البورد الكويتي لعلاج عصب الأسنان

KUWAIT BOARD OF ENDODONTICS

2024-2025

Handbook

Faculty of Dentistry

معهد الكويت للاختصاصات الطبية

Kuwait Institute for Medical Specialization

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Endodontics is the branch of dentistry which is concerned with the morphology, physiology, and pathology of the human dental pulp and periradicular tissues. Endodontic study and practice encompasses the basic clinical sciences including biology of the normal pulp, the etiology, diagnosis, prevention and treatment of diseases and injuries to the pulp and associated peri-radicular conditions.

Mission

The mission of Kuwait Board of Endodontics (KBE) is to provide exceptional postgraduate training that fosters clinical excellence, research innovation, and compassionate patient care. We aim to equip future endodontists with advanced knowledge and skills in the diagnosis, prevention, and treatment of diseases of the dental pulp and surrounding tissues, while emphasizing a commitment to lifelong learning, ethical practice, and community service.

Vision

Our vision is to be a leader in endodontic education, advancing the specialty through innovative training and research. We strive to cultivate a new generation of endodontists who will set the standard for clinical practice, contribute to scientific advancements in dental health, and enhance patient outcomes through evidence-based care.

Aims

Clinical Excellence: To train residents in cutting-edge endodontic techniques and technologies, enabling them to deliver the highest standard of patient care.
Research and Innovation: To foster a strong foundation in research methodology and encourage contributions to the advancement of Endodontology.
Leadership and Advocacy: To develop leadership skills in our residents, empowering them to advocate for patient care, oral health policy, and the advancement of the endodontic profession.
Ethics and Professionalism: To instill a deep understanding of ethical principles and professional conduct in all aspects of clinical and academic practice.
Lifelong Learning: To inspire continuous professional development and learning, ensuring graduates stay current with the evolving field of endodontics.

Values

Excellence: We are dedicated to maintaining the highest standards in clinical training, research, and patient care.
Integrity: We uphold ethical practices, honesty, and transparency in all professional activities.
Compassion: We emphasize empathetic, patient-centered care that respects the dignity and needs of every individual.
Collaboration: We foster a collaborative learning environment that promotes teamwork among faculty, residents, and interdisciplinary specialists.
Innovation: We encourage creativity and the application of the latest technologies and techniques in endodontic therapies and research.
Service: We are committed to serving our local and global communities by improving access to high-quality endodontic care and advancing public oral health.

Faculty

KBE is dedicated to creating a sustainable teaching and learning environment. Faculty members are expected to participate in regular calibration sessions to ensure consistent teaching methods. They are also required to attend faculty meetings and regularly engage in Faculty Development courses offered by KIMS.

Samhan Alajmi

Program Director

Dr. Samhan Alajmi received his BDS from Dundee University in Scotland in 2008. He had the membership of faculty of dentistry from the Royal College of Ireland in 2010. In 2014, he completed his Endodontic residency and Master degree from The University of Pennsylvania. Dr. Alajmi completed a fellowship in Dental Implant from Tufts University in 2015. He also became a diplomate from the American Board of Endodontics in 2015.

Abdullah Alkandari

Assistant Program Director

Dr. Alkandari earned his BDS from the University of Dundee in 2009. He then completed the Membership of the Faculty of Dentistry (MFD) from the Royal College of Surgeons in Ireland in 2012.

Afterwards, Dr. Alkandari obtained his Endodontic specialty certificate from the University of Southern California in 2014 and received his MS degree in Health Profession Education from Loma Linda University in 2015.

Dr. Alkandari became a Diplomate of the American Board of Endodontics in 2016.

Fahad Alzoubi

Chair of Faculty of Dentistry

Faculty Member

Dr. Alzoubi earned his BDS from The University of Manchester in 2008 and became a Member of the Faculty of Dentistry, Royal College of Surgeons in Ireland in 2010. He completed the MClinDent Endodontic program at King's College London in 2014 and gained Membership in Endodontics from the Royal College of Surgeons of Edinburgh. In 2020, he became a Fellow of the Royal College of Surgeons of Edinburgh, and in 2023, a fellow of the International Association of Dental Traumatology. He is the Chair of the Faculty of Dentistry at Kuwait Institute for Medical Specializations and continues part-time private practice as a consultant endodontist.

Ayeshah Tifooni

Head of Examination Committee
Faculty Member

Dr. Tifooni was awarded the Bachelor of Medical Science in Dentistry from Kuwait University in 2010. She later received her Bachelor Degree in Dental Medicine from Kuwait University in 2013.
Dr. Tifooni obtained her Masters of Clinical Dentistry in Endodontology from King's College London in 2018. In 2018, she was awarded Membership in Endodontics from the Royal College of Surgeons of Edinburgh.

Ibrahim Seghayer

Faculty Member

Dr. Seghayer started his healthcare career as an EMT in 2000 after earning a diploma from The Public Authority for Applied Education & Training. He later earned his BDS degree from Misr University in 2007 and MFDS membership from The Royal College of Surgeons in Ireland in 2011. He completed the first part of the Kuwaiti Dental Board in 2013.

Dr. Seghayer pursued a Master of Dental Surgery in Endodontics at The University of Hong Kong in 2014, focusing on laser technology in endodontics. In 2018, he was awarded Membership in Restorative Dentistry (M.Endo RCSEd). He joined KBE's teaching faculty in 2021.

Mona Alenezi

Faculty Member

Dr. Mona received her Bachelor of Science in Biology from the University of Massachusetts Amherst in 2006. She received her Doctorate in Dental Medicine from Boston University in 2010. She completed an Advanced Education in General Dentistry training in Boston University. Following that, she pursued specialty training and a Masters degree in Endodontics from Boston University in 2018. Dr. Mona is a Diplomate of the American Board of Endodontics. She was a faculty member in Boston University in both predoctoral and postdoctoral programs and she also worked in private practice in Massachusetts before moving to Kuwait.

Amna AlBaghli

Faculty Member

Dr. Albaghli earned her Bachelor of Science in Biology from West Virginia University in May 2011. She later obtained her Doctor of Dental Surgery degree from West Virginia University in 2015. In 2021, Dr. Albaghli earned a certificate in Endodontics and Master of Science in Oral Biology from University of Pennsylvania. After her graduation, Dr. Albaghli joined the endodontic program at Penn Dental Medicine as a research associate faculty where she supervised and managed clinical research projects. In 2022, she practiced as part time Endodontist in multiple offices in Philadelphia before joining Bneid Algar Dental Specialty Center in Kuwait at the end of 2022.

Dr. Albaghli obtained a fellowship from the Royal College of Dentists Canada in 2023

Mohammad Aljerwan

Faculty Member

Dr. Aljerwan received his BDS in dental surgery from October 6 University in 2012. Eager to enhance his expertise, he pursued the MClinDent Endodontic program at King's College London in 2017, where he excelled and proudly graduated with distinction in 2020. His commitment to excellence was further acknowledged with the prestigious Membership in Endodontics from the Royal College of Surgeons of Edinburgh.

In 2023, Dr. Aljerwan took on a new role as a part-time faculty member in the Kuwait Board of Endodontic program, part of the esteemed Kuwait Institute for Medical Specialization. He also serves as an Endodontic specialist in a private clinic, bringing his wealth of knowledge and skill to patient care.

Tareq Alali

Faculty Member

Dr. Alali is a Consultant at the ministry of health in Kuwait. He was an assistant professor at Virginia Commonwealth University and Kuwait University prior to joining the ministry of health in Kuwait.

He received his Doctor of Dental Surgery degree from Virginia Commonwealth University in 2007. In 2008, he completed a training program in Advanced Education in General Dentistry at Virginia Commonwealth University. Following that, He pursued specialty training in Endodontics and a Master of Science in Dentistry degree from Virginia Commonwealth University in 2013. Dr. Tareq is a Diplomate of the American Board of Endodontics.

Braikan Alajmi

Faculty Member

Dr. Alajmi earned his Bachelor's Degree in Dental Surgery from October 6 University in 2008. In 2018, he completed his Master's in Clinical Dentistry in Endodontology at Cardiff University and was subsequently awarded Membership in Endodontics by the Royal College of Surgeons of Edinburgh. Dr. Alajmi has served as a Specialist Endodontist at Al-Adan Dental Specialty Center and has also contributed to academia as a part-time faculty member at Kuwait University. Additionally, he has presented at numerous local conferences and participated in various Kuwait Board programs.

Zain Alrashed

Faculty Member

Dr. Zain is a senior registrar at the ministry of health in Kuwait. She received her Bachelors in Medical sciences from Kuwait University Health Science Center in 2013. In 2016, She received her Bachelors in Dental Medicine from Kuwait University Health Science Center. After graduating she completed a training program in Masters of Science in Dentistry in Kuwait Institute of Medical Specialties. Following that, She pursued specialty training in Endodontics from Kuwait Institute of Medical Specialties in 2022.

Residents

Sarah Alkhamees
Class of 2026

Wadha Alkhalifah
Class of 2026

Zainab AlEkri
Class of 2026

Shorouq Alkandari
Class of 2026

Fahad Alsafi
Class of 2027

Musaed Alenezi
Class of 2027

Najem Alyasen
Class of 2027

Alumni

Zain Alrashed

Class of 2022

Mohammed Alshammeri

Class of 2022

Lulwa Almousawi

Class of 2023

Dhuha Arhamah

Class of 2024

Joza Alotaibi

Class of 2024

Ghadeer Mahdi

Class of 2024

Eman Aldabous

Class of 2024

Introduction

The Board of Trustees of KIMS agreed to approve the Kuwait Board of Endodontics (KBE) in 2018. The program is a 3 year program (R3-R5).
In dentistry, successful completion of the first two years of the program (R1-R2) in General Dentistry will mark an entry point to further three (3) years of postgraduate education in different fields of dentistry including Endodontics (R3-R5). The Residents of any of the programs will be promoted to the various levels through a series of qualifying examinations/assessments conducted at the end of each level in the presence of external examiner(s). At the end of each year, the Board of Examiners chaired by the Secretary General will meet to review the results of all formative in-course assessments as well as the summative ones for approval and final announcement of the results by KIMS.

Program Structure

Kuwait Board of Endodontics is a 36 month program. Applicants can enroll into the program after successful completion of the R2 examination of the Kuwait Board of Dentistry. Applicants with equivalent degrees must consult KIMS before applying to the program.

KBE is based in the Specialized Dental Center in Salmiya, with 8 available chairs for residents and staff. The program accepts 2-4 residents per year, and the application cycle is announced through KIMS website. All applicants must adhere to the rules and regulations of Kuwait Institute of Medical Specialties (KIMS). http://kims.org.kw/pge/

KBE starts with a specially designed basic sciences course in collaboration with the Dental Faculty at Kuwait University. Residents will review 10-12 basic sciences topics such as Head and neck anatomy, Embryology, Microbiology, Oral Pathology, Radiology, Dental Materials, Biostatistics, and Oral Medicine. Each topic will be assessed via a final examination. Advanced Endodontics core course is a lab based simulation on natural and plastic teeth. This course will prepare residents for clinical endodontics. This course will be carried simultaneously with the basic sciences course. Passing both courses is mandatory to progress to clinical endodontics in December of the first year.

Each Academic year is taught in 3 semesters, Fall (Oct to Dec), Spring (Jan to May), and Summer (June to September). Residents will be evaluated each semester to comply with KIMS

rules. Clinical sessions run all year round, except for first year students who start clinics in December/Jan.
Literature review (current and classic) will run from January to the end of June each academic year and residents are required to attend all sessions. Advanced Endodontics Core courses are conducted during the first, second and third year. Topics covered are; Surgical Endodontics, Retreatment, Pulp Biology, Pain, Trauma, Case presentations, and topic discussions.
At the beginning of summer course residents will have an end of year exam that covers all literature and courses given during the year (except for basic sciences courses). Pass marks and completion of clinical requirements are mandatory to advance to the next academic year. Failure in any of these courses or exams is dealt with according to KIMS rules and regulations.

At the end of 3rd year residents who have completed all requirements and passed all required courses will be eligible to sit the Kuwait Board of Endodontics Exam. Exam is in two sections; written, and oral exam. Upon successful completion of the examination the residents will be awarded with a Specialty Degree in Endodontics.

Goals

- The primary aim of the Endodontic residency program is to educate and train residents to enable them to practice first class Endodontics.
- The residents shall acquire requisite knowledge, skills and attitude to enable them to practice with competence, compassion and professionalism as specialists in Endodontics.
- The residents will work in a learning environment that is optimally conducive to develop skills of problem-solving while exercising evidence-based critical judgment regarding the diagnosis and management of disorders that present in the day-to-day practice in Endodontics.
- The residents will assimilate the habit of self-learning to facilitate continuing life-long professional development.
- The residents shall also recognize the significance of applied basic sciences relevant to the practice of Endodontics.

Objectives

The training experience is designed to enable the Endodontic Residents to meet the stated core objectives:

At the end of training, the resident should be able to demonstrate:

- Professional excellence in the clinical practice and science of endodontics.
- Skills in clinical problem solving and independent decision making based on using sound professional judgment and timely intervention.

- Proficiency in active participation in scientific programs through critical thinking & presentations.
- Comprehensive working knowledge of the therapeutic actions and toxic effects of drugs commonly used, in particular, in the treatment of dental conditions.
- A sound basic knowledge and understanding of applied anatomy, physiology, and biochemistry sufficient to interpret the effects of common dental diseases and injuries on the systems of the body, especially, but not exclusively, in the head and neck.
- A good understanding of cell biology and applied histology, which enables them to understand the normal and disordered function of dentally important tissues and organs.
- An adequate knowledge of the pathogenesis of common developmental abnormalities is important in Endodontics.
- An understanding of applied general pathology including the principles of immunology and microbiology that is relevant to dental practice.
- Clear understanding of all relevant procedures in the field of sterilization, aseptic protocol and infection control.
- Complete understanding of all pertinent regulations in the subject of radiation hazards and radiation protection.

Specific Learning Objectives

The Residency program is designed to provide education and training to enable the residents to meet the stated core objectives. At the end of the residency training, the endodontic resident should demonstrate:

- In-depth knowledge and proficiency in differential diagnosis of pulpal and periapical diseases and their treatment planning.
- Be proficient in endodontic patient care that is based on scientific, biological, and ethical standards.
- Understanding of taxonomy, ecology, and pathogenicity of the endodontic microflora and in-depth knowledge of their etiologic significance in pulpal and periradicular diseases.
- In-depth knowledge in endodontic anesthesia, pharmacology of local anesthesia, their adverse effects, and proficiency in endodontic anesthesia including intra-pulpal, periodontal ligament, and intraosseous injections.
- In-depth knowledge in neural elements and mechanisms of pain in pulp and dentin, neurovascular interactions in the dental pulp in health and inflammation, neurobiology of pain and be proficient in diagnosis and management of odontogenic pain and diagnosis of non-odontogenic pain.

- Demonstrate understanding of periapical inflammatory responses, their modulation, and mechanisms of peri-radicular osteolysis.

