD classification of patient's mental or personality status.
  - Define the concept treatment modification.
  - Be able to prepare the patient for surgery.
  - List all endodontic surgery instruments and describe the use of each instrument.
  - List the uses of surgical microscope and importance of magnification.

- State the types of local anesthetics, their use effects, and use modification.

Textbooks and References:

Pathway of the Pulp - Stephen Cohen 11 Ed.

Course Title:	Course Level: (Semester and year)
PROSTHODONTICS	First year

Course Description:

To instruct students regarding proper handling of the patients such as identifying their main concern, needs and problems, and to perform the necessary diagnostic examination needed based on the data gathered. This would enable to the students to arrive at the most appropriate choice of treatment that meets patient satisfaction with regards to prosthodontic cases.

Course Objectives

Course Title:	Course Level: (Semester and year)
PROSTHODONTICS	First year

1. Define Prosthodontics. Describe: (a) sequelae of tooth loss; (b) treatment needs; (c) Prosthodontic trends and (d) overall principles.
2. Describe and discuss clinical evidence-based studies of conventional and cantilevered FPDs. Define "failure" and describe patient, biological mechanical/technical factors related to FPD survival, and the economic considerations.
3. Describe diagnosis and treatment planning. How each area (chief complaint, personal, medical and dental history, and examinations) leading to the diagnosis relates to the Prosthodontic case. Describe the role of Prosthodontics in the overall treatment plan and its interaction with the various phases. Define Prosthodontic aims and sequence.
4. Define occlusion and concepts and describe its considerations in Prosthodontic treatment. Describe: (a) occlusal analysis; (b) occlusion and function and parafunction; (c) tooth wear and its influence in treatment; (d) Prosthodontic occlusion and procedures involved.
5. Describe: (a) principles of tooth preparation- biological, mechanical, and esthetic factors; (b) tooth preparation guidelines; (c) various types of preparation for conventional and resin-bonded FPDs.
6. Describe (a) fluid control; (b) soft tissue management including retraction cords and electrosurgery for FPD impression procedure; (c) clinical application of various impression materials and methods.
7. Describe (a) interocclusal registration materials and (b) methods in different clinical situations.
8. Describe PFM FPDs with reference to framework design: strength, function, fit contour, and esthetics.
9. Describe the different types and techniques of Provisional restoration.
10. Understand the contemporary concepts of restoring pulpless teeth and the ability to apply these principles to clinical practice.
11. Describe try-in and cementation of FPDs and luting agents involved. Describe and discuss the color in dentistry

Textbooks and References

Contemporary Fixed Prostho - Stephen F. Rosenstiel
Fundamentals of Fixed Prosthodontics by Herbert T. Shillingbur

Course Title:	Course Level:(Semester and year)
Orthodontics	First Year

Course Description:

At a certain level, the general practitioner should participate in orthodontic treatment. This is true, particularly for interceptive orthodontic treatment. Therefore, a primary care dentist should possess the knowledge and education to be able to distinguish between moderate and severe orthodontic problems as this would be helpful in determining which patients should be referred to a specialist.

In certain cases, early orthodontic treatment minimizes the need for extensive treatment in the future. Therefore, activation of the general practitioner's knowledge regarding interceptive orthodontics is a crucial subject during their training.

Course Objectives

1. Perform interceptive orthodontic treatment.
2. Distinguish moderate from severe orthodontic problems.
3. Determine which patients should be referred to a specialist.
4. Evaluate the general health of the patient and actual clinical findings related to the mouth area through good records and a thorough treatment planning.
5. Analyze intraoral roentgenographic.
6. Describe the position of the dentition in relation to the cranium.
7. Evaluate physical maturity of the patient.
8. Recognize any etiological factors that may have contribute to the malocclusion.

Textbooks and References:

Contemporary Orthodontics by William R. Proffit, Henry W. Fields, and David M. Sarver

I COURSE PHILOSOPHY

The Orthodontics course is designed to train residents to conduct practical clinical analysis on simple appliances and the diagnostic procedure used in orthodontics to enable them to participate in an interdisciplinary approach to treatment planning that involves all sections of dentistry. The course is also designed to equip resident doctors with the basic skills necessary for the management of orthodontic patients.

II COURSE TOPICS

1. An introduction to orthodontics
2. Classification of malocclusion
3. Etiology of malocclusion
4. Orthodontic assessment and diagnosis
5. Interceptive orthodontic treatment
6. Removable orthodontic appliances
7. Functional orthodontic appliances
8. Fixed orthodontic appliances
9. Adjunctive orthodontic treatment
10. Periodontal Orthodontic Interrelationship
11. Management of the Developing Dentition
12. Growth and Development
13. Post-natal Craniofacial Growth and Development

IIIGOALS & LEARNING OBJECTIVES

1. AN INTRODUCTION TO ORTHODONTICS

1.1 Define orthodontics – refer to cited literature

1.2 Define cephalometric radiography – refer to cited literature

1.3 State goals of modern orthodontics – refer to cited literature

1.4 List the major responsibilities in orthodontic practice and ideal results

1.5 Define malocclusion and list its most common forms

1.6 State epidemiology - refer to cited literature

1.7 State etiology – refer to cited literature

1.8 List methods of classifying malocclusion and mention the most popular method –refer to cited literature

1.9 List Angle's classification of malocclusion

1.10 List the types of facial profiles

1.11 Define growth and development

1.12 Classify the different types of malocclusions
1.13 List orthodontic assessment and diagnosis
1.14 List the importance of applied cephalometric radiograph
1.15 List interceptive orthodontics
1.16 List oral habits and their management
1.17 List space management
1.18 List removable orthodontic appliances
1.19 List fixed orthodontic appliances
1.20 List interdisciplinary treatment
1.21 List orthognathic surgery
1.22 List cleft lip and palate and their managements

2. CLASSIFICATION OF MALOCCLUSION

2.1 Define dental malocclusion and list its most common forms – refer to cited literature
2.2 List methods of classifying malocclusion
2.3 State the etiology of angle class 1 molar relation and list occlusal features
2.4 State etiology of angle class II div.1 and list occlusal features
2.5 State etiology of angle class II div 2 and list occlusal features
2.6 State etiology of angle class III dental and list occlusal features
2.7 State etiology of angle class III skeletal
2.8 Describe the conditions of over-bite, its effects, and how it can be orthodontically corrected and why
2.9 list cases before and after
2.10 Describe openbite and how it can be orthodontically corrected
2.11 Describe overjet, causes, effects, and how it can be orthodontically corrected,
2.12 list variations in overjet, effects, and how it can be orthodontically corrected
2.13 Describe crossbite
2.14 State etiology of crossbite, its effects and how it can be orthodontically corrected

2.15 Describe underbite (reverse OJ), its causes, effects, reasons why it should be corrected, and how it can be orthodontically corrected

2.16 Describe impacted teeth, implications, effects, and how it can be orthodontically corrected

2.17 List the causes and effects of missing teeth and how it can be orthodontically corrected

2.18 Describe crowding of teeth, causes, effects, and methods of correction

2.19 Describe spacing of teeth, causes, effects, and methods of correction

2.20 Classify facial profile and treatment methods

2.21 Classify skeletal malocclusion

3. ETIOLOGY OF MALOCCLUSION

3.1 Refer to cited literature in defining normal and ideal occlusion

3.2 List the six keys of occlusion

3.3 Refer to cited literature for definition of the term malocclusion and provide a summary

3.4 Refer to cited literature on etiology of orthodontic problems and main etological factors

3.5 Refer to cited literature on the role of genetic and environmental factors

3.6 List specific etiological factors

3.7 List and describe primary etiological sites

3.8 Describe the role of genetic factors on the neuromuscular system

3.9 List genetic factors of abnormalities of tooth size, number of teeth, and abnormalities of tooth morphology

3.10 List genetic factors of abnormalities of tooth structures

3.11 List genetic factors of mineralization of teeth

3.12 List genetic factors of bones and their size

3.13 List genetic factors of soft tissues

3.14 List environmental factors of trauma, physical factors, and bad habits

3.15 List systemic and local diseases that are affected by environmental factors

4. ORTHODONTIC ASSESSMENT & DIAGNOSIS

4.1 State the purpose and aims of orthodontic assessment

4.2 List the equipment required in orthodontic assessment and state the importance of study models

4.3 List important factors and considerations in presenting complaint

4.4 List diagnostic procedures

4.5 List case history in the diagnostic procedure

4.6 List clinical examination and what it involves in the diagnostic procedure

4.7 List most important aspects of functional analysis in the diagnostic procedure

4.8 List examination of orofacial dysfunctions in the diagnostic procedure

4.9 Recognize the importance of radiographic examination in orthodontic diagnosis and list routinely required radiographs