Demonstrate in-depth knowledge in:

- Mechanisms of injury to the pulp as a result of dental procedures.
- Pulp response to injury and prevention of pulpal damage.
- Vital pulp therapy, the processes involved, materials used, and prognosis and proficiency in vital pulp therapy.
- Anatomy and morphology of the human teeth.
- Digital and film based endodontic radiographic techniques, the risks associated with dental radiography, assessment of pulp and periradicular radiographs, and being proficient in obtaining and assessment of peri-radicular images.
- Indications and interpretation of cone beam tomography "CBCT".
- Electronic apex locators and be proficient in their use.
- Root canal instruments and be proficient in their use.
- Be proficient in the use of ultrasonic and subsonic devices and retrotips.
- Root canal biomechanical instrumentation techniques and be proficient in root canal instrumentation.
- Endodontic irrigants, rinses, and various root filling materials, their biological effects, and be proficient in common gutta percha root filling techniques.
- Non-surgical endodontic retreatment and be proficient in root canal retreatment.
- Surgical endodontic treatment and be proficient in performing endodontic microsurgery.
- Intentional replantation of teeth; demonstrate familiarity with re-plantation, auto-transplantation procedures.
- Wound healing and be proficient in the evaluation of peri- radicular surgery prognosis.
- Management of endodontic mishaps, and be competent in their management, and the materials used.
- In differential diagnosis of endodontic periodontic lesions and their management.
- In differential diagnosis of dental traumatic injuries, and be competent in their management.
- In prognosis of vital pulp therapy, non-surgical and surgical endodontic treatment.
- Management of combined orthodontic/endodontic cases.

LEARNING RESOURCES

Physical Facilities

The clinical training of the Residents will be conducted at the *endodontic clinics at the Specialized Dental Center in Salmiya.*
The lectures will be provided at halls within KIMS, and specialty dental centers as well as dental faculty facilities in Kuwait University.

References and reading Material

The recommended list includes:

- Text Books.
- Literature review list.
- Current literature list.

Computer Facilities and Internet Access

All candidates are expected to have enough experience in the use of computers in terms of word processing, PowerPoint/ Keynote presentations, database handling, online access to educational materials and communications.
Each resident will be able to access the cloud based drive of KBE provided and secured by MOH. Access will be granted through the resident official MOH email or residency email.

Research Facilities and Teaching

The resident will be requested to provide periodical case presentations. He/she will also be encouraged to write a scientific article and actively demonstrate his/her efforts in publishing it in a peer-reviewed Journal.

Eligibility of Residents

There are a limited number of places available in the program, it is necessary to have some form of selection process to ensure that the most appropriate graduates can be given preference. This includes the following:

I. Possession of a recognized undergraduate degree.
II. A defined minimum score in the final undergraduate examination.
III. Certificate of completion of the Internship reflecting high overall performance.
IV. R2 Certificate.

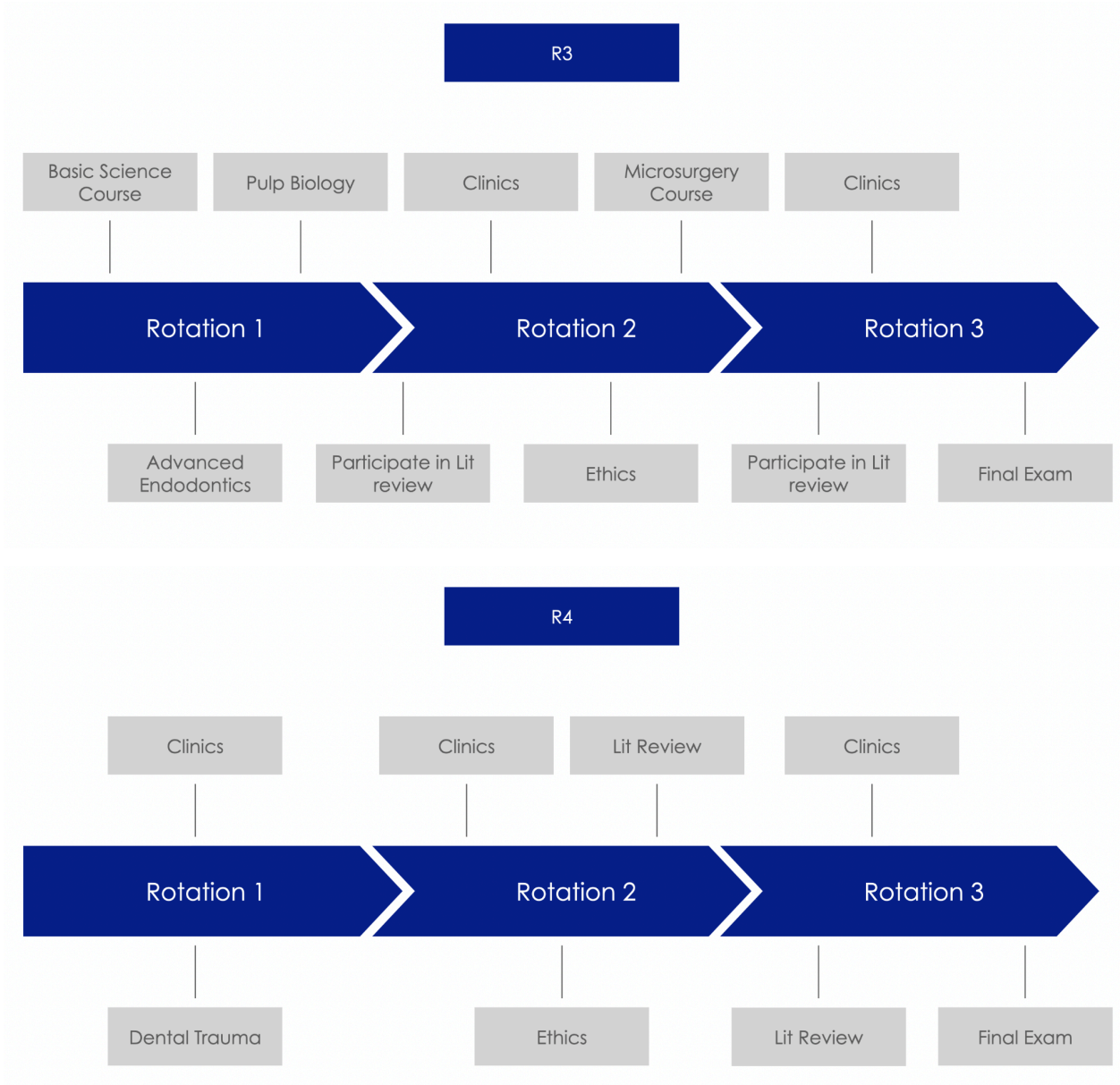
V. *The provision of curriculum vitae.*

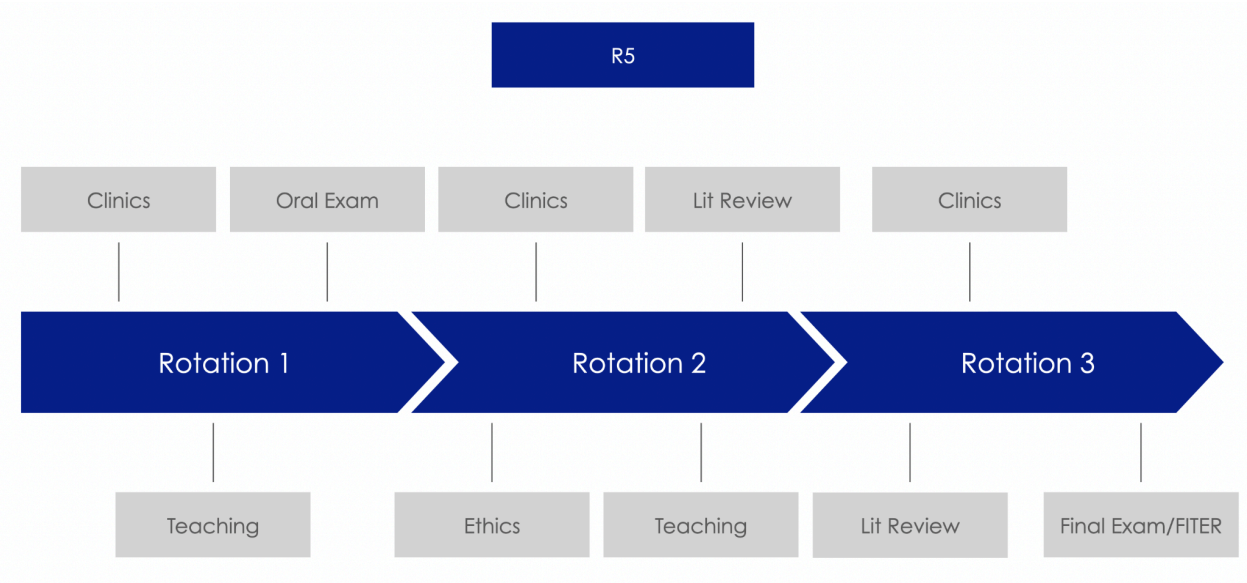
VI. *Recommendation letters ; 3 signed and sealed from specialists in endodontics*

VII. *Letter of intent.*

VIII. *Extra documents and materials the resident wishes to submit.*

KBE ROTATIONS BLUEPRINT





PG	1st rotation 1/10-31/1		2nd rotation 1/2-30/5		3rd rotation 30/5-30/9	
	Courses	**Evaluations**	**Courses**	**Evaluations**	**Courses**	**Evaluations**
R3	Basic sciences course Advanced Endodontics Pulp Biology	Course Eval. Lecturer Eval. Residents Wellness End of Rotation Eval. by all faculty and P.Director	Clinic Current and selected classic lit review Microsurgery Ethics	Residents Wellness End of Rotation Eval. by all faculty and P.Director	Clinic Current & selected classic lit review **Final Exam :** courses and R3 literature	Course Eval. Lecturer Eval. Residents Wellness End of Rotation Eval. by all faculty and P.Director ITER

R4	Clinic Dental Trauma	Residents Wellness End of Rotation Eval. by all faculty and P.Director	Clinic Lit review Ethics	Course Eval. Lecturer Eval. Residents Wellness End of Rotation Eval. by all faculty and P.Director	Clinic LIT Review **Final Exam :** R4 literature	Residents Wellness End of Rotation Eval. by all faculty and P.Director ITER
R5	Clinic Teaching: Advanced Endo,KU, Lab and/or Clinic **Oral Exam**	Course Eval. Lecturer Eval. Residents Wellness End of Rotation Eval. by all faculty and P.Director	Clinic Lit review Teaching:KU, Lab and/or Clinic Ethics	Residents Wellness End of Rotation Eval. by all faculty and P.Director Log Book Totals FITER	Clinic Lit review Teaching:KU, Lab and/or Clinic **Final Exam :** R3-R5 literature	Residents Wellness End of Rotation Eval. by all faculty and P.Director

R3	**Academic Year**			**Examination**
Course	Advanced Endo Oct - Jan	Lectures		End of year Final Exam (covering 3 courses)
		Literature	Diagnosis Anatomy and access Anatomy and access Hand Instrumentation 1 Hand Instrumentation 2 Rotary Instrumentation 1 Rotary Instrumentation 2 irrigation and smear layer irrigation and smear layer Obturation 1 Obturation 2 Radiology	
Course	Pulp Biology Dec- Feb	Lectures		
		Literature	Pulp and Dentine 1 Pulp and Dentine 2	

			Pulp and Dentine 3 Apical Periodontitis 1 Apical Periodontitis 2 VPT 1 VPT 2 Regeneration 1 Regeneration 2	
Course	Surgery May	Lectures		
		Literature	Surgery 1 Surgery 2 Surgery 3 Surgery Outcome	
Course	Ethics TBD	One day course lectures & discussion		

R4	**Academic Year**			**Examination**
Course	Trauma Dec	Lectures		End of year Final Exam (literature R4)
		Literature	Trauma Resorption 1 Resorption 2	
Course	Ethics TBD	One day course lectures & discussion		
Course	Current and Classic Lit Review	Intra-canal Meds 1 Intra-canal Meds 2 Endo & Systemic guidelines Endo & Systemic guidelines Manag.Of med. Compr 1&2. Manag.Of med. Compr 1&2. Cracked tooth 1 Cracked tooth 2 Anesthesia 1 Anesthesia 2 Pain 1 Pain 2 Emergencies & Pharma Emergencies & Pharma Biocompatibility Bleaching Mishaps		

Course	Topic and Case Presentations		Evaluations

R5	**Academic Year**		**Examination**
Course	**Teaching** Advanced Endo Course Pulp Biology Possibly KU		Oral Exam End of year Final Exam (literature R3-R5)
Course	Ethics TBD	One day course lectures & discussion	
Course	Current and Classic Lit Review	Microbiology Microbiology Retreatment 1 / ultrasonic Retreatment 2 / ultrasonic Retreatment 3 / ultrasonic Perio - Endo Perio - Endo One Vs multiple 1 One Vs multiple 2 Ortho/Endo Rest of Endo teeth 1 Rest of Endo teeth 2 Rest of Endo teeth 3 Outcome 1 Outcome 2 Outcome 3 Implant Vs Endo	
Course	Topic and Case Presentations		Evaluations

Basic Sciences Course

These series of interdisciplinary courses are designed to improve and expand knowledge in the basic science foundation for the practice of Paediatric Dentistry, Endodontics, Prosthodontics, and Orthodontics and Dentofacial Orthopedics. Some of the courses are brief and basic, while others are more extensive and comprehensive. Didactic lectures will be supplemented with active learning exercises in small-group environments allowing for implementation of these sciences in clinical scenarios. Completing and successfully passing the Basic Sciences course is a prerequisite to progressing towards clinical rotations and be eligible to sit the R3 final year exam. Failing to pass this course requirement will automatically result in an unsatisfactory ITER report. Please see the Remediation Policy section for further explanation.

Coordinators: Dr Ibrahim Seghayer, and Dr Rawan Al-Khuwaiteem

No.	Course Title
1	Research Methods in Clinical Dentistry
2	Embryology and Oral Histology
3	Head and Neck Anatomy
4	Local Anesthesia in Dentistry
5	Medical Emergencies in the Dental Setting
6	Oral Pathology and Oral Medicine
7	Digital Dentistry and Dental Biomaterials
8	Oral Microbiology
9	Pharmacology in Dentistry
10	Contemporary Dental Photography
11	Infection Control in Dental Health Care Settings

Supplemental recommended courses must be arranged individually through a recognised institute or to ensure validity if completed before, by the residents prior to the start of clinical sessions as per the recommendations of the Ministry of Health of Kuwait. The courses ensure safety of patients in clinical settings and are highly recommended by the KBE. Residents that do not show evidence of a valid licence for BLS will not be able to start clinical sessions in the

second rotation. Although not compulsory, the other courses are highly recommended. These courses include:

Course Title
Basic Life Support (BLS)
Advanced Cardiovascular Life Support (ACLS)

Examination Policy

Exams will be held after completion of all basic sciences subjects, during the month of December.

There are four examinations, which all have a passing score of 70%:

- Two written exam papers
- Objective Structured Clinical Examination (OSCE)
- Research Methods in Clinical Dentistry Exam

Examination	Details
Written Exam	Two written exam papers which includes multiple choice questions (MCQ) and short answer questions (SAQ) to assess knowledge in the following disciplines of the Basic Sciences Course: • Embryology and Oral Histology • Head and Neck Anatomy • Local Anaesthesia in Dentistry • Medical Emergencies in the Dental Setting • Oral Pathology and Oral Medicine • Oral Microbiology • Digital Dentistry and Dental Biomaterials • Pharmacology in Dentistry • Introduction to Applied Clinical Dentistry
OSCE	The OSCE is a practical examination with multiple stations. This exam will be used to assess clinical competencies in the different disciplines of the Basic Sciences Course, including: • Embryology and Oral Histology • Head and Neck Anatomy

	• Local Anaesthesia in Dentistry • Medical Emergencies in the Dental Setting • Oral Pathology and Oral Medicine • Oral Microbiology • Digital Dentistry and Dental Biomaterials • Pharmacology in Dentistry • Introduction to Applied Clinical Dentistry
Research Methods in Clinical Dentistry Exam	The Research Methods in Clinical Dentistry Exam is a written exam with MCQ and SAQ questions.