4.10 Recognize the importance of photographic analysis and list procedures

4.11 List the standard intraoral and extra-oral photographs in photographic analysis as recommended by ABO

4.12 Describe cephalometric analysis and list indications, patterns, and classifications

4.13 List the importance of cephalometric analysis

4.14 Describe study cast analysis, its requirements, and list information obtained from the study casts

4.15 Describe procedures for clinical examination of the face and categorize the facial features

4.16 Describe functional analysis and list most important aspects of this analysis

4.17 State etiology of tongue thrusting

4.18 State etiology of dysfunctions

4.19 List lip postures, adenoid facies, and occlusion

5. INTERCEPTIVE ORTHODONTICS TREATMENT

5.1 Part I – Serial Extraction

5.1.1 Refer to cited literature on the concept of serial extraction

5.1.2 Refer to cited literature on serial extraction approach

5.1.3 Describe the purpose of serial extraction, and list advantages

5.1.4 List patient selection criteria, its advantages and disadvantages

5.1.5 List steps for serial extraction procedures and re-evaluation – refer to cited literature

5.2 Part II – Early orthodontic intervention

5.2.1 State the purposes of early orthodontic intervention

5.2.2 List limitations and exceptions to early orthodontic intervention

5.2.3 List indications of early orthodontic intervention

5.2.4 Refer to cited literature on reasons why the late mixed dentition offers the best time for intervention

5.2.5 Recognize the urgency of having definite time constraints and therapeutic goals for first- phase patients

5.2.6 Recognize the importance of the need to form specific treatment objectives and having a rational understanding with the patient or patient's family before initiating treatment

5.2.7 List conclusion

5.3 Part III- Appliances

5.3.1 Define anterior cross-bite and state risks

5.3.2 List types of treatments and appliances for anterior cross-bite and state reasons and risks

5.3.3 Describe posterior cross-bite

5.3.4 Learn how to differentiate between skeletal and dentoalveolar cross-bite

5.3.5 Describe the treatments and therapy for unilateral dentoalveolar cross-bite with lateral force bite, and describe appliance used

5.3.6 Describe quadhelix

5.3.7 Describe appliances used for treatment of skeletal type and list causes, effects, and treatment

5.3.8 List types, causes, and appliance to be used in open-bite

5.3.9 Define median diastema, list types, causes, and appliances most suitable for use

5.3.10 Define the ugly duckling stage and how it should be treated

5.3.11 Define space maintainer

5.3.12 Describe types of appliances in space maintainer, and state advantages and disadvantages

5.3.13 Define space regainer and list types of appliances

6. REMOVABLE ORTHODONTIC APPLIANCES

6.1 Learn the principles of orthodontic appliances

6.2 Define removable appliance, list categories, and state their purpose

6.3 List indications, advantages, and disadvantages of the removable appliance

6.4 List components, active component, and factors of the removable appliance

6.5 Describe retentive component and list how retention is usually provided

6.6 Describe base plate and list commonly used components

6.7 Fixed orthodontic appliances

6.8 Define fixed appliance

6.9 List components of fixed appliance

6.10 List indications of fixed appliances, advantages, and disadvantages

6.11 Describe different treatment stages

6.12 List appliance management

6.13 Define anchorage control and list methods by which anchorage can be reinforced in fixed appliance patients

6.14 List appliance types

7. FUNCTIONAL ORTHODONTIC APPLIANCES

7.1 Define functional appliance

7.2 Refer to cited literature on classification of categories of functional appliance

7.3 Describe the categories of functional appliance

7.4 List functional, active, and miscellaneous components of functional appliances and mechanism of action

7.5 List practical management, indications, skeletal, and dental effects

8. FIXED ORTHODONTIC APPLIANCES

8.1 Define fixed appliances

8.2 List components of fixed appliances

8.3 List indications of fixed appliances, advantages, and disadvantages

8.4 Describe different treatment stages

8.5 List appliance management

8.6 Define anchorage control and list methods by which anchorage can be reinforced in the fixed appliance patient

8.7 List appliance types

9. PERIODONTAL ORTHODONTIC INTERRELATIONSHIP

(Adjunctive orthodontic treatment)

9.1 List factors and considerations of periodontal orthodontic interrelationship

9.2 List prosthetic objectives and preparation

9.3 List management of molar with furcation involvement

9.4 List mucogingival considerations

9.5 List diagnostic considerations for grafting before treatment

9.6 Assess whether to treat recession or not, and list benefits of early diagnosis

9.7 Refer to quotes from cited literature

9.8 List the types of gingival recession

9.9 Define frenectomy, factors to be considered, associations and when it should be carried out

9.10 List gingival retention and management

9.11 Refer to cited literature on gingival retention

9.12 Define circumferential supracrestal fiberotomy (CSF) and List esthetic considerations and procedures

9.13 List management of periodontally involved cases and considerations

9.14 List procedures for infection control

9.15 Describe how to reduce or minimize occlusal trauma and refer to before and after cases

9.16 Describe orthodontic treatment at different ages

9.17 List after periodontal treatment and monitoring

9.18 Describe the use of implants as anchorage

9.19 Describe completed premolar extraction

9.20 Describe ectopically positioned and unerupted teeth

9.21 Describe the approaches to impacted canines

9.22 Define forced eruption and list indications

9.23 Describe forced eruption with repeated fibrotomy

9.24 Define molar uprighting and list considerations

10. MANAGEMENT OF THE DEVELOPING DENTITION

(Adjunctive orthodontic treatment)

10.1 List origin of teeth

10.2 List the influences that affect tooth development

10.3 List primary dentition and describe procedures, relationship, and sequence of eruption

10.4 List permanent dentition

10.5 Describe inter-canine teeth and the ugly duckling stage

10.6 Describe abnormalities of eruption and exfoliation

10.7 List local factors that affect the exchange of teeth

10.8 Assess site of extraction

10.9 List causes of median diastema and treatment

11. GROWTH AND DEVELOPMENT

(Adjunctive orthodontic treatment)

11.1 Define growth and development

11.2 List theories of growth control

11.3 List principles of bone growth

11.4 Define mandibular growth

11.5 Define facial growth

11.6 List growth mechanisms

11.7 Describe endosteal and periosteal bone growth

11.8 Describe cortical drift

11.9 Describe relocation and remodeling

11.10 Describe the "V" principle

11.11 Describe surface principle

11.12 List growth fields

11.13 Describe displacement

11.14 List growth equivalents

11.15 List treatments that may have a bearing on growth pattern of the jaw and development

12. POST-NATAL CRANIOFACIAL GROWTH AND DEVELOPMENT

(Adjunctive orthodontic treatment)

12.1 Define post-natal craniofacial growth and development

12.2 Define development

12.3 Describe skull and jaws at birth and relative sizes of face and cranium

12.4 List changes in overall body proportions

12.5 List rates of growth of cranium and face from birth to adulthood

12.6 Describe bone formation

12.7 List treatment that growth pattern of the jaws and development of occlusion have a bearing on

12.8 Refer to growth studies

12.9 List principles of bone growth, mechanism, and areas of growth

12.10 Refer to cited literature on theories of growth control and list growth sites versus growth centers

12.11 List conclusions

Course Level: (Semester and year)	Course Title:
First Year	Book Review

Course Description:

Evidence based dental Book Chapters is a weekly seminar for the first year residents. The course emphasizes the principles of scientific design and methodology. The goal of the course is to increase the resident's awareness on how to review books on the different AEGD courses (Endodontics, Periodontics, Implantology, Prosthodontics, Restorative, etc.) and how to perform a critical analysis of the chapter reviewed.

Course Objectives

- Scientific Article Analysis
- Research Design Principles
- Statement of Research Problem
- Sample Selection
- Data Collection
- Results Analysis
- Statistical Analysis
- Discussion Guidelines
- Meta Analysis

Textbooks and References:

Sturdevant's Arts and Science of Operative Dentistry

Contemporary Fixed Prosthodontics - Stephen F. Rosenstiel

Fundamentals of Fixed Prosthodontics - Herbert T. Shillingbur

Cohen's Pathways of the Pulp – 11th Ed.