Remediation Policy

Course organisers will offer remediation if a resident is unsuccessful in passing any of the four exams. This remediation policy covers qualification criteria, remediation process, remediation grading, maximum remediation attempts, and examination schedules.

1. Qualification criteria for remediation:
   - The resident has completed all assigned work for the course
   - The resident has attended the course regularly – not less than 80% of the sessions
   - The resident has demonstrated competency in some, but not all, areas of the course

2. Remediation process:
   i. Reset Exam 1:
   If a resident has failed one, or more, exams, he or she will complete the following components within four weeks of the unsuccessful exam date: a reset exam within four weeks (reset exam number 1).

   ii. Reset Exam 2:
   If a resident was unsuccessful in passing the reset exam number 1, he or she will resume regular academic duties. The resident will attend clinical duties as an observer only. A further attempt to take the exam will take place four to six weeks after the second rotation starts in January.

   Format of Reset Exam 2 will be as follows:
   1. A written essay (5,000 - 10,000 words) on a topic agreed on by the course organizer
   2. A 20-minute presentation on the topic agreed on

3. Reset exam of the same format as Exam 1 and Reset Exam 1.

In the event the resident is unsuccessful in passing Reset Exam number 2, the resident will **not** be eligible to take the end-of-year R3 exam because they have not passed the Basic Sciences Course which is a prerequisite to taking the exam. The ITER evaluation will report the resident as **not eligible to progress** to the next academic level (R4).

The Resident will be placed on probation immediately and will be limited to the following:

- Attend academic classes: as a listener and will not be tested or evaluated like their R3 peers
- Attend clinical duties as an observer **only** as passing the Basic Sciences course is a prerequisite to start clinical duties on patients
- Resident will repeat the year

iii. Reset Exam 3:

The second failure will place the resident on probation according to KIMS policy. The resident will join the new junior residents in the following academic year for the Basic Sciences course and exam (reset exam number 3).

If successful in passing the exam, the resident resumes his clinical and academic work. If the resident is unsuccessful in passing reset exam number 3, they will no longer be eligible to complete their training and will exit the program, in line with KIM'S policy.

Residents should note that they are allowed two probation periods during their studies. Any future probations and failures will result in immediate dismissal from the program.

3. Remediation grading

Grading for reset exams is individually defined for each subject, as outlined in the handbook. It is important to note that the passing mark for the reset exam is 70%.

Reset Exam 2: The resident must pass each section of the remediation exam. The resident must score no less than 70% in each of the following:

1. Essay
2. Presentation

3. Written exam

Reset Exam 3: the resident is required to repeat the whole course. The resident will be evaluated on the following:

1. Attendance: Excused absences should **not exceed 15%** of the total course content. Failure to attend without a reasonable excuse will result in immediate failure.
2. Course participation and homework must be completed and passed according to each course requirement.
3. End of course exam must be passed with a 60% passing mark.

4. Maximum remediation attempts – 3 attempts

- Remediation attempt number 1: within four weeks of the failed exam: reset exam
- Remediation attempt number 2: within 4-6 weeks after the end of the basic sciences course (along with the essay and presentation)
- Remediation attempt number 3: repeat course attendance and requirements in the following academic year

5. Examination scheduling

Exams dates are set and will be completed within four weeks. The only acceptable excuse for rescheduling an examination, or oral evaluation, is a valid medical excuse. These excuses must be received in advance and accompanied by a letter from the Program Director.

6. Attendance

Attendance is an essential part of the program. It will be graded accordingly throughout the rotations. Although medical leave of absence is accepted, it is essential that it does not exceed 20% of each course. Failure to attend at least 80% of each course will result in remediation.
Unjustified leaves may not be accepted at the discretion of the Program Director. Any unjustified absences will be reported by course organizers to their respective Program Director. Course organizers will file a professional misconduct report to the Program Director. Appropriate actions will be agreed upon by the Program Director and KIMS postgraduate office. Further actions will be carried out according to the KIMS rules and regulations.

Note: For further details, please refer to the 'Policies and Procedures on Professionalism for Physician in Training', found in KIMS Manual of Policy & Procedures.

Endodontic Core Courses

Introduction to Advanced Endodontics

Coordinator: Mona Alenezi

Faculty
Mona Alenezi DMD, CAGS, MSD, ABE

Residents

R5 Residents

PROGRAM GENERAL GUIDELINES

Endodontics is that branch of dentistry concerned with the **morphology, physiology, and pathology of the human dental pulp and periapical tissues**. Endodontics as an academic discipline is responsible for the advancement of endodontic knowledge through research, the transmission of information concerning advances in biologically acceptable procedures and materials, and the education of the public and profession as to the importance of endodontic treatment in keeping the dentition in a physiologically functional state for the maintenance of oral and systemic health.

This course is to provide a strong foundation for non surgical endodontic treatment and diagnosis.
The syllabus, lectures and seminars will provide a nucleus for the course Introduction to Advanced Endodontics.

COURSE REQUIREMENTS AND EVALUATION

I. REQUIREMENTS

1. DIDACTIC COURSE (Seminars): The didactic portion of the course will consist of a series of lectures and literature review seminars.

2. PRECLINICAL LABORATORY. A series of laboratory exercises will include description of the root canal system then performance of root canal therapy to completion on multiple teeth. At the completion of each session of the preclinical laboratory exercises, each resident must present the laboratory evaluation sheets for the respective exercise to his/her assigned instructors.

The last laboratory sessions will be used for a **practical examination** requiring the completion of endodontic treatment and endodontic retreatment. Each step of the practical examination will be evaluated using the Endodontic based evaluation criteria (please refer to the forms). Unacceptable performance (i.e., over or under prepared access, any portion of the tooth is perforated, a file is separated in the root canal, or root canal is obturated more than 3 mm short of the apex or beyond the apex) will result in failure on the examination. A resident will be offered a brief remedial course followed by another practical examination. If the remediation is failed, the resident will be required to retake the course of Introduction to Advanced Endodontics

3. PRECLINICAL LABORATORY EVALUATION

Evaluation forms for required procedures will be submitted for each case.

COURSE SYLLABUS

Course Title: Introduction to Advanced Endodontics

Course Director: Dr. Mona Alenezi

Year: R3

Rotation: First rotation

Course Profile (hrs): 75 HRS, lectures and simulation lab

Course Goals/Objectives
Learn the different endodontic diagnosis and treatment modalities.
Know the anatomy of the pulp chamber and root canals.
Understand the principles of endodontic radiography
Be able to perform the following procedures: access preparation, working length determination, straight line access, root canal instrumentation and obturation.
Know the properties and utilization of endodontic instruments
Be familiar with the requirements of the ideal core root canal filling material
Be familiar with the properties of the obturation materials and root canal sealers
Learn the prevention, recognition and management of endodontic treatment errors

Be able to perform non-surgical retreatment
Learn how to remove core materials and various types of posts
Learn how to prepare post space, and place a post and core material

Specific competencies addressed in this course:

Competency: Performing endodontic evaluation, assessment, and treatment of uncomplicated endodontics by applying appropriate non-surgical techniques.

REQUIRED MATERIALS:
Modupro jaws
Extracted teeth properly stored

Required TEXT (s):
Syllabus
AAE Guide to Clinical Endodontics
AAE Endodontics: Colleagues for Excellence: Endodontic Diagnosis
Endodontics: Principles and Practice 6th Edition. Torabinejad, Fouad, Shabahang.
Cohen's Pathways of the Pulp. 12th Edition.
Classic Literature: Diagnosis, Radiology, Anatomy, Access, Irrigation, Hand Instrumentation, Rotary Instrumentation, Obturation, Bioceramics, Smear Layer and Chelation.

References and Supplementary Reading:
Syllabus.
Please read articles referenced in the syllabus as well as literature review assignments.

Method of Instruction:
I. Didactic Courses: Including lectures and reading requirements.
II. Preclinical Laboratory: A series of laboratory exercises will include description of the root canal system then performance of endodontic therapy to completion on assigned teeth.

Method of Evaluation:
I. Preclinical Laboratory: Successfully passed practical tests.
2. Written examination: Didactic material will be examined in a comprehensive end of year course written examination.

Remediation:
I. Preclinical Laboratory: Residents will be allowed to remediate to successfully pass practical tests.
2. Written examination: In accordance with KIMS policy on remediation for end of year examinations.

Attendance:
Attendance at all lectures, seminars, rotations, laboratories, and clinics are mandatory. Reasonable accommodation will be made for resident sickness, other personal or family concerns, and scheduling conflicts.

Guidelines for Resident Use of Laptops in the Teaching/Learning Environment:
Use of resident laptop computers during lectures and other teaching activities should be restricted to viewing of material relevant to the current topic. E-mailing, social media, games, internet surfing, etc. are considered inappropriate use during class time and potentially disruptive to other residents and faculty.

Masks and gloves and proper clinic attire should be worn at all times in the laboratory sessions.

PRECLINICAL LABORATORY REQUIREMENTS

Requirements for the introductory course

Each resident must perform the following to a good standard (grade >70 required for each case)	**Upper Incisors**	**Lower Incisors**	**Premolars**	**Molars**
Access cavity preparations and canal location	2	2	2	8
Prepare using hand files ONLY to size 30, step back Fill using vertical condensation	1			
Prepare using Vortex Rotary Files, fill using vertical condensation			1	
Prepare using rotary ProTaper Next files Fill using vertical condensation	1		1	4
Remove GP from upper incisors; prepare both to size >80 (to simulate immature apices) Fill with MTA/ Bioceramic Putty	2			
Remove GP using hand files If enough time, fill using any technique			1	
Remove GP using rotary/reciprocating files If enough time, fill using any technique				2
Prepare 1 post space and cement metal post using conventional luting cement				1

Remove metal post using ultrasonics/ post removal system				1
Prepare 1 post space and cement fiber post using resin cement			1	
Remove fiber post			1	
Fracture instrument deliberately; remove broken instruments				1
EXAM Virgin tooth access, inst. hand and rotary, WVC obturation and core build up				1
EXAM Retreat the same exam tooth, obturate and core build up				1

LECTURES AND LITERATURE REVIEW SEMINARS

Date	Time	Lecture/ Lab	Literature Review/Classic Lit	Instructor
TBD	07.30-14.30	ENDODONTIC TERMINOLOGY, DIAGNOSIS & TREATMENT OPTIONS	Review Lit Review Format	Mona Alenezi R5 Resident
TBD	07.30-14.30	MICROSCOPE	Diagnosis 1	Mona Alenezi R5 Resident
TBD	07.30-14.30	PreClinical Hands On Microscope Screening and Mounting Teeth		Mona Alenezi R5 Resident
TBD	07.30-14.30	ENDODONTIC INSTRUMENTS	Diagnosis 2	Mona Alenezi R5 Resident
TBD	07.30-14.30	PreClinical Hands On Diagnostic Testing and Documentation		Mona Alenezi R5 Resident
TBD	07.30-14.30	RADIOLOGY	Radiology	Mona Alenezi R5 Resident
TBD	07.30-14.30	PreClinical Hands On Radiographs/ CBCT review		Mona Alenezi R5 Resident

TBD	07.30-14.30	PULP SPACE ANATOMY & ENDODONTIC ACCESS PREPARATION	Anatomy 1	Mona Alenezi R5 Resident
TBD	07.30-14.30	PreClinical Hands On Access		Mona Alenezi R5 Resident
TBD	07.30-14.30		Anatomy 2	Mona Alenezi R5 Resident
TBD	07.30-14.30	PreClinical Hands On Access		
TBD	07.30-14.30		Access	Mona Alenezi R5 Resident
TBD	07:30 -14:30	Hands on PreClinical Access		Mona Alenezi R5 Resident
TBD	07.30-14.30	WORKING LENGTH DETERMINATION INSTRUMENTATION	Hand Instrumentation	Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical Access/ Instrumentation		Mona Alenezi R5 Resident
TBD	07.30-14.30		Rotary Instrumentation	Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical Instrumentation		Mona Alenezi R5 Resident
TBD	07.30-14.30	ROOT CANAL FILLING MATERIALS & OBTURATION	Obturation 1 and 2	Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical Instrumentation/ Obturation		Mona Alenezi R5 Resident
TBD	07.30-14.30		Irrigation	Mona Alenezi R5
TBD	07.30-14.30	Hands on PreClinical Obturation		Mona Alenezi R5 Resident

TBD	07.30-14.30	Hands on PreClinical Obturation		Mona Alenezi R5 Resident
TBD	07:30-14.30	Hands on PreClinical Obturation		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical		Mona Alenezi R5 Resident
TBD	07.30-14.30	RETREATMENT MISHAPS and PROCEDURAL ERROR		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical Retreatment		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical Retreatment		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical Retreatment		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical Retreatment		Mona Alenezi R5 Resident
TBD	07.30-14.30	POST AND CORE BUILD UP MATERIALS Hands on PreClinical Post Placement		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical Post Removal		Mona Alenezi R5 Resident
TBD	07:30-14:30	BIOCERAMICS AND APEXIFICATION	Bioceramics	Mona Alenezi R5 Resident
TBD	07:30- 14:30	Hands on PreClinical Apexification MTA/ BC Putty		Mona Alenezi R5 Resident
TBD	07:30- 14:30	Hands on PreClinical Apexification MTA/ BC Putty		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical Separated Instrument Removal		Mona Alenezi R5 Resident

TBD	07:30- 14:30		Smear Layer and Chelation	Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical		Mona Alenezi R5 Resident
TBD	07.30-14.30	Hands on PreClinical		Mona Alenezi R5 Resident
TBD	07:30- 14:30	HANDS ON EXAM		Mona Alenezi
TBD	07:30- 14:30	HANDS ON EXAM		Mona Alenezi
TBD	07:30- 14:30	CLINIC ORIENTATION		Mona Alenezi R5 Resident

Dental Traumatology

Coordinator: Dr Fahad AlZoubi

Course description
This course will focus on the classification, management and sequelae of traumatic dental injuries (TDIs) through a list of seminars and presentations. In addition, the course will also consist of lab sessions that will help develop the necessary skills required to manage TDIs. The course will be taught once every year to the Endodontic residents during the R4 year.

Goals and Objectives
Upon completion of the course, the residents will be able to carry out the following:

***The Dental-Trauma Patient*:**
Describe how to take a history and examine a patient with dental injuries
Indicate what radiographs are useful in evaluating the dental-trauma patient
Indicate various diagnostic tests, when and how to use them

***Injuries to Permanent Teeth*:**
Distinguish between different types of injuries to permanent teeth
Describe various types of crown fractures
Describe various types of root fractures, make a diagnosis and provide immediate and definitive treatment

***Displacement of Permanent Teeth*:**
Discuss the pathophysiology of injuries to the teeth
Provide treatment options for injuries to permanent teeth
Describe the advantages of semirigid and rigid splinting techniques
Explain how to monitor and treat pulpal complications of dental injuries
Discuss how to monitor and treat root resorption caused by dental injuries
Describe neurovascular injury and pulpal necrosis and periodontal ligament injury and resorption
Describe lateral displacement (luxation), extrusion, intrusion, avulsion of permanent teeth, make a diagnosis, and provide immediate and definitive treatment

Injuries to Primary Teeth:
Explain the diagnosis and treatment options for injuries to primary teeth
Describe concussion and subluxation of primary teeth, make a diagnosis and provide a treatment
Describe dislocation of the mandible, make a diagnosis, and provide a treatment

Soft-Tissue Lacerations:
List the advantages of various types of suture materials used to treat lacerations
Describe the benefits and applications of absorbable and nonabsorbable sutures
Provide the rationale and steps for suturing oral and facial lacerations
Give an explanation of wound healing in soft-tissue lacerations

Alveolar Fractures:
Explain the diagnosis and treatment of alveolar fractures
Take history, make a diagnosis, and provide treatment for alveolar fractures

Mandible Fractures:
Discuss the physiology of bone repair
Identify various causes of mandible fractures
Provide a classification of mandible fractures, by location, type of fracture, severity of fracture, and the direction or displacement of fracture
List symptoms of patients who have sustained fractures of the mandible
Make a diagnosis of specific fractures of the mandible
Provide treatment for mandible fractures

Midface Fractures:
Describe three types of fractures of the maxilla, their diagnoses, and stabilization techniques for the patient
Describe the fractures of the zygomatic complex, zygomatic arch and nasal bones
List the clinical findings of fractures of the midface, zygoma, and nose

Dental First Aid in the Field:
Discuss methods of dental first aid in field conditions

Pharmacology in the field:
Be familiar with all topical and systemic medication used in the treatment of traumatic dental injuries

***Psychosocial impact*:**
Become familiar with the effects of traumatic dental injuries on the psychosocial wellbeing
Become familiar with the impact on the patient and their family's quality of life
Identify potential non-accidental injury and to define the child protection process

Required Text:
Andreasen, J.O., Andreasen, F.M. and Andersson, L. eds., 2018. *Textbook and color atlas of traumatic injuries to the teeth*. Wiley-Blackwell.

References and Supplementary Reading:

A list of scientific articles is provided in the form of a reading list.

Method of Instruction:
The course is taught in a small group that is primarily a literature review in nature.

Method of Evaluation:
Performance is assessed by participation in the literature review sessions and a case-based presentation. In addition, the material of the course will be included in the final year examination.

Remediation:
The course coordinator will assess the need for extra didactic sessions and/or additional placement in the trauma clinic.

Course Timetable:

No.		
1	Dental Traumatology Lectures	Dr Fahad
2	Dental Traumatology Hands on – practical session	Dr Fahad
3	Seminars	Dr Fahad
4	Literature Review	Dr Fahad
5	Case-based Presentation	Dr Fahad

Seminar: Dental Traumatology

No	Title	Resident's Name
1	Trauma to primary teeth: sequelae and treatment	
2	Infractions and uncomplicated crown fractures (Enamel/ Enamel & Dentine)	

3	Crown fractures: complicated (vital pulp techniques)	
4	Root fractures	
5	Luxations	
6	Avulsions	
7	Post-trauma resorption and ankylosis	
8	Treatment of non-vital teeth with and without complete root formation	
9	Management of poor prognosis anterior teeth	
10	Auto-transplantation (Premolar Transplant)	

Orofacial Pain

The availability of orofacial pain specialists may impact the scheduling of the course. However, it is important to note that all the theoretical content will be covered during the literature review session.

Coordinator: Dr Dalal AlOmar

A comprehensive seminar series designed to study the patho-physiology of the pulp and pain propagation from oral tissue to the brain. The course will combine information from the basic sciences with clinical correlation.

Goals and Objectives

At the end of the course residents are expected to be;

1. Professional excellence in the clinical practice and science of pain and its management
2. Demonstrate in-depth knowledge in neural elements and mechanisms of pain in pulp and dentin, neurovascular interactions in the dental pulp in health and inflammation, neurobiology of pain and be proficient in diagnosis and management of odontogenic pain and diagnosis of non-odontogenic pain
3. A sound basic knowledge and understanding of applied anatomy, physiology, and biochemistry sufficient to interpret the effects of common medical conditions on the systems of the body, especially, but not exclusively, in the head and neck.
4. A good understanding of cell biology and applied histology, which enables them to understand the normal and disordered function of dentally important tissues and organs.

5. Demonstrate in-depth knowledge in differential diagnosis of odontogenic and nonodontogenic peri-radicular lesions and be proficient in treatment of odontogenic periradicular lesions.
6. Demonstrate understanding of the basics of how to perform clinical examinations.
7. Demonstrate ability to perform or request special tests and know their limitations.
8. To review the various physiological methods of investigating non odontogenic pain.
9. Demonstrate skills in clinical problem solving and independent decision making based on using sound professional judgment and timely intervention.
10. Comprehensive working knowledge of the therapeutic actions and toxic effects of drugs commonly used, in particular, in the treatment of dental conditions.
11. Residents must understand and know how to manage MRONJ, Mayofacial pain, neuralgia, phantom pain, neuropathies, and psychological pains.

Required Text:

References and Supplementary Reading:

A list of scientific articles is provided and will be discussed during literature review

Method of Instruction:

The course is taught in a seminar series.

Method of Evaluation:

Written exam at the end of the course

Remediation:

Residents will be asked to provide detailed literature review of a topic up to 10000 words.

COURSE OUTLINE

- Course will be done over 10 , 2hr sessions
- Teaching method discussion of literature
- Material will be given to residents ahead of each session to read from
- in the session discussion of the lit and basic sciences followed by quiz
- Grading, attendance and quiz grades

Sessions (2hrs each)

1-Basic concepts and mechanisms of pain

2- Musculoskeletal disorders

3 - Neuropathic pain disorders

4-Neurovascular, inflammatory and systemic pain disorders

5-Pharmacology for dental and orofacial pain

Orofacial Pain Course

Syllabus

1. **The Basic Pain Mechanism**

a. *Anatomy of the Nervous System*
    i. Neuron structure and function
    ii. Action Potential
    iii. Neuron Classification (Groups)
    iv. Basic Anatomy of the Brain
    v. Central and Peripheral Nervous Systems
b. *The Trigeminal System*
    i. Trigeminal Nerve Anatomy (Branches in details "1st order neurons")
    ii. Trigeminal Brainstem Complex (anatomy; nucleus, 2nd order neurons "trigeminothalamic tract", interneurons, convergence "referred pain" and decussation)
    iii. Thalamus and Cerebral Cortex (3rd order neurons and modulation components "Periaqueductal Gray area, Rostral Ventral Medulla, Nucleus Raphe Magnus and Locus Ceruleus)
c. *Nociceptive Pain Conduction*
    i. Transduction
    ii. Transmission
    iii. Modulation
    iv. Perception
d. *Types of Pain*
    i. Nociceptive Pain
    ii. Non-nociceptive Pain
    iii. Acute vs Chronic Pain (Axis I vs Axis II)
e. *Dental Pain*
    i. Intrapulpal sensory nerve fibers
    ii. The Mechanisms of Pulpal Pain Perception

2. Odontogenic vs Non-Odontogenic Pain

a. *Non-odontogenic pain of musculoskeletal origin*
    i. Myofacial Pain
    ii. TMJ Disorders
b. *Non-odontogenic pain of neuropathic origin*
    i. Mechanism of Neuropathic Pain
        1. Nerve compression
        2. Neuroma Formation
        3. Deafferentation Pain
        4. Sympathetically Maintained Pain
        5. Central sensitization
        6. Peripheral sensitization
    ii. Episodic Neuropathic Pain
        1. Neuralgias
            a. Trigeminal neuralgia
            b. Glossopharyngeal neuralgia

c. Occipital neuralgia
d. Nervus intermedius neuralgia
e. Superior laryngeal neuralgia

2. Eagle's Syndrome

iii. Continues Neuropathic Pain

1. Atypical odontalgia
2. Traumatic trigeminal neuralgia
3. Traumatic neuroma
4. Herpes zoster
5. Postherpetic trigeminal neuralgia
6. Burning mouth syndrome
7. Complex regional pain disorder syndrome

c. *Non-odontogenic pain of neurovascular origin*

i. Primary Headache Disorders

1. Migraine
2. Tension Type Headaches
3. Trigeminal Autonomic Cephalagias
    a. Cluster Headache
    b. Paroxysmal Hemicrania
    c. Hemicrania Continua
    d. Short Lasting Unilateral Headache Attacks
        i. SUNCT and SUNA

ii. Secondary Headache Disorders

1. Headaches and Intracranial Lesions
2. Giant Cell Arteritis

d. *Non-odontogenic pain of inflammatory origin*

i. Sinusitis

e. *Non-odontogenic pain due to systemic disorders*

i. Cardiac Arrest
ii. Neoplasm
iii. Menstrual Cycle
iv. Others

3. Pharmacology for Dental Pain

a. *Analgesics*

i. Non-opioid analgesics

1. Non-Steroidal Anti-inflammatory Drugs
    a. Mechanism of Action
    b. Indications and Usage
    c. Adverse Reactions and Side Effects
    d. Recommendations For NSAID
2. Acetaminophen
3. acetylsalicylic acid

ii. Opioid Analgesics
    1. Mechanism of Action
    2. Indications and Usage
    3. Adverse Reactions and Side Effects
    4. Safety Measures for Opioid Use
    5. Recommendations For Opioid Prescription
iii. Corticosteroids
    1. Mechanism of Action
    2. Indications and Usage
    3. Adverse Reactions and Side Effects

b. *Anxiolytic Medications*
    i. Benzodiazepines
        1. Mechanism of Action
        2. Indications and Usage
        3. Adverse Reactions and Side Effects
    ii. Other anti-anxiety Drugs

Retreatment

Non-surgical Endodontic retreatment will be covered over the course of the program in three parts.

Retreatment Part 1/ Simulation and Lectures:

This part will be taught during the introduction to advanced Endodontic course. Lectures will be given in combination with lab exercises to introduce residents to the armamentarium of instruments and techniques needed to remove old root canal fillings as well as posts and core build up.

Plastic and extracted teeth will be used in simulation labs where residents will retreat their own completed root canal treated teeth.

Retreatment Part 2/ Clinical:

Residents are encouraged to carry our non-surgical root canal retreatment as soon as they start clinic. This will enhance their diagnostic and clinical skills. They will be closely monitored and supervised in a one to one manner to ensure they are competent enough to undertake the treatment with minimal supervision.

Recalls are also highly emphasized to enable the monitor of success and failure. In cases of failure residents will carry out surgical treatment if possible.

Retreatment Part 3/ Literature:

Non-surgical root canal retreatment will be covered through multiple sessions of literature discussions. This will be carried out over the three years' period of training due to overlap with other topics. Retreatment will be discussed in depth in the following literature sessions;

- Retreatment
- Ultrasonic
- Radiology

The following sessions will discuss retreatment as part of topic discussions;

- Diagnosis
- Cracked teeth
- Irrigation
- Chelation
- Restoration of Endodontically treated teeth
- Outcome
- Surgery
- Anatomy
- Apical periodontitis
- Microbiology

Goals and Objectives

Upon completion of the course, the residents will be able to carry out the following:

1. Demonstrate understanding of taxonomy, ecology, and pathogenicity of the endodontic microflora and in-depth knowledge of their etiologic significance in pulpal and periradicular diseases.
2. How to evaluate and plan a complicated endodontic failure.
3. Indications and contraindications of each retreatment procedure.
4. Understand and use of ultrasonic and subsonic devices and retrotips.
5. Demonstrate understanding in infection control in dentistry.
6. Root canal biomechanical instrumentation techniques and be proficient in root canal instrumentation.
7. Endodontic irrigants, rinses, and various root filling materials, their biological effects.
8. Silver cone and paste root fillings removal, and other unconventional endodontic treatments.
9. Demonstrate ability to read CBCT radiographs and know it's limitations.
10. In-depth knowledge in the biology and healing process of soft and hard tissues.
11. Understand how to manage common complications during retreatment.
12. Understand the rationale behind surgical procedures.
13. Be proficient in post removal and broken instrument removal.
14. Understand the basics of perforation repair.

15. Demonstrate in-depth knowledge in side effects and clinical outcome of non- surgical retreatment.

Required Text:
A list of scientific articles is provided and will be discussed during literature review
Method of Instruction:
The course is taught in a seminar series. Simulation lab, clinical sessions and literature review sessions.

Method of Evaluation:
Part 1 will be examined with the Advanced endodontics course
Part 2 will be evaluated as part of Clinical Endodontics course
Part 3 will be examined at the end of year with the literature review exam

Remediation:
Residents will be repeating each part in their designated courses/exams.

Surgical Endodontics

Coordinators: Dr Samhan Alajmi, Dr Amna Albaghle

Course description
Surgical endodontics became an essential part of modern endodontic practice. This course is designed to provide a comprehensive lecture series and hands-on training to cover all aspects of surgical endodontics including apicoectomy, intentional replantation, root amputation, hemisection, auto-transplantation and resorption surgical repair. This course also includes a basic course for Cone Beam Computed Tomography (CBCT) and how to use it to evaluate, diagnose and plan complicated clinical situations.

Goals and Objectives
Upon completion of the course, the residents will be able to carry out the following:

1. Understanding how to evaluate endodontic failure.
2. Be able to read CBCT radiographs and know its limitations.
3. Understand the indications and contraindications of each surgical procedure.
4. Understand the basics of how to perform Apicoectomy including flap design, osteotomy, root resection, root end preparation, root end filling and sutures.
5. Understand the biology and healing process of soft and hard tissues.
6. Understand how to manage common complications during surgery.
7. Understand the rationale behind Intentional Replantation.
8. Understand how to perform Root amputation and Hemisection.
9. Understand the basics of Resorption Surgical Repair.
10. Understand the possible side effects of each procedure.
11. Understand the outcome of each procedure.

Required Text:
Syngcuk Kim, Samuel Kratchman, 2017. Microsurgery in endodontics. John Wiley & Sons.

References and Supplementary Reading:
A list of scientific articles is provided and will be discussed during literature review

Method of Instruction:
The course is taught in lecture series and hands on.

Method of Evaluation:
Written examination at the end of the course. The material of the course will be included in the final year examination.

Remediation:
The course coordinator will assess the need for extra didactic sessions.

Course Lectures :

Time	Title
12:00-2:00	Ergonomics and Magnification
12:00-2:00	Microsurgery part 1 instruments, indication contraindications, anesthesia hemostasis
12:00-2:00	Microsurgery part 2 flap design, osteotomy, root resection, inspection of resected root, ultrasonic, MTA and bioceramic
12:00-2:00	Microsurgery part 3 flap reposition, periapical wound healing, cbct, mental nerve management, max molar sinus management, surgical root perforation
12:00-2:00	Microsurgery part 4 intentional replantation, GTR, prognosis
12:00-2:00	Microsurgery part 5 other surgical procedures, hemisection, root amputation, resorption repair

PROTOCOL FOR ENDODONTIC SURGERY

Consultation Appointment:

There must be a consultation visit for every surgery planned, prior to the surgical appointment. At this appointment:

1. The procedure is explained to the patient and the consent form is signed
2. Preliminary photographs and radiographs are taken
3. Periodontal probing are performed and localized scaling if necessary
4. Every surgical procedure must be pre-authorized by faculty.

Faculty Approval:

A faculty member must approve each surgery. For every surgery, there will be the surgeon, a chairside assistant, a dental assistant and a faculty member.

Day of Surgery

1. The residents should be in the surgical suite approximately 30 minutes before the surgery to make sure all the equipment is there and working. This is the residents' responsibility, not the assistant's.
2. Surgical time must be kept to a minimum. This requires careful planning and organization.
3. Strict professional behavior, attitude and language are mandatory during the surgery.

After the Surgery

1. The residents must write up the surgery treatment record immediately in the patient's digital chart. Digital images taken with individual cameras should be transferred to a patient digital chart. The surgery portfolio will be submitted to the program director at the completion of the program.

2. The faculty will ultimately be reviewing your surgical cases, and with proper documentation we can establish a library of surgical cases that we will all have access to.
3. The patient should be called the night of surgery to check on bleeding and swelling.

Pulp Biology

Coordinator: Dr Abdullah Alkandari

Course Description

This comprehensive pulp biology course for endodontic residents is designed to equip residents with the cutting-edge knowledge and practical skills needed to understand, diagnose, and treat pulp-related pathologies.