Course Level: (Semester and year)	Course Title:
Second year	Periodontics

Course Description:

This course is divided into two parts

1. Didactic:

Lectures in this course will elaborate on several important points regarding the assigned readings. These lectures will ease your understanding and complement your assigned reading.

2. Clinical component:

This course provides an introduction to the surgical approaches to the management of periodontal disease and expose the residents to the surgical therapeutic techniques, and development of skill in clinical practice.

Course Objectives

- Know basic sciences of periodontology
- Perform clinical periodontology
- Diagnose, formulate treatment planning of periodontal diseases
- Perform basic surgical procedures such as gingivectomy, flap procedure, and crown lengthening.
- Assess and evaluate the results of the performed therapy
- Recommend and supervise the maintenance phase therapy

Textbooks and References:

Handouts, required textbooks (Michael G. Newman, Henry H. Takei, Fermin A. Carranza Clinical Periodontology, 9th edition)

I - COURSE PHILOSOPHY

Periodontics is a major component of the AEGD Program. Proper endodontics and periodontics treatment is the foundation for restorative and prosthodontic treatment.

The Periodontics course is designed to update residents with changes in periodontal disease, classifications, microbial nature, and patient defense. In addition to the diagnostics and therapeutic procedures in the management of periodontal disease, surgically and non-surgically.

II – COURSE OUTLINE

1. Classifications of Periodontal Disease
2. Periodontal Examinations, Diagnosis, and Treatment Planning
3. Pathogenesis of Periodontal Disease
4. Microbiology of Periodontal Disease
5. Host Defence in Periodontal Disease
6. Periodontal Surgery
7. Mucogingival Surgery
8. Periodontal Suturing

III – COURSE OF SPECIFICS OBJECTIVES

1. CLASSIFICATION OF PERIODONTAL DISEASE

1.1 Outline the different classifications of periodontal diseases
1.2 Describe the terms used in classification of periodontal diseases
1.3 Describe the early onset of Periodontitis (EOP)
1.4 List the syndromic criteria in the early onset of periodontitis
1.5 Describe Localized prepubertal periodontitis
1.6 Differentiate between localized and generalized prepubertal periodontitis
1.7 Differentiate between localized juvenile and generalized juvenile periodontitis
1.8 State the recommendation of antibiotics in localized juvenile periodontitis
1.9 List the characteristics of disease similar to rapidly progressive periodontitis
1.10 Identify refractory periodontitis to rapidly progressive periodontitis
1.11 Describe necrotizing ulcerative periodontitis
1.12 State the predisposing factors of necrotizing ulcerative periodontitis
1.13 List the type of periodontitis associated with systemic diseases

1.14 Describe the changes in the classification system of periodontal diseases

1.15 State the common features in replacement of EOP with aggressive periodontitis

1.16 State the new classifications system of periodontal diseases

1.17 State the categories in addition to incidental attachment loss

1.18 Describe inter-dental attachment loss

1.19 List the new classification system of periodontal disease

1.20 List the factors of plaque induced in gingival diseases

1.21 State the type of non-plaque induced in gingival diseases

1.22 State the systemic conditions of gingival diseases

1.23 State the different types of necrotizing periodontal diseases

1.24 List the type of abscesses of the periodontium

1.25 State the categories of mucogingival deformities in new classification system of periodontal

1.26 List the types of occlusal trauma

2. PERIODONTAL EXAMINATION, DIAGNOSIS, AND TREATMENT PLANNING

2.1 Define the following terms of Inflammatory Periodontal disease: Gingivitis,

2.2 Periodontitis, and attachment loss.

2.3 State the Clinical manifestation of gingivitis

2.4 List of Periodontal examinations

- Plaque accumulation
- Bleeding on probing
- Probing pocket depths
- Gingival recession
- Furcation involvement
- Tooth mobility
- Alveolar bone
- Contributing factors

2.5 Describe each type of periodontal examinations

2.6 State the clinical indications of periodontitis

2.7 List the common signs with a combination of gingivitis of periodontitis

2.8 Identify plaque score use

2.9 Explain the calculation of bleeding score

2.10 Explain the oral hygiene measurements

2.11 Identify bleeding score use

2.12 List the other causes of tooth mobility in periodontal examination

2.13 State the symptoms of tooth mobility

2.14 Identify alveolar bone in periodontal examination

2.15 Interpret radiographic analysis of alveolar bone

2.16 State the local factors of mechanical plaque traps in periodontal examination

2.17 List of systemic contributing factors

2.18 State the different types of individual tooth prognosis

2.19 List the different types of treatment planning

2.20 Describe each type of periodontic treatment planning

2.21 State the following measures to eliminate or control plaque infection (cause – related to initial therapy):

3. PATHOGENESIS OF PERIODONTAL DISEASES

3.1 Identify periodontal disease initiation and progression

3.2 Describe the mechanisms of pathogenicity

3.3 Explain the host defense in the oral cavity

3.4 Describe the inflammatory responses in periodontal disease

3.5 Identify the different types of fluid components of the inflammatory response

3.6 List the cellular components of the inflammatory response

- Neurophils (PMN)
- Macrophages (Mac)

3.7 Explain the functions of macrophages

3.8 Describe the types of soluble effectors of the inflammatory response

- Complement

- Mediators of vascular permeability

3.9 Describe the chemical mediators of the inflammatory response

3.10 Define Cytokines

3.11 Differentiate between Interleokin – 1 (1L-1) and TNF

3.12 Describe the role of 1L-1 and TNF in host defense against bacterial plaque

3.13 Identify other types of Cytokines

3.14 Describe Immunological response in periodontal disease

3.15 Describe the different types of immunological mechanisms in periodontal disease: clonal expansion, humoral response, and cell-mediated response

3.16 Differentiate between humoral response and cell-mediated response of immunological mechanisms

3.17 Explain humoral immune response in periodontal disease

3.18 Explain cell-mediated immune response in periodontal disease

3.19 Describe the different interaction between bacteria and their products and inflammation and immunity

3.20 Describe the clinical and histopathological features of periodontal disease initiation and progression

3.21 Identify the different risk factors for periodontal disease progression

4. MICROBIOLOGY OF PERIODONTAL DISEASES

4.1 Define periodontal disease

4.2 List the primary etiologies of periodontal diseases: -

a. Microbial plaque
b. Host immune response

4.3 Describe microbial plaque challenge

4.4 Define the different types of infectious pathogens with disease: -

- Kock's postulates
- Specific plaque hypothesis
- Specific plaque hypothesis

4.5 Explain the ecological plaque hypothesis

4.6 Describe the evidence for primary role of bacteria in the etiologies of periodontal disease

4.7 Define dental plaque

4.8 Describe dental plaque as a biofilm

4.9 Define biofilm formation

4.10 Identify types of bacteria in the biofilm

4.11 List of biofilm development on a clean enamel surface

4.12 Identify the different factors affecting biofilm formation

4.13 List the objectives for defining periodontal pathogens

4.14 List the current suspected pathogens in gingivitis

4.15 List the objectives for defining periodontal pathogens

4.16 List the current suspected pathogens in periodontitis

4.17 Identify other periodontal pathogens with moderate evidence for disease

4.18 Describe microbiological diagnostic tests

4.19 Identify the effect of periodontal therapy on plaque microbiota

5. HOST DEFENCE IN PERIODONTAL DISEASE

5.1 List the different types of microorganisms responsible for periodontal disease

5.2 Describe the pathogenic bacterial products

5.3 Identify the host defense in the oral cavity

5.4 Explain the salivary peroxidase system

5.5 Describe the different types of inflammatory response in periodontal disease

5.6 Describe the fluid components of the inflammatory response in periodontal disease

5.7 List the cellular components of the inflammatory response in periodontal disease

5.8 Identify the soluble effectors in the inflammatory response

5.9 Differentiate between the classical pathway and alternative pathway

5.10 Describe the different types of cytokines in chemical mediators of the inflammatory response

5.11 Identify the role of IL-1 and TNF in host defense against bacterial plaque

5.12 List other types of Cytokines

5.13 Determine the different cells emigration and chemotaxis

5.14 List different types of chemotaxins

5.15 Describe the immunological response in periodontal disease

5.16 List the different types of immunological mechanisms

5.17 Explain the mechanisms of humoral immune response

5.18 Explain the immunological mechanisms of cell-mediated immune response

5.19 Determine the interactions between bacteria and their products and inflammation and immunity.

6. PERIODONTAL SURGERY

6.1 Identify the rationale for periodontal surgery

6.2 Identify the rationale for periodontal surgery

6.3 Learn the design of surgical versus non-surgical therapy

6.4 State the characteristics of surgical and non-surgical therapy

6.5 List and examine the parameters of surgical versus non-surgical therapy

6.6 Determine the results of surgical versus non-surgical therapy

6.7 Describe the objectives of periodontal surgery

6.8 List the indications and contraindications for periodontal surgery

6.9 Describe the types of periodontal surgery

6.10 Describe different types of pocket reduction surgeries

6.11 Outline and apply various periodontal flap designs

6.12 List the different types of incision design

6.13 List the different types of flap reflection: -

- Full thickness flap
- Partial – split thickness flap
- Combination flap

6.14 Define Gingivectomy

6.15 State the guidelines and technique of gingivectomy

6.16 6.16 Describe the indications and contraindications of gingivitis

6.17 Describe the advantages and disadvantages of gingivectomy

6.18 Define reposition flaps

6.19 Describe the different types of reposition flaps

6.20 List the objectives of subgingival curettage performed with a surgical

6.21 knife in excisional new attachment procedure (ENAP)

6.22 List the indications and contraindications of excisional new attachment procedure (ENAP)

6.23 State the techniques of ENAP

6.24 State the objectives of anterior curtain procedure in reposition flaps

6.25 List the indications and contraindications of anterior curtain procedure

6.26 State the techniques of anterior curtain procedure in reposition flaps

6.27 Describe modified widman flap

6.28 List the indications and contraindications in modified widman flap

6.29 State the technique in modified widman flap

6.30 Differentiate between open flap debridement and access flap

6.31 Differentiate between buccal and palatal incision in modified widman flap

6.32 Describe the advantages and disadvantages of anterior curtain procedure in reposition flap

6.33 Explain the procedure indicated in internal beveled gingivectomy

6.34 State the advantages and disadvantages in internal beveled gingivectomy

6.35 Describe distal wedge procedure in reposition flaps

6.36 State the indications and contraindications of distal wedge procedure

6.37 List the technique of distal wedge procedure in reposition flaps

6.38 State the advantages and disadvantages of distal wedge procedure

6.39 Recognize the appropriate integration of crown lengthening procedures in restorative treatment plan

6.40 List the various surgical techniques of crown lengthening

6.41 Identify the different types of excisional new attachment procedure (ENAP) in reposition flaps

6.42 Identify apically positioned flap

6.43 List the objectives of apically positioned flap

6.44 Describe the indications and contraindications of APF without osseous resection

6.45 List the techniques of apically positioned flap

6.46 Describe the anterior curtain procedure in reposition flaps

6.47 List the objectives of anterior curtain procedure in reposition flaps

6.48 Define and apply osseous resective surgical techniques

6.49 Describe the technique of apically positioned flap without osseous resection

7. MUCOGINGIVAL SURGERY

7.1 Describe the etiologies of gingival recession

7.2 Define the rationale for mucogingival surgery

7.3 State the problem of mucogingival recession

7.4 Identify the treatment of gingival recession

7.5 Describe the general principles of mucogingival surgery

7.6 List of pedicle soft tissue grafts of mucogingival surgery

7.7 State the indications of pedicle soft tissue graft

7.8 List the advantages and disadvantages of pedicle soft tissue grafts

7.9 Describe the indications of free gingival graft

7.10 List the advantages and disadvantages of free gingival graft

7.11 Describe the indications of subepithelial connective tissue graft

7.12 Identify the advantages and disadvantages of subepithelal connectives tissue graft

7.13 Describe the indications of guided tissue regeneration

7.14 Identify the advantages and disadvantages of guided tissue regeneration

7.15 List of post-surgical consideration

8. PERIODONTAL SUTURING

8.1 List the suturing materials used in periodontal surgery

8.2 Apply the various suturing techniques

8.3 List the different types of suturing techniques

- Flap surgeries
- Regeneration
- Mucogingival grafting
- Edentulous ridge/implant

8.4 List the indications and contraindications of periodontal regeneration

8.5 State the indications for each suturing technique

Course Title:	Course Level:(Semester and year)
Dental Implant	2nd year

Course Description:

This course is divided into two parts

A. Didactic (lecture)

Lectures in this course will elaborate on several important points associated with the assigned readings. These lectures will ease your understanding of and complement your assigned reading. The assigned readings will consist of

a. handouts

b. required textbooks

1. Contemporary Implant Dentistry (3rd Edition) by Carl E Misch

2. Principles and Practice of Implant Dentistry by Weiss and Weiss

B. Clinical component

This course provides an introduction to the surgical approaches to the implant placement and exposes the residents to the surgical techniques and development of skill in clinical practice.

Course Title:	Course Level:(Semester and year)
Dental Implant	2nd year

Course Objectives

At the completion of this course, the residents will be expected to demonstrate:

- Knowledge of basic sciences of implantology
- Knowledge of clinical implantology
- Clinical expertise in the diagnosis and formulate treatment planning for dental implant patient
- Perform basic surgical implant procedures
- Assess and evaluate the results of the performed therapy

Recommend and supervised

I. HISTORY OF DENTAL IMPLANTOLOGY

1. Describe the first types of dental implants used
2. Describe the evolution in dental implant designs that appeared during the "modern implantology"
3. Define subperiosteal implants and list their advantages and disadvantages.
4. Define fibro-osseointegration and list its advantages and disadvantages.
5. Define osseointegrated implants and list their advantages and disadvantages.
6. Describe the current state of dental implantology.
7. Define what a successful dental implant means.
8. Describe the possible etiologies (i.e., local and systemic) of implant failure.

II. BIOLOGIC ASPECTS OF DENTAL IMPLANTS: THE IMPLANT-BONE INTERFACE AND MECHANICAL ASPECTS OF DENTAL IMPLANTS

1. Describe the basic knowledge in bone biology and its importance to implant dentistry.
2. Describe the aspects of the interface between dental implants and the alveolar bone.
3. Describe the basic concepts of implant biomechanics.
4. Describe the clinical prosthetic aspects of endosseous implant use for edentulous and partially edentulous cases.
5. Describe the factors to be considered with regard to to immediate or early loading of dental implant.
6. Describe the important factors when considering single tooth implants in the posterior and anterior sextants.

Course Title:	Course Level:(Semester and year)
Dental Implant	2nd year

III. BIOLOGICAL ASPECTS OF DENTAL IMPLANTS: THE IMPLANT-SOFT TISSUE INTERFACE AND OTHER CLINICAL ASPECTS OF DENTAL IMPLANTOLOGY

1. List the various biologically compatible materials used for manufacturing dental implants.
2. Describe the clinical and histological aspects of the Peri-implant mucosa.
3. Contrast and compare the Peri-implant mucosa with the normal periodontium both clinically and histologically.
4. List the requirements to achieve Osseointegration with a high degree of predictability.
5. List the indications and contraindications for the replacement of missing teeth with dental implants. Include systemic and local factors that may influence the treatment outcome.
6. Describe the process of case selection and the diagnostic tools (i.e., clinical exam, diagnostic casts, and imaging) to be used by the team that will treat the implant patient.
7. Describe the benefits of implant dentistry for the fully edentulous and for the partially edentulous patients.
8. Describe the types of complications that may be expected.
9. Describe the importance of long term maintenance of dental implants.
10. Describe the steps in evaluating the health and stability of a dental implant.

IV. SURGICAL ASPECTS OF DENTAL IMPLANTS

1. Compare and contrast the general characteristics of “one-stage” versus “two stage” implant surgical approach.
2. Describe the details of a “Two-Stage Endosseous Implant Surgery Technique.” First stage: flap design and incision, flap elevation, implant placement steps, closure of the flap, and postoperative care. Second stage: Objectives, flap design and incisions, flap elevation and apical displacement, and postoperative care.
3. Describe the details of a “One-Stage Endosseous Implant Surgery Technique:” flap design and incisions, placement of implant, closure of the flap, and postoperative care.

V. ADVANCED IMPLANT SURGERY AND BONE GRAFTING TECHNIQUES

1. Define Guided Bone Regeneration (GBR).
2. List the requirements for bone regeneration.
3. Define Barrier Membranes. List the ideal properties of a barrier membrane.