Goals and Objectives

The course aim to:

- **Refine Resident Diagnostic Skills:**

Gain a profound understanding of normal and abnormal pulp tissue. This enables residents to accurately differentiate between various pulp and apical tissue diagnoses and make informed treatment decisions.

- Elevate Resident Treatment Outcomes:

Master the complex interplay between the pulp, dentin, and periapical tissues to optimize healing, minimize complications, and achieve superior clinical outcomes.

- Stay Ahead of the Curve:

Explore the latest advancements in pulp biology, including vital pulp therapy and novel diagnostic tools. This prepares residents for the future of the field and ensures they remain at the forefront of endodontic practice.

- Build a Strong Foundation for Future Careers:

Develop a deep appreciation for the intricate biology of the pulp. This understanding empowers residents to become skilled and confident endodontists, equipped to handle complex cases and deliver exceptional patient care.

Suggested Reading List:

- Siqueira, J.F. and Lopes, H.P., 2011. Treatment of endodontic infections. London: Quintessence.
- Ørstavik, D. editor., 2020. Essential endodontology: prevention and treatment of apical periodontitis. Hobokn, NJ: Wiley-Blackwell
- Hargreaves, K.M. and Berman, L.H., 2015. Cohen's pathways of the pulp expert consult. Elsevier Health Sciences.
- Supplementary scientific articles will be provided and discussed during the course/Literature review.

Method of Instruction:

The course is taught on a seminar and presentation basis.

Method of Evaluation:

This course is required for the R3 final year exam. Residents must complete the course with a passing grade of 60% in order to be eligible to sit the final year exam. The course grade is based on two components:

- Topic presentation (70%): The resident will be evaluated on their presentation performance.

- Attendance and participation (30%): Participation in the seminar/literature discussions.

Remediation:

The course coordinator will assess the need for extra didactic sessions.

Course Schedule:

Course will start in the last week of September or January of each year/ or every other year

Topic	Presenter
Introduction to the course	Dr Abdullah Alkandari
Endodontic Regeneration I	TBD
Endodontic Regeneration II (Webinar)	TBD
Pulp Development	TBD
Pulp Tissues	TBD
Pulp response to stimuli I :Molecular changes	TBD
Pulp response to stimuli II: Dental procedures	TBD
Vital Pulp Therapy	TBD

Resident's presentation

Topic	Presenter
Accuracy of endodontic tests in diagnosing pulp status	TBD
Apical Periodontitis	TBD
Local Anesthesia	TBD
Root Resorption	TBD

Dental Ethics

Coordinator: Mona Alenezi

This course will cover the principles of dental ethics through a series of lectures and discussions.The course will be repeated every year for all residents.

Aims:

Provide the dental professional with guidance in ethical decision making in patient care and patient relationships.

Learning Objectives:

- Understand the meaning of dental ethics and the principle values of beneficence, non-maleficence, veracity, justice and patient autonomy.
- Understand ethics regarding the dental profession including patient care, patient's rights, financial agreements, and relationships with colleagues and other health organizations.
- Understand dental ethics and its applications in different areas around the world and within Kuwait.
- Understand the difference between dental law and dental ethics in Kuwait.
- Understand how to apply ethical principles to everyday dental practice.

Lecturer(s): Mona Alenezi
Lectures' Timetable: TBD

No.	Topic
1	Principles of Ethics
2	International Ethics and Ethics in Kuwait
3	Law vs. Ethics in Kuwait
4	Applications in Dental Practice Case Discussion/ Scenarios
5	Yearly Case Discussions of KBE Scenarios

Assessment Methods:

100% - Attendance and participation

Recommended Reading:

Kuwait Code of Ethics for Medical and Allied Healthcare Professionals, Students and Trainees.

ADA Principle of Ethics and Code of Professional Conduct; https://www.ada.org/about/principles/code-of-ethics.

General Dental Council. Standards for the Dental Team. 2013; https://standards.gdc-uk.org.

International Principles of Ethics for the Dental Professional; https://www.fdiworlddental.org/international-principles-ethics-dental-profession.

Dental Ethics Manual 2 FDI World Dental https://www.fdiworlddental.org/sites/default/files/2020-11/fdi-dental_ethics_manual_2.pdf

Literature Review Course

This course is designed to integrate both classic and current literature topics into the educational journey of the residents. These topics, essential for their academic growth and professional skill development, are carefully selected for comprehensive study. The residents are involved in regular discussions that are integral to their learning process. These discussions occur throughout the course duration, from January to June each academic year, ensuring a consistent and immersive educational experience.

Faculty members play a pivotal role in this learning journey. They delve into facilitating an in-depth analysis of the content. This approach aims to cultivate a deeper level of understanding among the residents. The use of a seminar-style format for these discussions promotes active participation, open dialogue, and critical thinking, essential skills for future professionals. This interactive format enhances the learning experience, fostering a collaborative atmosphere. In this course, residents can gain from the varied perspectives and insights offered by their peers and mentors, enriching their educational journey with a wide range of knowledge and viewpoints

Course Goals and Objectives:

- Equip participants with an understanding of both recently published and classical literature pertinent to endodontics, enhancing their knowledge and application in this

field.

- Introduce participants to a range of periodicals that feature endodontic-related articles, broadening their scope of reference.
- Foster a consistent habit among participants of engaging with current publications, ensuring they stay updated with the latest findings and theories.
- Acquaint participants with the techniques and resources for conducting electronic literature searches, an essential skill for modern research.
- Educate participants about evidence-based endodontics, aligning their practice with contemporary scientific standards.
- Cultivate the participants' skills in critically appraising articles, a key aspect of academic rigor.
- Enhance the participants' abilities in scrutinizing study methodologies and analyzing data, an important aspect of research comprehension.
- Lay the foundational knowledge of current practices in endodontics, grounding participants in the realities of daily professional activities.

For a comprehensive list of articles and topics, refer to the appendix section.

Current Literature Sessions:
During these sessions, residents are tasked with reading assigned issues from various journals, including:

- Journal of Endodontics
- International Endodontic Journal
- Dental Traumatology
- Journal of Dental Research
- Australian Endodontic Journal
- Saudi Endodontic Journal
-
- Additional relevant publications as assigned

Method of Instruction:
The course is taught on a weekly seminar basis.

Evaluation Method:
Final Exam Structure: The final exam will be in a written format, aiming to assess the residents' recall and understanding of the discussed literature in addition to the courses covered in that

year. The exam typically takes place between mid-June to mid-July, within 2-4 weeks following the conclusion of the last classic literature session.

Progression Requirements: Residents must successfully pass the final year written exam to advance from one postgraduate year (PGY) level to the next.

Senior Resident Requirement (R5): Residents in their senior year (R5) are required to take a final year exam, covering material from PGY 1, 2, and 3, at least six weeks prior to their Kuwait Board of Endodontics Exam.

Exam Format: The exam will consist of multiple-choice questions (MCQ) and short answer questions (SAQ). The format of the exam may be either written or computer-based. To pass, residents must achieve success in all sections of the exam.

Passing Criteria: The pass mark for each section of the exam is set at 60%. Additionally, the overall pass mark, considering all combined sections, is also 60%. The PGY3 (R5) final exam will exclusively use the MCQ format.

Remediation Policy: In case a resident fails any section of the exam, they must retake the entire exam in the same format. This retake should occur within a maximum of four weeks from the announcement of the results. Each resident is allowed only one remediation attempt. Failure in the remediation exam will necessitate repeating the year.

Additional Note: The literature review course exam does not fall under the KIMS exam leave policy.

Case and Topic Presentation

This seminar series is structured to enable each resident to showcase various endodontic cases they have treated during their program. The focus is on their diagnostic skills, the diversity and complexity of the cases, the rationale behind therapeutic methods, and their technical expertise.

Goals and Objectives:

- Introduce residents to the techniques necessary for conducting a clinical conference.
- Equip residents with skills to organize and prepare a formal presentation, mandating the use of audiovisual aids.
- Allow residents to engage with the audience by answering questions during the presentation.
- Provide structured guidance in discussions to ensure effective learning.
- Prepare residents to incorporate knowledge from literature into everyday clinical

practice, emphasizing treatment based on the best available evidence.

Sample List of Topics (updated yearly):

- **Medical Emergencies in the Dental Chair**: Focusing on how to handle unexpected medical situations during dental procedures.
- **Local Anesthesia Techniques**: Exploring various methods and best practices in administering local anesthesia.
- **Sedation in Dentistry**: Discussing different sedation techniques and their applications in dental practice.
- **Prion Disease and Dental Implications**: Understanding prion diseases and their impact on dental health and treatment.
- **Amalgam Toxicit**y: Investigating the effects of amalgam fillings and their toxicity concerns in dental treatments.
- L**atest Advances in Pain Management**: An overview of recent developments and techniques in managing pain for dental patients.
- **Critical Analysis of Dental Literature**: Residents may conduct chapter reviews or summaries of recent dental books and publications.

Note: Residents are also encouraged to choose their own topics for presentation, allowing for a diverse and personalized learning experience.

Frequency: The seminar series, including both case presentations and assigned topic discussions, takes place annually. Each presentation, whether it be a case study or a specific topic, is allotted a duration of 45 minutes.

Evaluation:
All presentations are critically evaluated by attending faculty and fellow residents. Passing each assigned topic is mandatory for all residents. A score below 60% necessitates a repeat presentation within two weeks or another agreed-upon timeframe with the course director.

Guest Lecture Series

A lecture series to bring the resident to an in-depth understanding of endodontic diseases, rationale for treatment, treatment techniques, materials and medications, and prognosis of endodontic treatment from the perspective of eminent endodontists with varying backgrounds. The course features a number of eminent guest lecturers that are frequently invited to the program.
Course Goals and Objectives:

- To expose the residents to the viewpoints of eminent scholars and clinicians in the field of endodontics.
- To allow the resident to answer and discuss questions and to debate many varied approaches to the clinical practice of endodontics.
- To develop advanced endodontic concepts by presenting specialized information on clinical endodontics and related basic sciences.

Clinical Endodontics

- Clinical patient care starts on the first semester and continues through-out the program. It includes all aspects of endodontic diagnosis, therapy, and prognosis. Treatment is performed in conjunction with other dental specialties and referring general dentists.
- **Clinic operational hours** are in conjunction with other **specialties working in the same center**.
- Patients are referred from other specialties at the center, polyclinics, private sector, Kuwait University.
- Establish a steady collaboration between the undergraduate clinic and the Endo-board program for referral of retreatment and teeth deemed difficult for undergraduate residents. This can be done by direct contact of patients to the board center or the resident to set up appointments.
- Follow-ups: Clinical and radiographic follow-up is the only way by which the ultimate success or failure of a case can be determined. Residents are required to reevaluate completed cases every 6 months. It is required that minimally 30% of the completed cases are recalled.
- The residents have to show satisfactory performance on proficiencies on different clinical procedures. These include non-surgical root canal treatment "NSRCT", non-surgical root canal retreatment "NSRETX", surgical treatment "SRCT".
- Each resident must submit the clinical evaluation form for each treatment they undertake in the program.
- Number of points and cases vary from year to year depending on patient flow. However, residents should manage to complete at least 300-500 NSRCT/ Retx and 25-50 SRCT during their 36 months training period.

Upon completion of the program the endodontic residents must be proficient in:

A. Endodontic treatment of anterior, premolar, and molar teeth
B. Differential diagnosis of odontogenic pain
C. Diagnosis and management of endodontic emergencies including pain and/or swelling
D. Complex isolation including gingivectomy procedures
E. Endodontic retreatments, including removal of posts, silver cones, paste, other root fillings, and broken instruments
F. Treatment through existing restorations
G. Bleaching and fabrication of esthetic restorations
H. Root canal ledge corrections
I. Surgical procedures including incision and drainage, diagnostic flap, root-end resection, root end filling, root resection, obtaining biopsy specimen, perforation repair, intentional replantation and auto-transplantation
J. Management of traumatized patients, splinting procedure
K. Management of patients with immature apex, pediatric patients, endodontic-periodontic, and endodontic-orthodontic patients

L. Intra-radicular restorations including post preparation, and core build-up and temporary crowns
M. Management of special needs patients both physically and mentally
N. Management of systemically compromised patients

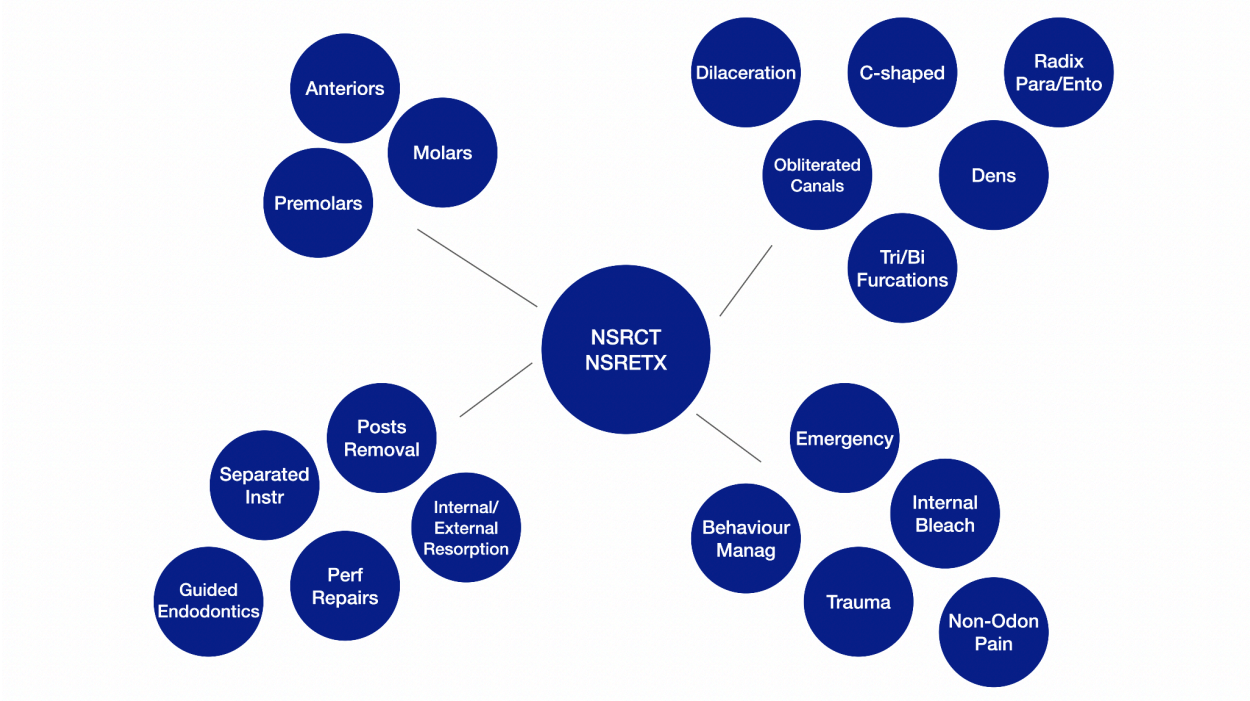
Emergencies and records

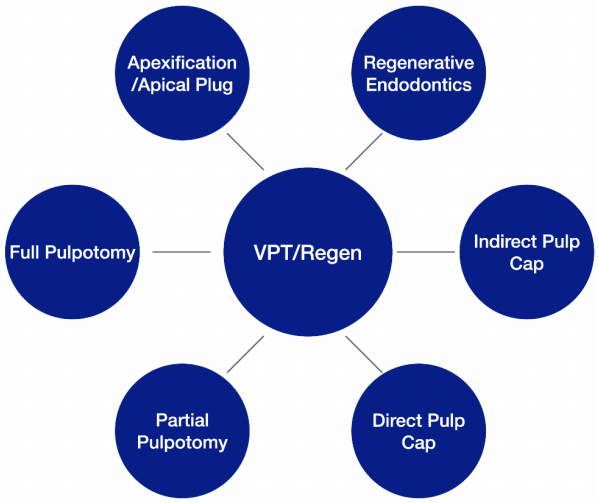
- The residents are expected to manage all patients referred to them for treatment, and record their clinical activities (including diagnosis, treatment, prognosis, and follow-up) in the endodontic patient record.
- Each resident must also develop a case portfolio of all of his or her cases in soft copies.
- Every step of the treatment procedure must be clearly documented in the chart.
- Radiographs should be clear and the image should be sharp.
- Endodontic emergencies will be assigned on a rotational basis.