4. List the materials (nonresorbable and resorbable barrier membranes) used in GBR.
5. Define: Osteoconduction, Osteoinduction, and Osteogenesis.
6. Define: Alloplast, Xenograft, Allograft, and Autograft.
7. Describe the technique named "Distraction Osteogenesis."
8. Describe the technique named "Sinus Elevation."

VI. DIAGNOSIS AND TREATMENT OF PERI-IMPLANT COMPLICATIONS

1. Describe the incidence of peri-implant disease.
2. Describe the two main etiologic factors responsible for bone loss around implants.
3. Describe the microbiota associated with healthy and diseased implants.
4. Define peri-implantitis.
5. Compare and contrast the main characteristics of Periodontitis and Peri-implantitis.
6. Describe the technical implant failures that may lead to implant fractures.
7. Describe the possible esthetic complications that may happen when working in the esthetic zone.
8. Describe how to diagnose the peri-implant.
9. Describe the treatment modalities.

VII. IMPLANT MAINTENANCE THERAPY

1. Describe the clinical features of a successful implant.
2. Describe the routine radiographic analysis used for implants.
3. Describe methods used to evaluate mobility of implants.
4. Describe the appropriate implant maintenance techniques for instrumentation of component surfaces.
5. List the oral hygiene devices appropriate for dental implant home care.

Course Title:	Course Level: (Semester and year)
Pedodontics	First Year

Course Description:

This course is divided into two parts

1. Didactic:

Lectures in this course will elaborate on several important points related to the assigned readings. These lectures will ease your understanding and will be complementary to your assigned reading.

2. Clinical component:

This course introduces the surgical approaches on the management of periodontal disease and provides exposure to the residents regarding the surgical therapeutic techniques, and aims at developing their skills in clinical practice.

Course Objectives

- Gain knowledge on basic sciences of periodontology
- perform clinical periodontology
- diagnose and formulate treatment planning of periodontal diseases
- Perform basic surgical procedures such as gingivectomy, flap procedure, and crown lengthening
- Assess and evaluate the results of the performed therapy
- Recommend and supervise the maintenance phase therapy

Course Title:	Course Level: (Semester and year)
Basic Comprehensive Patient Care	First Year

Course Description:

Comprehensive Dental Treatment Case Presentation Seminar is a weekly seminar intended forall R1 and R2 Residents enrolled at PAADI and the Chairmen of the different PAADI Academic Department. The course is designed to teach the principles of comprehensive dental care, comprehensive preventive care, comprehensive case documentation, treatment planning principles, comprehensive examination, and comprehensive diagnosis.

The course attempts to integrate all the dental specialties into the patient care to improve the treatment quality and reduce overlapping, complications and treatment errors.

Course Objectives

- Principles of comprehensive treatment planning
- The R4 examination and diagnosis system
- Operational diagnosis
- Principles of case documentation
- Preventive Phase
- Provisionalization Phase
- Restorative and Endodontic Phase
- Prosthodontic Phase
- Surgical Intervention Phase
- Recall and Follow Up Phase

Course Title:	Course Level: (Semester and year)
Clinical Restorative DENTISTRY	Second year

Course Description:

This course is mainly clinical. The goal of this course is to provide valuable practice to the advanced esthetic and restorative technique.

Course Objectives

1. Perform excellent clinical work with excellent theoretical knowledge.
2. Improve clinical skills especially with a new technique and materials.

Textbooks and References:

Restorative Dentistry by A. Damien Walmsley.

Course Title:	Course Level: (Semester and year)
Clinical Prosthodontics	Second year

Course Description:

Mainly clinical course. The goal is to provide valuable practice in clinical prosthodontic dentistry.

Course Objectives

1. Diagnose and treatment plan simple to complex multidisciplinary comprehensive cases.
2. Manage and complete Prosthodontic treatment from simple units to full treatment with FPDs. Provide coronal-radicular restoration of endodontically treated teeth.
3. Manage and complete the implant prosthodontic treatment.

Textbooks and References:

Contemporary Fixed Prosthodontics by Stephen F. Rosenstiel

1. Fundamentals of Fixed Prosthodontics by Herbert T. Shillingburg

Course Title:	Course Level: (Semester and year)
CLINICAL ENDO	Second year

Course Description:

Mainly clinical course. The goal is to provide valuable practice in clinical prosthodontic dentistry.

Course Objectives

1. Diagnosis and treatment planning for simple to complex multidisciplinary comprehensive cases.
2. Manage and complete Prosthodontic treatment from simple units to full treatment with FPDs. Provide coronal-radicular restoration of endodontically treated teeth.
3. Manage and complete the implant Prosthodontic treatment.

Course Title:	Course Level: (Semester and year)
Intensive CadCam Learning	First year

Course Description:

This course is mainly clinical. The goal of this course is to provide valuable practice to the advanced esthetic and restorative technique.

Course Objectives

1. Perform excellent clinical work with excellent theoretical knowledge.
2. Improve clinical skills especially with a new technique and materials.
3. To achieve a high level of proficiency effectively by taking the beginner's CAD/CAM courses. Acquire a broad range of restorative skills for application in daily clinical practice.
4. Understand the clinical applications, benefits and limitations of the CAD/CAM systems.
5. Understand the design and fabrication of different restorations.
6. Learn the technical skills required to use CAD/CAM technology.
7. Acquire and implement proper techniques for tooth preparation in multiple restorations.

Textbooks and References:

Restorative Dentistry by A. Damien Walmsley.

Course Title:	Course Level: (Semester and year)
ADVANCED COMPREHENSIVE PATIENT CARE	2nd year

Course Description:

Comprehensive Dental Treatment Case Presentation Seminar is a weekly seminar for all R1 and R2 Residents enrolled at PAADI and the Chairmen of the different PAADI Academic Department. The course is designed to teach the principles of comprehensive dental care, comprehensive preventive care, and comprehensive case documentation, treatment planning principles, comprehensive examination, and comprehensive diagnosis.

The course attempts to integrate all the dental specialties into the patient care to improve the treatment quality and reduce overlapping, complications, and treatment errors.

Course Objectives

- Principles of comprehensive treatment planning
- The R4 examination and diagnosis system
- Operational diagnosis
- Principles of case documentation
- Preventive Phase
- Provisionalization Phase
- Restorative and Endodontic Phase
- Prosthodontic Phase
- Surgical Intervention Phase
- Recall and Follow Up Phase

Course Title:	Course Level: (Semester and year)
BASIC RESEARCH	2nd year

Course Description:

Comprehensive Dental Treatment Case Presentation Seminar is a weekly seminar for all R1 and R2 Residents enrolled at PAADI and the Chairmen of the different PAADI Academic Department. The course is designed to teach the principles of comprehensive dental care, comprehensive preventive care, and comprehensive case documentation, treatment planning principles, comprehensive examination, and comprehensive diagnosis.

The course attempts to integrate all the dental specialties into the patient care to improve the treatment quality and reduce overlapping, complications, and treatment errors.

Course Objectives

- Principles of comprehensive treatment planning
- The R4 examination and diagnosis system
- Operational diagnosis
- Principles of case documentation
- Preventive Phase
- Provisionalization Phase
- Restorative and Endodontic Phase
- Prosthodontic Phase
- Surgical Intervention Phase
- Recall and Follow Up Phase

Appendix-C

Universal Topics

Intent:

These are high-value interdisciplinary topics of utmost importance to the trainee. The reason for delivering the topics centrally is to ensure that every trainee receives high-quality teaching and develops essential core knowledge. These topics are common to all specialties.

The topics included here meet one or more of the following criteria:

- Impactful: these are topics that are common or life-threatening
- Interdisciplinary: topics that transcend a single discipline
- Orphan: topics that are poorly represented in the undergraduate curriculum
- Practical: topics that trainees will encounter in hospital practice

Development and Delivery:

Core topics for the PG curriculum will be developed and delivered centrally by the Commission through an e-learning platform. A set of preliminary learning outcomes for each topic will be developed. Content experts, in collaboration with the central team, may modify the learning outcomes.

These topics will be didactic in nature, with a focus on practical aspects of care. These topics will be more content-heavy than workshops and other face-to-face interactive sessions planned.

The suggested duration of each topic is 1.30 hours.

Assessment: The topics will be delivered in a modular fashion. At the end of each learning unit, an online formative assessment will be conducted. After completion of all topics, a combined summative assessment in the form of context-rich MCQs will be conducted. All trainees must attain minimum competency in the summative assessment. Alternatively, these topics can be assessed in a summative manner, along with a specialty examination.

Some ideas may include case studies, high-quality images, worked examples of prescribing drugs in disease states, and internet resources.

Module 1: Introduction

1. Safe drug prescription
2. Hospital acquired infections
3. Sepsis; SIRS; DIVC
4. Antibiotic stewardship
5. Blood transfusion

Safe drug prescription: At the end of the learning unit, you should be able to

a) Recognize importance of prescribing safe drugs in healthcare
b) Describe various adverse drug reactions with examples of commonly prescribed drugs that can cause such reactions.
c) Apply principles of drug-drug interactions, drug-disease interactions, and drug-food interactions in common situations
d) Apply principles of prescribing drugs in special situations such as renal failure and liver failure
e) Apply principles of prescribing drugs to the elderly, pediatric age group, and in pregnant and lactating mothers.
f) Promote evidence-based cost-effective prescription of drugs
g) Discuss ethical and legal framework governing safe-drug prescription in Saudi Arabia

Hospital Acquired Infections (HAI): At the end of the learning unit, you should be able to

a) Discuss the epidemiology of HAI with special reference to HAI in Saudi Arabia
b) Recognize HAI as one of the major emerging threats in healthcare
c) Identify the common sources and setups of HAI
d) Describe the risk factors of common HAIs such as ventilator-associated pneumonia, MRSA, CLABSI, and Vancomycin-resistant Enterococcus (VRE)
e) Identify the role of healthcare workers in the prevention of HAI
f) Determine appropriate pharmacological (e.g., selected antibiotic) and non-pharmacological (e.g., removal of indwelling catheter) measures in the treatment of HAI
g) Propose a plan to prevent HAI in the workplace
h) Sepsis, SIRS, and DIVC: At the end of the learning unit, you should be able to explain the pathogenesis of sepsis, SIRS, and DIVC
i) Identify patient-related and non-patient-related predisposing factors of sepsis, SIRS, and DIVC
j) Recognize a patient at risk of developing sepsis, SIRS, and DIVC
k) Describe the complications of sepsis, SIRS, and DIVC

l) Apply the principles of management of patients with sepsis, SIRS, and DIVC

m) Describe the prognosis of sepsis, SIRS, and DIVC

Antibiotic Stewardship: At the end of the learning unit, you should be able to:

a) Recognize antibiotic resistance as one of the most pressing public health threats globally

b) Describe the mechanism of antibiotic resistance

c) Determine the appropriate and inappropriate use of antibiotics

d) Develop a plan for safe and proper antibiotic usage plan including right indications, duration, types of antibiotics, and discontinuation.

e) Recognize the guidelines in the prevention of antibiotic resistance

Blood Transfusion: At the end of the learning unit, you should be able to

a) Review the different components of blood products available for transfusion

b) Recognize the indications and contraindications of blood product transfusion

c) Discuss the benefits, risks, and alternative to transfusion

d) Undertake consent for specific blood product transfusion

e) Perform steps necessary for safe transfusion

f) Develop understanding of special precautions and procedures necessary during massive transfusions

g) Recognize transfusion associated reactions and provide immediate management

Module 2: Cancer

1. Principles of cancer management
2. Side effects of chemotherapy and radiation therapy
3. Oncologic emergencies
4. Cancer prevention
5. Surveillance follow-up of cancer patients

Principles of cancer management: At the end of the learning unit, you should be able to:

a) Discuss the basic principles of staging and grading of cancers
b) Enumerate the basic principles (e.g., indications, mechanisms, and types) of:
    a. Cancer surgery
    b. Chemotherapy
    c. Radiotherapy
    d. Immunotherapy
    e. Hormone therapy

Side effects of chemotherapy and radiation therapy: At the end of the learning unit, you should be able to:

a) Describe important side effects (e.g., frequent or life-threatening) of common chemotherapy drugs
b) Explain principles of monitoring side-effects in a patient undergoing chemotherapy
c) Describe pharmacological and non-pharmacological measures available to ameliorate the side effects of commonly prescribed chemotherapy drugs
d) Describe important (e.g., common and life-threatening) side effects of radiation therapy
e) Describe pharmacological and non-pharmacological measures available to ameliorate the side effects of radiotherapy

Oncologic Emergencies: At the end of the learning unit, you should be able to:

a) Enumerate important oncologic emergencies encountered both in hospital and ambulatory settings
b) Discuss the pathogenesis of important oncologic emergencies
c) Recognize the oncologic emergencies
d) Institute immediate measures when treating a patient with oncologic emergencies
e) Counsel the patients in anticipatory manner to recognize and prevent oncologic emergencies

Cancer Prevention: At the end of the learning unit, you should be able to:

a) Conclude that many major cancers are preventable
b) Identify that smoking prevention and life-style modifications are major preventable measures
c) Recognize cancers that are preventable
d) Discuss the major cancer prevention strategies at the individual as well as national level
e) Counsel patients and families in proactive manner regarding cancer prevention including screening

Surveillance and follow-up of cancer patients: At the end of the learning unit, you should be able to:

a) Describe the principles of surveillance and follow-up of patients with cancers
b) Enumerate the surveillance and follow-up plan for common forms of cancer
c) Describe the role of primary care physicians, family physicians, and other similar healthcare professionals in the surveillance and follow-up of cancer patients.
d) Liaise with oncologists to provide surveillance and follow-up for patients with cancer

Module 3: Diabetes and Metabolic Disorders

1. Recognition and management of diabetic emergencies
2. Management of diabetic complications
3. Comorbidities of obesity
4. Abnormal ECG

Recognition and Management of Diabetic Emergencies: At the end of the learning unit, you should be able to:

a) Describe pathogenesis of common diabetic emergencies including their complications

b) Identify risk factors and groups of patients vulnerable to such emergencies
c) Recognize a diabetic emergency patient
d) Institute immediate management
e) Refer the patient to appropriate next level of care
f) Counsel patient and families to prevent such emergencies

Management of Diabetic Complications: At the end of the learning unit, you should be able to:

a) Describe the pathogenesis of important complications of Type 2 diabetes mellitus
b) Screen patients for such complications
c) Provide preventive measures for such complications
d) Treat such complications
e) Counsel patients and families with special emphasis on prevention

Comorbidities of Obesity: At the end of the learning unit, you should be able to:

a) Screen patients for presence of common and important comorbidities of obesity
b) Manage obesity related comorbidities
c) Provide dietary and lifestyle advice for prevention and management of obesity

Abnormal ECG: At the end of the learning unit, you should be able to

a) Recognize common and important ECG abnormalities
b) Institute immediate management, if necessary

Module 4: Medical and Surgical Emergencies

1. Management of acute chest pain
2. Management of acute breathlessness
3. Management of altered sensorium

4. Management of hypotension and hypertension
5. Management of upper GI bleeding
6. Management of lower GI bleeding

For all the above, the following learning outcomes apply.

At the end of the Learning Unit, you should be able to:

a) Triage and categorize patients
b) Identify patients who need prompt medical and surgical attention
c) Generate preliminary diagnoses based history and physical examination
d) Order and interpret urgent investigations
e) Provide appropriate immediate management to patients
f) Refer the patients to next level of care, if needed

Module 5: Acute Care

1. Pre-operative assessment
2. Post-operative care
3. Acute pain management
4. Chronic pain management
5. Management of fluid in the hospitalized patient
6. Management of electrolyte imbalances

Pre-operative assessment: At the end of the learning unit, you should be able to

a) Describe the basic principles of pre-operative assessment
b) Perform pre-operative assessment in uncomplicated patient with special emphasis on
c) General health assessment
d) Cardiorespiratory assessment
e) Medications and medical device assessment
f) Drug allergy

g) Pain relief needs
h) Categorize patients according to risks

Post-operative care: At the end of the learning unit, you should be able to:

a) Devise a postoperative care plan including monitoring of vitals, pain management, fluid management, medications, and laboratory investigations
b) Transfer the patients properly to appropriate facilities
c) Describe the process of post-operative recovery to the patient
d) Identify common post-operative complications
e) Monitor patients for possible post-operative complications
f) Institute immediate management for post-operative complications