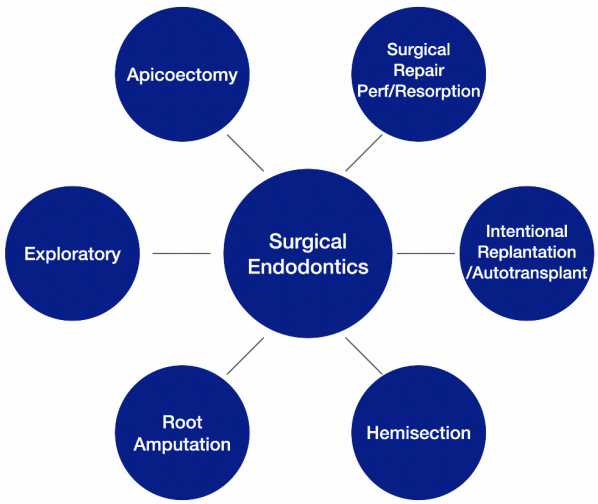
Case Discussions:

1. Case by case discussions will be held with the faculty at the end of each session. Residents are encouraged to seek assistance throughout treatment to prevent errors and to achieve optimal results.
2. Residents are assigned to present their cases during the weekly clinical conferences.

Residents are strongly encouraged to handle a wider variety of cases to improve their training. Below are some examples of the different types of Endodontic cases they can explore.




Apexification /Apical Plug
Regenerative Endodontics
Full Pulpotomy
VPT/Regen
Indirect Pulp Cap
Partial Pulpotomy
Direct Pulp Cap


Apicoectomy
Surgical Repair Perf/Resorption
Exploratory
Surgical Endodontics
Intentional Replantation /Autotransplant
Root Amputation
Hemisection

CLINICS SCHEDULE

Clinical sessions are every day from 7:30 – 6:00 PM Literature review and case presentations are scheduled towards the end of the day at 12:00-2:00 PM.

Clinic schedules are divided between 2 shifts

AM from 7:30-1:00 PM

PM from 2:00- 6:00 PM

KBE Clinic Protocol

Clinical Professionalism:

- Residents are expected to dress in formal attire whenever they are in clinical premises.
- Residents must conduct respectful behavior, act, and language at all times.

Patient Safety:

It is the priority of staff and residents to ensure patient safety. Resident education should not compromise patient safety by any means possible. Examples (trying new procedure, inviting a new technique, spending longer than required treatment time in attempting fractured instrument removal, unnecessary treatment) and many other examples which are case based

Appointments:

- Our clinical slots are 2 hrs maxim per patient for R3 residents. R4 and R5 are required to schedule their patient in 90 or 60 minute slots.
- All scheduling patients must go through a consultation clinic (run by faculty).
- Residents are expected to escort the patient from the waiting area to the clinic.
    - Confirm patient name and date of birth/civil ID number.
    - Escorting will provide a quick general examination to patient health, also it will address any specific needs for the patient, such as wheelchair access.
- Thorough examination should be taken, this includes:
    - Chief complaint
    - Medical History (including vital signs, medications and dosages, allergies)
        - Should be updated at each visit
    - Dental History
    - Diagnostic measures
        - Appropriate radiographs for diagnosis must be taken prior to treatment. Shift angulations and BW are required for proper diagnosis. CBCT also may be indicated.
        - Discuss findings with the attending supervisor to formulate an initial treatment plan.
    - Prognosis and treatment planning
        - Explain all treatment options, risks, benefits and consequences of treatment to the patient clearly.

        - Discuss appropriate fees Including fees for non-Kuwaiti patients
    - Obtain consent forms prior to the start of treatment
    - Document clinical note
    - Once the case is completed, schedule a follow up appointment.
- **No treatment to be carried out prior to approval from the clinical supervisor**.

Clinical Evaluation:

- Residents will be evaluated for every case.
- Residents should fill out the patient record forms that include the treatment record and competency evaluation and have it signed by the supervising faculty at the end of each appointment.
- Each case evaluation will be added to the clinical performance evaluation to accumulate the requirements and points evaluation system.

The following are general guidelines that can be used to refer to for clinical procedures and their treatment protocol. However these may be modified for each case/ patient.

Clinical Protocol for NS-RCT

1. Perform all diagnostic testing and take appropriate radiographs
2. Measure estimated working length from BW: distance to the roof of pulp chamber and floor of pulp chamber; from PA : measure estimated root canal length for each canal
3. Anesthetize patient adequately
4. Observe clinically where is CEJ, any rotations or tilting of teeth
5. Single tooth rubber dam isolation (clamp should be as close to the CEJ and properly aligned to the anatomy of the tooth if possible)
6. Disinfection of tooth and rubber dam with NaOCl
7. Removal of ALL caries and recheck that isolation is still adequate
8. As approaching pulp chamber use high speed round size 2 or 4 bur depending on size of tooth
9. Once access is made into the pulp chamber can continue using round bur to deroof the pulp chamber in an upward direction
10. Switch to a non-end cutting bur (i.e. endo Z) to clean chamber and prepare access walls
11. Ultrasonic tips can be used here as well
12. Locate and visualize all canals (Sodium hypochlorite can be used to help with removal of tissue/debris for visualization of chamber and canals)
13. Examine pulpal floor under high magnification

14. Straight line access to all canals should be completed prior to instrumentation

Use of NaOCl is necessary between each step to avoid canal blockage; Recapitulation and checking for patency should be done as needed throughout instrumentation:

15. Apex locator is used with small hand file 10/15
16. Once reading of zero is reached, your WL is 0.5mm short from this.
17. Rubber stopper on file should be placed to a REPEATABLE and STABLE point of reference.
18. PA radiograph should be taken.
19. Determine IAF (you will open the foramen 2-3x larger than this to the WL)
20. Make certain file is loose before moving to next larger size file (hand file)
21. Open to size 20 at working length with hand files- glide path is established
22. MAF: finish cleaning and shaping 2-3 times larger than IAF. If IAF is 20, you should complete your rotary instrumentation to at least X3/ 30 apical size.
23. Use rotary instrument as follows:
    i. Crown down technique: Start by using an orifice shaper (Sx or X3) to coronally pre-flare the canal to allow for following files to reach WL with less friction
    ii. Use X1, X2 (X3 if needed)
24. Reconfirm your working length with apex locator
25. Final irrigation with NaOCl activated with passive ultrasonic irrigation with irrisafe tips 1mm short of working length
26. 17% EDTA rinse
27. NaOCl rinse (saline can be used after this step)
28. Dry canals with paper points.(If unable to dry – consider placement of CaOH2 and complete obturation at next visit. Place Teflon tape in chamber and temporize the tooth. Then take a postoperative PA radiograph)
29. Disinfect GP cones with NaOCl.
30. Measure GP cone to your WL.
31. Place GP in the canal. If there is no tug back – evaluate reason. (If loose at apex and GP can go past WL and consider trimming and refitting cones. If you finish with an X2 rotary a 0.04 taper cone is usually sufficient.
32. Take a cone fit radiograph. Make sure all canals are visible in the radiograph. May need a shift radiograph to allow for separation of canals.
33. Place sealer on apical third of cone and insert into canal making sure it is going to the WL.
34. Place accessory GP cones if needed in oval or large canals.

35. Down pack obturation should be completed 5-7mm from WL.
36. Back fill obturation to the level of CEJ.
37. PA radiograph should be taken.
38. Place temporary / permanent restorative material. If temporary and plan to have core/ post completed somewhere else, place Teflon tape in chamber and place temporary restorative material.
39. Post-operative PA radiograph (take post op BW if interproximal areas were adjusted anytime during the procedure.

Clinical Protocol for Retreatment

3. Proper radiographs and diagnostic testing completed. CBCT taken if needed.
4. Identification for reason of failure.
5. Anesthetize patient
6. Rubber dam isolation, disinfection of tooth and rubber dam with NaOCl
7. Removal of core material
8. Evaluation of pulpal floor under high magnification
9. Confirm there is a straight-line access to all canals before removing any GP.
10. Use retreatment rotary or reciproc rotary of appropriate size to remove coronal GP. Take caution to use the correct size rotary that will engage only the GP and not the dentinal walls.
11. Smaller files should be used as going apically.
12. Chloroform should be used to help remove GP with rotary and hand instruments.
13. If curved canal, please take extra care in selecting which size retreatment file to use.
14. Identify any missed anatomy/ perforations/ ledges/ separated instruments and treat them appropriately.
15. Once all canals are identified and GP has been removed can continue with conventional NS-RCT treatment protocol.

Clinical Protocol for Apexification

1. Perform all diagnostic testing and take appropriate radiographs
2. Anesthetize patient and rubber dam isolation, access.
3. Cleaning and shaping should be completed - circumferential filing
4. Care should be taken to the working length and prevention of extrusion of irrigants
5. Dry canals with aspiration and paper points
6. 5mm of bioceramic material should be placed from the apex. (apical plug)
7. Ultrasonics can be used here to facilitate with placement

8. If concerns of extrusion of bioceramic material, resorbable collagen membrane can be placed apically before placement of bioceramic material
9. Radiograph should be taken to ensure proper apical seal.
10. Gutta percha backfill can be completed.
11. Radiographs should be taken to ensure there is no gap between materials.
12. Placement of interim/ permanent restoration
13. Take postoperative radiograph

Clinical Protocol for Regeneration (From AAE Protocol Recommendations)

First Appointment

Perform all diagnostic testing and take appropriate radiographs

1. Local anesthesia, dental dam isolation and access.
2. Copious, gentle irrigation with 20 ml NaOCl using an irrigation system that minimizes the possibility of extrusion of irrigants into the periapical space (e.g., needle with closed end and side-vents, or EndoVacTM). Lower concentrations of NaOCl are advised [1.5% NaOCl (20mL/canal, 5 min) and then irrigated with saline or EDTA (20 mL/canal, 5 min), with irrigating needle positioned about 1 mm from root end, to minimize cytotoxicity to stem cells in the apical tissues.
3. Dry canals with paper points.
4. Place calcium hydroxide or low concentration of antibiotic paste.
5. Deliver into the canal system via syringe.
6. If triple antibiotic is used, ensure that it remains below CEJ (minimize crown staining).
7. Seal with 3-4 mm of a temporary restorative material such as Cavit, IRM, glass-ionomer or another temporary material.
8. Take a postoperative radiograph.
9. Dismiss patient for 1-4 weeks.

Second appointment (1-4 weeks after initial)

10. Assess response to initial treatment. If there are signs/symptoms of persistent infection, consider additional treatment time with antimicrobial, or alternative antimicrobial.
11. Anesthesia with 3% mepivacaine without vasoconstrictor, dental dam isolation.
12. Copious, gentle irrigation with 20 ml of 17% EDTA.
13. Dry with paper points.
14. Create bleeding into the canal system by over-instrumenting (induce by rotating a pre-curved K-file at 2 mm past the apical foramen with the goal

of having the entire canal filled with blood to the level of the cemento–enamel junction).

15. Stop bleeding at a level that allows for 3-4 mm of restorative material.
16. Place a resorbable matrix such as CollaPlug, over the blood clot if necessary and MTA/Bioceramic Putty (at least 3 mm width up to the CEJ) as capping material.
17. A 3–4 mm layer of resin modified glass ionomer is flowed gently over the capping material and light-cured for 40 s.
18. Restore with permanent restoration.
19. Take a postoperative radiograph.

Clinical Protocol for Vital Pulp Therapy (VPT)

Vital teeth
Apexogenesis - Immature vital teeth.

We will determine the appropriate treatment as we evaluate the pulp under the microscope.

IF caries extends to mesial and distal in mature teeth/ requires post or crown we will choose NS-RCT. However in immature apices, we will attempt to proceed with VPT.
IF pulp not calcified can attempt to proceed with VPT.
IF "hot tooth" and need to give intrapulpal/PDL injections, will choose NS-RCT.

Perform all diagnostic testing and take appropriate radiographs

1. Give proper anesthesia
2. Isolate and disinfect the tooth and rubber dam with NaOCl
3. Remove caries
4. Change to a new sterile bur as you approach the pulp.
5. Make sure all caries is removed (use caries detector dye if available)
6. We will use visual inspection under magnification to evaluate the status of the pulp and appropriate treatment.
7. If we can achieve hemostasis, we will proceed with VPT.
8. If no hemostasis, remove more pulpal tissue, irrigate with sodium hypochlorite, and reassess.
   >When using cotton pellet be careful not to place too much pressure over the pulp.
9. Once hemostasis is achieved, determine appropriate VPT treatment and proceed with appropriate VPT material (Bioceramic).

10. Place resin modified glass ionomer (Vitrebond) over the capping material and surrounding dentin, light cure.
11. Place permanent restoration the same day.

Research/Teaching

All endodontic residents are expected to gain experience in clinical and didactic instruction and be familiar with teaching methodology. Thus, they give formal presentations to the faculty and fellow residents and participate in pre-clinical and clinical teaching of endodontics at the Faculty of Dentistry, Kuwait University as well as the residents of other Kuwait board programs. Teaching should comprise 5% of the resident's time after the first year of training.

RESEARCH Year 2 & 3:

All endodontic residents ***are encouraged to participate*** in research. Their research activity is determined by their career goals and their personal aspirations. Their research requirements – if applicable - include submission of grant proposals (KFAS), successful completion of necessary experiments, presentation of abstracts at national or international professional meetings, submission to and consequent acceptance of the manuscript(s) for publication in peer reviewed journals.
Evaluations of the resident's research progress are periodically scheduled in formal meetings that include the resident and the advisors, and the proceedings of these meetings are maintained in the resident's personal record.

CAN Med Competencies

KIMS has adopted the CAN Med competencies and milestones in all its postgraduate training programs. Adopting the CAN Med competencies system helps in developing the training residents into independent health professionals towards their graduation.
Since it is the long term goal of KBE to be recognized and accredited by international institutions, CAN Med competencies have been integrated in KBE to comply with KIMS directions and to apply for future accreditation by the Royal College of Dentists in Canada.