Acute Pain Management: At the end of the learning unit, you should be able to:

a) Review the physiological basis of pain perception
b) Proactively identify patients who might be experiencing acute pain
c) Assess a patient with acute pain
d) Apply various pharmacological and non-pharmacological modalities available for acute pain management
e) Provide adequate pain relief for uncomplicated patients with acute pain
f) Identify and refer patients with acute pain who may benefit from specialized pain services

Chronic Pain Management: At the end of the learning unit, you should be able to:

a) Review bio-psychosocial and physiological basis of chronic pain perception
b) Discuss various pharmacological and non-pharmacological options available for chronic pain management
c) Provide adequate pain relief for uncomplicated patients with chronic pain
d) Identify and refer patients with chronic pain who may benefit from specialized pain services

Management of Fluid in Hospitalized Patients: At the end of the Learning Unit, you should be able to:

a) Review physiological basis of water balance in the body
b) Assess a patient for his/her hydration status
c) Recognize a patient with over and under hydration
d) Order fluid therapy (oral as well as intravenous) for a hospitalized patient
e) Monitor fluid status and response to therapy through history, physical examination, and selected laboratory investigations

Management of Acid-Base Electrolyte Imbalances: At the end of the learning unit, you should be able to:

a) Review physiological basis of electrolyte and acid-base balance in the body
b) Identify diseases and conditions that are likely to cause or be associated with acid/base and electrolyte imbalances.
c) Correct electrolyte and acid-base imbalances
d) Perform careful calculations, checks, and other safety measures while correcting the acid-base and electrolyte imbalances.
e) Monitor response to therapy through history, physical examination, and selected laboratory investigations

Module 6: Frail Elderly

1. Assessment of frail elderly
2. Mini-mental state examination
3. Prescribing drugs for the elderly
4. Care for the elderly

Assessment of Frail Elderly: At the end of the learning unit, you should be able to

a) Enumerate the differences and similarities between comprehensive assessment for the elderly and assessment for other patients

b) Perform comprehensive assessment by cooperating with other members of the health care team, of a frail elderly with special emphasis on social factors, functional status, quality of life, diet and nutrition, and medication history.
c) Develop a problem list based on the assessment of the elderly

Mini-Mental State Examination: At the end of the learning unit, you should be able to

a) Review the appropriate usages, advantages, and potential pitfalls of Mini-MSE
b) Identify patients suitable for mini-MSE
c) Screen patients for cognitive impairment through mini-MSE

Prescribing Drugs for the Elderly: At the end of the earning Unit, you should be able to

a) Discuss the principles of prescribing for the elderly
b) Recognize polypharmacy, prescribing cascade, inappropriate dosages, inappropriate drugs, and deliberate drug exclusion as major causes of morbidity in the elderly
c) Describe physiological and functional declines in the elderly that contribute to increased drug-related adverse events
d) Discuss drug-drug interactions and drug-disease interactions among the elderly
e) Gain familiarity with Beers criteria
f) Develop rational prescribing habit for the elderly
g) Counsel elderly patient and family on the safe medication usage

Care of the Elderly: At the end of the learning unit, you should be able to:

a) Describe the factors that need to be considered while planning care for the elderly
b) Recognize the needs and well-being of caregivers
c) Identify the local and community resources available in the care of the elderly

d) Develop, with inputs from other healthcare professionals, individualized care plan for elderly patients

Module 7: Ethics and Healthcare

1. Occupational hazards of HCW
2. Evidence based approach to smoking cessation
3. Patient advocacy
4. Ethical issues: transplantation/organ harvesting; withdrawal of care
5. Ethical issues: treatment refusal; patient autonomy
6. Role of doctors in death and dying

Occupation hazards of health care workers (HCW): At the end of the learning unit, you should be able to:

a) Recognize common sources and risk factors of occupational hazards among the HCW
b) Describe common occupational hazards in the workplace
c) Develop familiarity with legal and regulatory frameworks governing occupational hazards among the HCW
d) Develop a proactive attitude to promote workplace safety
e) Protect yourself and colleagues against potential occupational hazards in the workplace

Evidence-based Approach to Smoking Cessation: At the end of the learning unit, you should be able to:

a) Describe the epidemiology of smoking and tobacco usages in Saudi Arabia
b) Review the effects of smoking on the smoker and family members
c) Effectively use pharmacologic and non-pharmacologic measures to treat tobacco usage and dependence
d) Effectively use pharmacologic and non-pharmacologic measures to treat tobacco use and dependence among special population groups such as pregnant women, adolescents, and patients with psychiatric disorders

Patient Advocacy: At the end of the learning unit, you should be able to

a) Define patient advocacy
b) Recognize patient advocacy as a core value governing medical practice
c) Describe the role of patient advocates in the care of the patients
d) Develop a positive attitude toward patient advocacy
e) Be a patient advocate in conflicting situations
f) Be familiar with local and national patient advocacy groups

Ethical issues: transplantation/organ harvesting; withdrawal of care: At the end of the learning unit, you should be able to:

a) Apply key ethical and religious principles governing organ transplantation and withdrawal of care
b) Be familiar with the legal and regulatory guidelines regarding organ transplantation and withdrawal of care
c) Counsel patients and families in the light of applicable ethical and religious principles
d) Guide patients and families to make informed decision

Ethical issues: treatment refusal; patient autonomy: At the end of the learning unit, you should be able to:

a) Predict situations where a patient or family is likely to decline prescribed treatment
b) Describe the concept of "rational adults" in the context of patient autonomy and treatment refusal.
c) Analyze key ethical, moral, and regulatory dilemmas in treatment refusal
d) Recognize the importance of patient autonomy in the decision making process
e) Counsel patients and families declining medical treatment in the light of best interest of patients

Role of Doctors in Death and Dying: At the end of the learning unit, you should be able to:

a) Recognize the important role a doctor can play during a dying process

b) Provide emotional as well as physical care to a dying patient and family
c) Provide appropriate pain management to a dying patient

Identify suitable patients and refer patient to palliative care services

Appendix-D

Structure Oral Exam (SOE)

The oral examination is based on clinical cases presented briefly in a well-structured manner. It is usually administered during the last week of residency (R2) with its corresponding criteria. The exact time and location are subject to change. The resident will prepare pre-acquired comprehensive cases and submit the case list prior to the examination. A panel of examiners from the PAADI Committee will examine each resident based on the cases presented, but may also use cases to segue into related topics. Residents should be well-informed and familiar with their own cases and should have conducted sufficient study to develop a sound general knowledge base.

The purpose of the oral examination is to evaluate the residents' ability to present clinical knowledge in a well-organized, concise, and convincing manner. It allows the examiners to evaluate the resident's skill in developing and narrowing down a differential diagnosis. It is a way for the examiner to assess the ability to integrate the resident's knowledge into clinical situations. Good presentation skills are a hallmark of a good clinician and demonstrate a high level of understanding and confidence.

STRUCTURE OF THE EXAMINATION:

1. Each student will have an oral examination with a panel of AEGD Examiner.
2. The resident may bring a copy of their case list and no other notes or materials to the oral examination.
3. The official examiner asks the resident to make a brief presentation on a case, followed by a question and answer period. The question and answer period will focus on the differential diagnosis, diagnostic evaluation,

scientific basis, case documentation, treatment options, and final treatment rendered.

PURPOSE:

1. To evaluate each resident's ability to present in an organized and clear fashion of a selected required comprehensive case based on the residency level assigned.
2. To evaluate each resident's ability to understand and discuss the comprehensive cases that they have handled during the specified residency period
3. To test the reasoning skills of the residents and their confidence in the treatment that they had rendered.

PREREQUISITE FOR STRUCTURE ORAL EXAMINATION

R1:

Completion of the following:

- 3 comprehensive cases
- Attendance and participation in literature review, topic, and case presentation session
- Completion of minimum clinical requirement for R1

R2:

Completion of the following:

- 5 comprehensive cases
- Attendance and participation in literature review, topic, and case presentation session
- Completion of minimum clinical requirement for R2

ORGANIZATION OF CASE LISTS:

1. Each resident will prepare a well-documented case presentation for approved specified comprehensive cases based on their residency level requirements in a specific format.
2. A comprehensive case presentation should be submitted in a soft copy saved on a USB stick for at least 2 weeks prior to the set schedule for testing in preparation for the oral examination.

GRADING

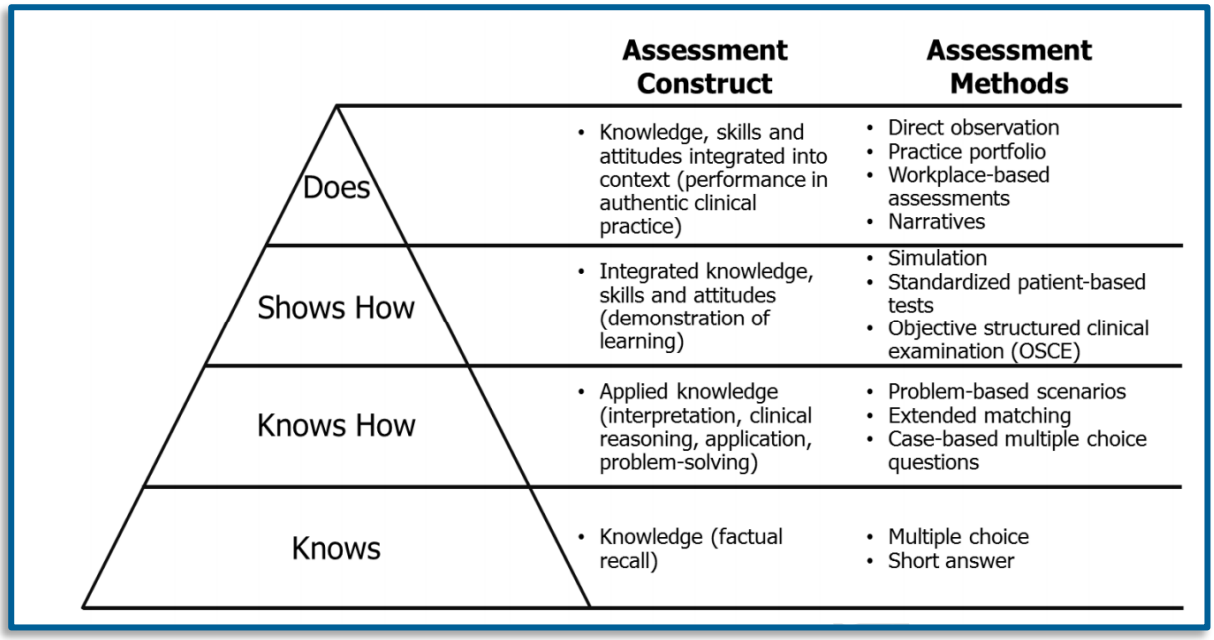
1. The oral examination will comprise 50% of the case presentation, and 50% will be based on the question and answer from the assigned official examiner panelist.

Structure Oral Exam Clinical Case Presentation Promotional Exam	
Residency Level	
R2	5 Comprehensive Clinical Cases from varying levels of complexity as required. Comprehensive clinical case for medically compromised adult/child diagnosis and treatment plan and full documentation of finished treatment

Appendix-F

Miller Pyramid Assessment

Miller's Pyramid of Assessment provides a framework for assessing the trainees' clinical competences which functions as a road map for the trainers to select the assessment methods to target different clinical competencies including "knows," "knows how," "shows how," and "does" (2).



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Appendix-E

Glossary

Glossary	
Blueprint	Description correlating educational objectives with assessment contents. For example, test blueprint defines the proportion of test questions allocated to each learning domain and/or content.
Competency	Capability to function within a defined professional role that implies entrustment of a trainee by graduation of the program with the required knowledge, skills, and attitude needed to practice unsupervised.

Glossary	
Specialty Core Content (skills, knowledge, and professional attitude)	A specific knowledge or skill or professional attitude that is specific and integral to the given specialty.
Formative assessment	An assessment that is used to inform the trainer and learner of what has been taught and learned, respectively, for the purpose of improving learning. Typically, the results of formative assessment are communicated through feedback to the learner. Formative assessments are not intended to make judgments or decisions (though it can be as a secondary gain).
Mastery	Exceeding the minimum level of competency to the proficient level of performance, indicating rich experience with possession of great knowledge, skills, and attitude.
Portfolio	A collection of evidence of progression toward competency. It may include both constructed components (defined by mandatory continuous assessment tools in curriculum) and unconstructed components (selected by the learner).
Summative assessment	An assessment that describes the composite performance of the development of a learner at a particular point in time and is used to inform judgment and make decisions about the level of learning and certification.
Universal Topic	A knowledge, skills, or professional behavior that is not specific to the given specialty but universal for the general practice of a given healthcare profession.

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A. Trainee Support

Guidelines for Mentor:

The mentor is an assigned faculty supervisor responsible for the professional development of residents under his/her responsibility. Mentoring is the process by which a mentor provides support to the residents. A mentee is a resident under the supervision of a mentor.

The needs: Post-graduate residency training is a formal academic program for residents to develop their full potential as future specialists. This is potentially the last substantial training program before they become an independent specialist. However, unlike the undergraduate program with a well-defined structure, residency training is inherently less organized. Residents are expected to be in a clinical setting, delivering patient care. They are rotated through multiple sites and sub-specialties.

The design of the residency program, while necessary for good clinical exposure, also lacks the feature to develop a long-term professional relationship with a faculty member. Residents may feel lost without proper

guidance. Moreover, without a long-term longitudinal relationship, it is extremely difficult to identify a struggling resident. They also struggle to develop professional identity with the home program, especially when they are posted in other disciplines for a long duration.

Residents are expected to maintain a logbook, a complete mini-CEX, and a DOPS. This requires a robust and structured monitoring system with clear accountability and defined responsibility.

Nature of Relationship: Mentorship is a formal, yet friendly relationship. This is a partnership between the mentor and the resident (i.e., the mentee). Residents are expected to take the mentoring opportunity seriously and help the mentors achieve the desired outcomes. The mentor should receive a copy of any adversarial report by other faculty members about the resident.

Goals:

- Guide residents toward personal and professional development through continuous monitoring of progress
- Early identification of struggling residents as well as high achievers
- Early detection of residents who are at risk of emotional and psychological disturbance
- Provide career guidance

Roles of the Mentor

The primary role of the mentor is to nurture a long-term professional relationship with the assigned residents. The mentor is expected to provide an "academic home" for the residents so that they can feel comfortable in sharing their experiences, expressing their concerns, and clarifying issues in a non-threatening environment. The mentor is expected to keep sensitive information about the residents in confidence.

*SCFHS guidelines for mentoring

The mentor is also expected to make appropriate and early referral to the Program Director or Head of the Department if he or she determines that a

problem would require expertise or resources that are beyond their capacity. Instances that necessitate such a referral might include the following:

- Serious academic problems
- Progressive deterioration of academic performance
- Potential mental or psychological issues
- Personal problems interfering with academic duties
- Professional misconduct, etc.

However, the following are NOT expected roles of a mentor:

- Providing extra tutorials, lectures, or clinical sessions
- Providing counseling for serious mental and psychological problems
- Being involved in residents' personal matters
- Providing financial or other material support

Roles of the Resident:

- Submit résumé at the start of the relationship
- Provide mentors with medium (1–3 years) and long-term (3–7 years) goals
- Takes primary responsibility in maintaining the relationship
- Schedule monthly meeting with mentor in a timely manner.
- Recognize self-learning as an essential element of residency training
- Report any major events to the mentor in a timely manner

Who can be a mentor?

Any faculty member, consultant grade, or above within the residency program can be a mentor. No special training is required.

Number of residents per mentor

As a guideline, each mentor should not have more than four to six residents. As much as possible, residents should come from all years of training. This creates an opportunity for senior residents to guide junior residents.

Frequency and duration of engagement

The recommended minimum frequency is once every four weeks. Each meeting might take thirty minutes to one hour. It is also expected that once assigned, the mentor should continue with the same resident preferably for the entire duration of the training program, or at least for one or two years.

Mandatory reporting to Program Director or Head of the Department:

- Consecutive absence from three scheduled meetings without any valid reasons
- Unprofessional conduct
- Consistent underperformance despite counseling
- Serious psychological, emotional, or health problems that may potentially cause unsafe patient care
- Any other serious concerns flagged by the mentor

ACKNOWLEDGEMENT

We would like to express our deepest gratitude to the great and tireless effort of Prince Abdulrahman Advanced Dental Institute (PAADI) in establishing the Advanced Education in General Dentistry program which was made possible by the commitment and professionalism of the working committee bodies.

With the unending support and cooperation of the Saudi Commission for Health Specialties, the granting of approval of the Curriculum of Advanced Education in General Dentistry is a milestone in the Dentistry Community.