MEDICAL EXPERT

Key Competency	Objective	Applied in	Year	Method of Eval
Practice dentistry within their defined scope of practice and expertise	Residents must demonstrate a commitment to high-quality care of their patients	1-on-1 teaching	3, 4 & 5	Direct observation & ITER
	Incorporate CanMED Intrinsic Roles into their practice of dentistry	Workshop	3	Multisource feedback
	Interpret Endodontic knowledge into clinical practice	Advanced endodontic course	3 & 4 Basic Endo/ Retx/ Surgery	Simulation/ Lectures
	Residents should perform thorough clinical assessment and formulate effective treatment plan	1-on-1 teaching	3, 4 & 5	Direct observation & ITER
	Residents are expected to carry out professional duties in a timely manner that meet the challenging demands	1-on-1 teaching	3, 4 & 5	Direct observation & ITER
	Understand the AAE endodontic difficulty assessment guidelines and its application on clinical practice	Case-based problems	3, 4 & 5	Multisource feedback
	Residents should be able to differentiate between the patient's urgent needs and routine treatments	Journal club	3, 4 & 5	Multisource feedback
Perform a patient-centered clinical Assessment and establish a management plan	Residents must perform thorough history taking, intra and extra-oral examination and select appropriate special investigations for the purpose of diagnosis and treatment planning	1-on-1 teaching/Journal club/lecture	3, 4 & 5	Direct observation & ITER/ written exam(end of year)/ final exam

	Residents should carry out appropriate treatment plan that addresses the patient's needs, symptoms and quality of life	Case-based problems/1-on-1 teaching	3, 4 & 5	Direct observation & ITER
	Residents must involve patients and their families in clinical decision making	1-on-1 teaching	3,4 & 5	Multisource feedback
	Residents must determine the most appropriate treatment for their patients	Case-based problems/1-on-1 teaching	3, 4 &5	Direct observation & ITER
Plan and perform procedures and therapies for the purpose of assessment and/or management	Obtain and document informed consent, explaining the risks and benefits of, and the rationale for, a proposed procedure or therapy	Lecture/1-on-1 teaching	3, 4 & 5	Direct observation & ITER
	Residents should be able to prioritize treatment taking into account clinical urgency and available resources	Emergency clinic	3, 4 & 5	Direct observation & ITER
	Residents must show adequate clinical skills and be able to manage clinical mishaps	Seminar/1-on-1 teaching	3, 4 & 5	Direct observation & ITER
	Residents should implement a timely follow-up plan to assess treatment outcome	Panel discussion/ journal club	3, 4 & 5	Multisource feedback/Written exam
Establish plans for ongoing care and, when appropriate, timely consultation				
	Residents should aware of how to avoid adverse events and maintain patient's safety	Workshop/ journal club (Naocl accident, paresthesia)	3	Multi-source feedback
Actively contribute, as an individual and as a member of a team providing care, to the continuous	Residents must adhere to the most recent guidelines by MOH and KIMS	Self-learning module	3, 4 & 5	Direct observation & ITER

improvement of healthcare quality and patient safety				

COMMUNICATOR

Key Competency	Objective	Applied in Year	Year	Method of Eval
Establish professional therapeutic relationships with patients and their families	Residents must always communicate with patients in a respectful, empathetic and compassionate manner	Lecture	3, 4 & 5	Multi-source feedback
	Residents should optimize the physical environment for patient comfort, dignity, privacy, and safety	1-on-1 teaching	3, 4 & 5	Multi-source feedback
	Residents should explain the quality of care based on the best available evidence	Journal Club	3, 4 & 5	Multi-source feedback/Written Exam (Lit review exam)
	Residents should be aware of non-verbal communication behaviors	1-on-1 teaching	3, 4 & 5	Multi-source feedback
	Residents expected to manage disagreements in a respectful manner	1-on-1 teaching	3, 4 & 5	Direct observation & ITER
	Residents should identify the unique needs and preferences of their patients and adapt them to their clinical condition	1-on-1 teaching	3, 4 & 5	Multi-source feedback
Elicit and synthesize accurate and relevant information, incorporating the perspectives of patients and their families	Resident should develop adequate communication skills that aids in collecting relevant information	Case-based problems/ Case presentations	3, 4 & 5	Multi-source feedback

	Residents should provide a clear structure that manages a patient as a whole	Case-based problems/ Case presentations	3, 4 & 5	Multi-source feedback
	Residents should include all relevant sources to synthesize relevant information without violating the patient's consent	Case-based problems/ Case presentations	3, 4 & 5	Multi-source feedback
Share health care information and plans with patients and their families	Residents are expected to share clinical findings in clear language and ensure patients and their family understanding	1-on-1 teaching	3, 4 & 5	Multi-source feedback
	Residents must inform their patients and their families of any potentially harmful incidents appropriately	1-on-1 teaching	3, 4 & 5	Direct Observation and ITER
Engage patients and their families in developing plans that reflect the patient's health care needs and goals	Discussions should be carried out in a reciprocating manner that encourages the patients and their families to feel comfortable in sharing their thoughts	Seminar	3, 4 & 5	Multi-source feedback
	Residents should guide the patients and their families to all available information sources that enhances their understanding	seminar	3, 4 & 5	Multi-source feedback
	Residents must ensure that patients and their families are making informed decisions based on the best evidence provided	Journal club/Seminar	3, 4 & 5	Direct observation & ITER
Document and share written and electronic information about the medical encounter to optimize clinical decision-making, patient safety, confidentiality, and privacy	Documentation must be accurate, clear and complies with regulatory and legal requirements of MOH and KIMS	Lecture/ KIMS Care	3	Direct observation & ITER

	Residents must use the written referral letters provided and communicate digitally only through their program email	MOH IT workshop/ Lecture	3	Multi-source feedback
	Residents must respect patient confidentiality and privacy at all times and adhere to MOH code of ethics	Lecture/ KIMS Care	3	Direct observation & ITER

COLLABORATOR

Key competency	**Objective**	**Applied in**	**Year**	**Method of Eval**
Work effectively with physicians and other colleagues in the health care professions	Residents should establish and maintain a positive relationship with their dental colleagues and all members of the teaching institute	Workshop (Multi-disciplinary session)	4 & 5	Multi-source feedback
	Residents should attend multi-disciplinary sessions that promote teamwork attitudes to facilitate and clarify shared responsibilities	Workshop (Multi-disciplinary Session)	4 & 5	Multi-source feedback
	Residents should attend multi-disciplinary sessions and engage in respectful shared decision-making	Workshop (Multi-disciplinary Session)	4 & 5	Multi-source feedback
Work with physicians and other colleagues in the health care professions to promote understanding, manage differences, and resolve conflicts	Residents are expected to show respect toward collaborators at all times	lecture/ Introduction lectures	3	Multi-source feedback

	Residents must behave in a professional and respectful manner when managing differences and conflict	Seminar	3	Multi-source feedback
Hand over the care of a patient to another health care professional to facilitate continuity of safe patient care	Residents should be aware of their limits and know when care should be transferred to another health care professional	Seminar	3	Portfolio/ cases log book
	Residents must use all necessary communication methods when care is transferred to ensure a safe handover	Seminar	3	Portfolio/ cases log book

LEADER

Key competency	**Objective**	**Applied in**	**Year**	**Method of Eval**
Contribute to the improvement of health care delivery in teams, organizations, and systems	Residents are encouraged to apply positive changes that improves the health care system	Self-learning	3, 4 & 5	Multi-source feedback
	Residents should contribute and promote patient safety	Workshop (KIMS)	3, 4 & 5	Direct observation & ITER
	Residents are encouraged to learn from patient safety incidents to improve systems of care	Seminar	3, 4 & 5	Direct observation & ITER
	Residents must become familiar with health informatics and digital records that contribute towards the quality of patient care	Workshop (MOH IT- one drive)	3, 4 & 5	Multi-source feedback
Engage in the stewardship of health care resources	Residents should use all available resources to optimize patient care	Workshop (KIMS)	3, 4 & 5 are repeated every year for KIMS	Direct observation & ITER

	Residents are expected to apply evidence to achieve cost-effective dental care	Workshop(KIMS)	3, 4 & 5	Direct observation & ITER
Demonstrate leadership in professional practice	Residents are expected to demonstrate leadership skills that enhances healthcare	Workshop(KIMS)	3, 4 & 5	Multi-source feedback
	Residents are encouraged to have an open mindset to facilitates change that improves dental care	Workshop(KIMS)	3, 4 & 5	Multi-source feedback
Manage career planning, finances, and health human resources in a practice	Residents are expected to balance their clinical and personal life	Lecture	Senior Residents	Direct observation & ITER
	Upon completion of the program, residents should be aware of their different career options	Lecture	Senior Residents	Multi-source feedback
	Residents are encouraged to attend personal practice improvement seminars annually	Lecture	Senior Residents	Multi-source feedback

HEALTH ADVOCATE

Key competency	**Objective**	**Applied in**	**Year**	**Method of Eval**
Respond to an individual patient's health needs by advocating with the patient within and beyond the clinical environment	Residents are encouraged to partner with patients and local community to promote oral health	Seminar	3, 4 & 5	Multi-source feedback
	Residents should use available resources that encourages oral health promotion	Seminar	3, 4 & 5	Multi-source feedback

	Residents are expected to treat the presenting oral disease as well as carrying out interactions that focus on health promotion	Journal club (ENDO and Medically compromised)	3, 4 & 5	Written Exam
Respond to the needs of the communities or populations they serve by advocating with them for system-level change in a socially accountable manner	Residents should analyze their monthly statistics report and share their findings to improve community health	Monthly group discussion	4 & 5	Multi-source feedback
	Residents will adapt their practice to the analyzed community needs	Monthly group discussion	4 & 5	Multi-source feedback
	Residents should use their position and influence to continue in local community oral health improvement	Panel discussion/ KIMS care	Senior	Multi-source feedback

SCHOLAR

Key competency	**Objective**	**Applied in**	**Year**	**Method of Eval**
Engage in the continuous enhancement of their professional activities through ongoing learning	Residents should integrate a personal learning plan that promotes self and quality improvement	Journal Club	3, 4 & 5	Direct observation & ITER
	Quality improvement of residents is achieved through continuous self-assessment and feedback	1- On -1 teaching	3, 4 & 5	Portfolio/ cases log book/ITER
	Residents should engage in collaborative learning to improve personal practice	Journal Club	3, 4 & 5	Direct observation & ITER

Teach students, residents, the public, and other health care professionals	Senior residents should recognize the influence of role-modelling and the impact of their behavior on the hidden curriculum	Workshop (KIMS CARE)	Senior Residents	Multi-source feedback
	Senior residents should promote a safe learning environment	Workshop (KIMS CARE)	Senior Residents	Multi-source feedback
	Senior residents should assume responsibility for patient safety when learners are involved	Workshop (KIMS Introduction)	Senior Residents	Multi-source feedback
	Senior residents should plan and deliver a learning activity	Multi-disciplinary meeting /Workshop (KIMS CARE) resident as teachers	Senior Residents	Multi-source feedback
	Senior residents should provide feedback to enhance learning and performance	Workshop (KIMS CARE) resident as teachers	Senior Residents	Multi-source feedback
	Senior residents should assess and evaluate learners, teachers, and programs in an educationally appropriate manner		Senior Residents	Portfolio/ cases log book
Integrate best available evidence into practice	Evidence based dentistry should be implemented in clinical and other professional encounters	Journal Club	3, 4 & 5	Direct observation & ITER & portfolio/ Written
	Residents should be competent in identifying and evaluating information literacy	Journal Club	3, 4 & 5	Written/ Direct observation & ITER
	Residents should critically evaluate the integrity, reliability, and applicability of dental literature	Lectures (Biostatistics)	3, 4 & 5	Written Exam
	Residents must practice evidence based dentistry	Journal Club	3, 4 & 5	Written/ Direct observation & ITER
Contribute to the creation and dissemination of knowledge and	Residents are expected to apply scientific principles of research	Journal Club	3, 4 & 5	Written/ Direct observation & ITER

practices applicable to health	and incorporate them into their clinical practice			
	Residence must be aware of the ethical principles for research and apply them in respecting patient confidentiality and any identifying any conflict of interest	Workshop (KIMS CARE)	3, 4 & 5	Multi-source feedback
	Senior residents should contribute to the work of a research program when the opportunity exists	Workshop (KIMS CARE)	Senior Residents	Multi-source feedback
	Residents should apply an evidence based approach to address scholarly inquiry	Journal Club	3, 4 & 5	Written/Multi-source feedback
	Residents must be able to communicate their research findings to colleagues and lay audience	Multi-disciplinary	3, 4 & 5	Multi-source feedback

PROFESSIONAL

Key competency	**Objective**	**Applied in**	**Year**	**Method of Eval**
Demonstrate a commitment to patients by applying best practices and adhering to high ethical standards	Residents should exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality	WORKSHOP KIMS FIRST DAY	3	Multi-source feedback
	Residents should demonstrate a commitment to excellence in all aspects of practice	1- on-1 teaching	3, 4 & 5	Portfolio/ Cases log book

	Residents must recognize ethical issues encountered and respond in an ethical and moral behavior	Case based problems	3, 4 & 5	Multi-source feedback
	Residents should develop an insight into what constitutes conflict of interest and be able to manage it appropriately	Journal Club	3, 4 & 5	Written/Multi-source feedback
	Be professional behaviors in the use of technology-enabled communication	KIMS CARE (WORKSHOP)	3	Multi-source feedback
Demonstrate a commitment to society by recognizing and responding to societal expectations in health care	Demonstrate accountability to patients, society, and the profession by responding to societal expectations of physicians	KIMS CARE (WORKSHOP)	3	Multi-source feedback
	Residents should show commitment to the promotion of the public good in dental health care	KIMS CARE (WORKSHOP)	3,4,5	Multi-source feedback
Demonstrate a commitment to the profession by adhering to standards and participating in physician-led regulation	Residents must adhere to the codes of ethics set by MOH that governs the medico-legal frameworks for practice, and account to professional regulatory authorities	KIMS CARE (WORKSHOP)	3, 4 & 5	Direct observation & ITER
	Residents must show responsibility to the profession, including obligations of peer assessment, mentorship, collegiality, and support	Case Presentations	3, 4 & 5	Multi-source feedback
	Residents are expected to participate in peer assessment and standard-setting	faculty and staff Eval	3, 4 & 5	Multi-source feedback
Demonstrate a commitment to physician health and well-being to foster optimal patient care	Residents should apply capacity for self-regulation, including the assessment and monitoring of one's thoughts, behaviors, emotions, and attention for	Direct reading (books and leadership development)	3, 4 & 5	Multi-source feedback

	optimal performance and well-being			
	Residents should manage personal and professional demands for a sustainable practice throughout the clinician's life cycle	Self-learning (books and leadership development)	3, 4 & 5	Direct observation & ITER
	Residents are expected to promote a culture that recognizes, supports, and responds effectively to colleagues in need	Self-learning (books and leadership development)	3, 4 & 5	Multi-source feedback
Demonstrate a commitment to patients by applying best practices and adhering to high ethical standards	Residents should exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality	WORKSHOP KIMS FIRST DAY	3	Multi-source feedback
	Residents should demonstrate a commitment to excellence in all aspects of practice	1- on-1 teaching	3, 4 & 5	Portfolio/ Cases log book
	Residents must recognize ethical issues encountered and respond in an ethical and moral behavior	Case based problems	3, 4 & 5	Multi-source feedback
	Residents should develop an insight into what constitutes conflict of interest and be able to manage it appropriately	Journal Club	3, 4 & 5	Written/Multi-source feedback

Evaluation of Residents

In-Training Clinical Evaluation:

- **Academic Reviews/ End of rotation evaluations**

Periodic academic reviews will be held with the program director/ assigned mentor in which the progress of the resident will be monitored. During these reviews the program director/ assigned mentor will make sure that the residents are updating their case portfolios, topic presentations and making satisfactory progress in their research skills . In addition, the program director with the help of a number of faculty members will also review the clinical performance of the residents by reviewing all their clinical cases on a monthly and end of semester basis. A formal report will be given to residents about their progress. Once signed and agreed upon, reports and supporting documents will be sent to the resident file and postgraduate office in KIMS.

In MAY of each year, program director/ assigned mentors are required to submit an In Training Evaluation Report " ITER". The report includes the academic and clinical progress of each resident individually. Performance in clinical rotations as well as didactic exams are averaged. Residents must score an average of 3 out 5 in all categories.
To advance from one post graduate year to another, residents must;

1. Residents cannot be under remediation or probation.
2. Residents cannot be under any disciplinary actions.
3. Pass an annual comprehensive end of year written examination for year 1 & 2 (MCQs/ Short answers) followed by an annual oral examination on his/her treated cases Year 4 and 5
4. Residents must score an average of 3 out 5 in all categories of ITER reports.

- **Clinical Proficiencies**

The residents have to show satisfactory performance on proficiencies on different clinical procedures. These include NSRCT, NSRCRT and SRCT. Each case will be evaluated by a faculty member after completion of treatment.
Number of points and cases vary from year to year depending on patient flow. However, residents should manage to complete at least 300-500 NSRCT/ NSRETX and 35-50 SRCT during their 36 months training period.

- **Notification of absence**

Notification of absence from the clinic must be given to the program director. Leave of absence is subject to rules and regulations of KIMS. The program director must be informed of each residents' and faculty whereabouts during working hours.

Examination:

- Examination Requirements for Endodontic Residents:
    1. Advancement Criteria for PGY Residents: To advance from one PGY level to the next, residents must meet specific criteria. For PGY1 (R3) and PGY2 (R4),

successful completion of an annual comprehensive end-of-year written examination is required. This examination will include multiple-choice questions, short answers, and clinical cases. Furthermore, residents must make annual presentations on their treated cases during both PGY2 and PGY3.

2. Additionally, fulfilling clinical requirements and adhering to attendance policies in accordance with KIMS (Kuwait Institute for Medical Specialization) guidelines is essential for progression.
3. PGY3 Oral Examination: PGY3 (R5) residents must successfully complete an unseen case oral examination, typically scheduled in November of the academic year. Flexibility exists to adjust the dates based on the residents' preparation.
4. Examination Content: The written examinations are designed around endodontic courses, classic literature, and current research relevant to the particular year of study.
5. Final Literature Exam: PGY3 (R5) residents are obliged to take a comprehensive literature exam covering PGY1, PGY2, and PGY3 material at least 6 weeks before their Kuwait Board of Endodontics Exam.
6. Kuwait Board of Endodontics "KBE" Exam: PGY3 (R5) candidates who meet the graduation requirements will become eligible to sit for the Kuwait Board of Endodontics "KBE" Exam. The KBE Exam is conducted under the supervision of KIMS (Kuwait Institute for Medical Specialization).
7. These examination requirements are designed to ensure the competency and readiness of endodontic residents as they progress through their training and prepare them for successful completion of the Kuwait Board of Endodontics Exam.

- Exam requirements:
    1. Passing PYG3 final exam
    2. Passing final case presentation (minimum of 3 cases in each presentation)
    3. Successful FITER report
- The KBE BOARD EXAM includes:
    1. Proof of completing the clinical requirements of the program “FITER”
    2. A comprehensive written examination (3 hours), including all literature and courses taught during residency.
    3. A final Structured Oral examination (6 unseen cases, 60 minutes) case numbers are ***” Number of cases is subject to change”***
- Remediation and Resit Policy:
  In the event of a failure in any of the following evaluations:

    1. Case Presentation
    2. Topic Presentation
    3. Final Course Examination
    4. Final Year Literature Examination
    5. PGY3 (R5) Final Literature Examination

6. PGY3 (R5) Oral Examination

A. The resident is given the opportunity to resit the examination or evaluation within 30 days of the result announcement. "Subject to change according to KIMS policies"
B. However, if the remediation attempt is not successful, it will result in the failure of the academic year, and the resident will be required to repeat the entire academic year, completing all academic and clinical requirements anew.

- Regarding clinical requirements:

A. If the resident fails to complete the necessary clinical requirements during the academic year, they will need to compensate by undertaking double clinical sessions. However, if the shortage is attributed to insufficient clinical skills, the resident may be temporarily removed from the clinic for further training or be required to remediate the entire academic year.
B. This policy aims to ensure the highest standards of performance and competency among residents while providing an opportunity for improvement and growth in their academic and clinical pursuits.

Certification:

Successful candidates of the program will be awarded the specialty certificate in the Kuwaiti Board in Endodontics. The degree is issued by the Kuwait Institute for Medical Specializations and fully recognized by the Ministry of Health as well as the Ministry of Higher Education as the highest clinical degree granted in the field.

Appendices

Clinical Performance Guidelines.

A Brief Guide for Clinical Performance Evaluation
1 - Not Competent/ Inexperienced
• Failure to address medical history that interferes with patient safety Overexposure of patient to radiographs due to lack of skill • Lacks adequate understanding of the case (unable to process chief complaint, identifies wrong tooth) Fails to presents indications, contraindications, risks and benefits of the cases • Inappropriate use of endodontic tests and other investigatory tests Inadequate pre-surgical planning • Lack of signed informed consent • Improper choice of local anesthesia/technique • Inadequate tooth isolation resulting in contamination of the operating field Unable to locate major and easily detectable canals • Perforation due to negligence Incomplete removal of caries Gross overpreparation of canals Extrusion of GP >1mm • Inadequate flap design/ major tears during elevation for surgical procedures Inadequate root resection/ root end filling • Inadequate hemostasis during surgical procedures • Inadequate suture placement/ improper choice of suture material Lack of knowledge of proper medication and dosages • Failure to give appropriate POIG/ medications/ appts Does not accept constructive feedback • Risks patient safety (i.e. does not ask for assistance) Poor resident attitude • Lack of evidence based approach for clinical decisions

A Brief Guide for Clinical Performance Evaluation
2 - Approaching Competence/ Developing

- Inadequate medical history taken (i.e. name/dosage not documented)
- Needs moderate assistance with taking proper radiographs
- Minimal understanding of appropriate diagnostic tests
- Local anesthesia achieved with moderate assistance (physical help with anesthesia)
- Proper tooth isolation obtained with moderate assistance
- Complete caries removal, but no straight line access, moderate assistance needed for localization of canals
- Perforations / transportations
- Overpreparation of canals
- Obturation shorter than 2mm from WL (with no justification)
- Moderate assistance needed for removal of previous obturation materials
- Moderate assistance needed for removal of post/core/restorative material
- Minimal focus on patient safety
- Poor management of time
- Lacks confidence
- Provides some evidence based approach without references for clinical decisions

A Brief Guide for Clinical Performance Evaluation
3 - Competent/ Accomplished
● Adequate medical history taken ● Proper radiographs taken with minimal assistance ● Adequate understanding of risks, benefits, prognosis, and treatment options ● Adequate understanding of the literature and able to justify treatment plan through an evidence based approach ● Local anesthesia achieved with minimal assistance (recommended the techniques) ● Adequate use of magnification ● Complete caries removal and straight line access, localization of canals with minimal assistance ● Able to identify procedural complications and manage them with assistance ● Proper tooth isolation obtained with minimal assistance ● Adequate preparation of canals with minimal assistance

- Well obturated to appropriate length with minimal voids
- Minimal assistance needed for removal of previous obturation materials
- Minimal assistance needed for removal of post/core/restorative material
- Requires minimal help with managing case postoperatively
- Acceptable time management
- Moderate focus on patient safety
- Accepts and respects feedback
- Provides some evidence based approach with references for clinical decisions

A Brief Guide for Clinical Performance Evaluation
4 - Highly Competent
● Adequate medical history - proper referrals were made prior to tx ● Proper radiographs including angulated images to view anatomy with no assistance ● Local anesthesia achieved with no assistance ● Proper tooth isolation obtained with no assistance ● Localization of calcified canals with no assistance ● Adequate preparation of canals with no assistance ● Well obturated to appropriate length with no voids ● No assistance needed for removal of previous obturation materials ● No assistance needed for removal of post/core/restorative material ● Minimal assistance needed for highly difficult surgical procedures ● Adequate and proper POIG/medications/follow up visits scheduled ● Provides evidence based approach with references for most of clinical decisions

A Brief Guide for Clinical Performance Evaluation
5 - Mastered
● Thorough medical history, referral letters, and modifications to tx ● Proper diagnostic radiographs taken with no assistance for difficult case/patient ● Local anesthesia achieved with no assistance and able to properly anesthetize highly difficult cases i.e."hot" tooth/prev hx of LA failure ● Proper tooth isolation obtained for highly difficult cases with no assistance ● Proper access cavity, straight line, and detection and treatment of variations in anatomy with no assistance ● Obturation of challenging canal anatomy with no voids ● Removal of previous obturation materials/restorations in highly challenging cases with no assistance ● No assistance needed for highly difficult surgical procedures ● Outstanding time management without compromising treatment ● Extensive focus on patient safety (i.e. limited radiographic exposure) ● Willingness to ask for feedback and learn from it ● Resident displays confidence and positive attitude ● Supports all clinical decisions with best available evidence and proper references

Case Difficulty Criteria

1. Minimal Difficulty	2. Moderate Difficulty	3. High Difficulty
		Complex medical history/ disability resulting in major modifications to tx
Patient cooperative/ compliant	Highly anxious but cooperative with reassurance	Uncooperative patient
	Vasoconstrictor intolerance	Difficulty achieving anesthesia (hot tooth)
No limitation in mouth opening	Slight limitation in mouth opening	Significant limitation in mouth opening
No gag reflex	Gags occasionally with radiographs/tx	Extreme gag reflex
Signs and symptoms consistent with recognized pulpal and periapical conditions	Extensive differential diagnosis	Confusing and complex signs and symptoms leading to difficult diagnosis
Minimal difficulty obtaining/interpreting radiographs	Moderate difficulty obtaining radiographs (narrow/low palatal vault, presence of tori)	Extreme difficulty obtaining/interpreting radiographs (superimposed anatomical structures)
Minimal or no difficulty in isolation	Moderate difficulty in isolation	High difficulty in isolation
Anterior tooth single canal , premolars with one canal and two canal upper premolars	Molars with normal canal anatomy, lower premolar with two canals	Premolars with 3 canals, teeth with unusual anatomy i. e.dens ivaginatus
None to slight canal curvature	Moderate canal curvatures	Severe canal curvatures
	Retreatment cases	Previous access with complications (perforation/ severe ledge/ separated instrument)
	Open Apex - Divergent	Open apex - Blunderbuss
	Presence of pulp stones, canals and chamber reduced in size	Pulp chamber obliterated/ severely calcified canals/ indistinct canal path on radiographs
Uncomplicated crown fractures	Complicated crown fracture/ alveolar fracture/ extrusion/lateral luxation	Horizontal root fracture/ intrusive luxation/ avulsion
	Minimal apical resorption	Internal/ External resorption
	Full coverage restoration or post present	Full coverage restoration WITH post
		Very long tooth >25mm
		Regeneration

Case difficulty for surgical procedures to be determined by supervising faculty.

Advanced Endodontic Course Form

Kuwait Board of Endodontics
Advanced Endodontics

Grade Sheet - RCT

Name
Tooth **Passing Grade= 70**
Procedure

	Max Score	Self Eval	Faculty Score
Access Cavity			
External outline form (no excessive removal of tooth structure)	10		
Internal outline form (no gouging or excess removal of internal tooth structure)	10		
Straight Line Access	10		
Removal of pulp horns	10		
*Automatic Failure: Perforation			
Instrumentation			
Working Length	10		
Apical gauge/ Initial apical size	5		
Taper/ Final apical size	10		
*Automatic Failure: Apical transportation/ perforations; file extrudes >2mm from apex			
Obturation			
Appropriate master cone at correct working length	10		
Down pack within 5-7mm of WL	5		
Obturation within 1mm from apex	5		
Condensation/ No voids	10		
Removal of excess GP above CEJ	5		
*Automatic Failure: Extrusion of GP			
Total	100	0	0

Teeth must be mounted in the correct position in the correct quadrant and be isolated with rubber dam during entire treatment.
ALL radiographs must have the entire tooth and 3mm past the apex visible.
Radiographs REQUIRED: Pre-Op(one image for single canal, two images for multiple canals); Working Length (must see separation of canals/files in multicanal teeth); Master Cone Fit (must see separation of canals/gp in multicanal teeth); Down Pack; Final Obturation; Post-Op (with restoration if applicable)

PLEASE ATTACH PRE-OP AND POST-OP PHOTO OF OCCLUSAL VIEW OF TOOTH

Kuwait Board of Endodontics
Advanced Endodontics

Grade Sheet - Retreatment

Name
Tooth
Procedure

Passing Grade= 70

	Max Score	Self Eval	Faculty Score
Access Cavity			
Removal of core material/posts	10		
Internal outline form (no gouging or excess removal of internal tooth structure)	10		
Straight Line Access	10		
Removal of pulp horns/ stain	10		
*Automatic Failure: Perforation			
Instrumentation			
Removal of obturation material	10		
Working Length	10		
Taper/ Final apical size	5		
*Automatic Failure: Apical transportation/ perforations; file extrudes >2mm from apex			
Obturation			
Appropriate master cone at correct working length	10		
Down pack within 5-7mm of WL	5		
Obturation within 1mm from apex	5		
Condensation/ No voids	10		
Removal of excess GP above CEJ	5		
*Automatic Failure: Extrusion of GP			
Total	100	0	0

Teeth must be mounted in the correct position in the correct quadrant and be isolated with rubber dam during entire treatment.

ALL radiographs must have the entire tooth and 3mm past the apex visible.

Radiographs REQUIRED: Pre-Op(one image for single canal, two images for multiple canals); Working Length (must see separation of canals/files in multicanal teeth); Master Cone Fit (must see separation of canals/gp in multicanal teeth); Down Pack; Final Obturation; Post-Op (with restoration if applicable)

PLEASE ATTACH PRE-OP AND POST-OP PHOTO OF OCCLUSAL VIEW OF TOOTH

Kuwait Board of Endodontics
Advanced Endodontics

Grade Sheet - Apexfication

Name
Tooth **Passing Grade= 70**
Procedure

	Max Score	Self Eval	Faculty Score
Access Cavity			
External outline form (no excessive removal of tooth structure)	10		
Internal outline form (no gouging or excess removal of internal tooth structure)	10		
Straight Line Access	10		
Removal of pulp horns	10		
*Automatic Failure: Perforation			
Instrumentation			
Working Length	10		
Apical gauge/ Initial apical size (estimation)	5		
Taper/ Final apical size (estimation)	10		
*Automatic Failure: Apical transportation/ perforations; file extrudes >2mm from apex			
Obturation			
Condensation of MTA/Putty; no voids	10		
Length of 3-5mm of MTA/putty	5		
Obturation within 1mm from apex	10		
Condensation/ No voids	5		
Removal of excess GP above CEJ	5		
*Automatic Failure: Extrusion of MTA/Putty >1mm			
Total	100	0	0

Teeth must be mounted in the correct position in the correct quadrant and be isolated with rubber dam during entire treatment.

ALL radiographs must have the entire tooth and 3mm past the apex visible.

Radiographs REQUIRED: Pre-Op(one image for single canal, two images for multiple canals); Working Length (must see separation of canals/files in multicanal teeth); MTA/ Putty Placement; Final Obturation; Post-Op (with restoration if applicable)

PLEASE ATTACH PRE-OP AND POST-OP PHOTO OF OCCLUSAL VIEW OF TOOTH

Kuwait Board of Endodontics
Advanced Endodontics

Grade Sheet - Other

Name
Tooth **Passing Grade= 70**
Procedure

	Max Score	Self Eval	Faculty Score
Post Removal			
Successful removal of post	50		
Non excessive removal of tooth structure	50		
*Automatic Failure: Perforation			
Total	100	0	0
Separated Instrument			
Retrieval of instrument	50		
No severe ledges or excess removal of tooth structure	50		
*Automatic Failure: Perforation			
Total	100	0	0
Post and Core Placement			
Adequate post preparation	25		
Correct size post	25		
Adequate length of post	25		
No voids in core build up material	25		
*Automatic Failure: Perforation			
Total	100	0	0

Teeth must be mounted in the correct position in the correct quadrant and be isolated with rubber dam during entire treatment.

ALL radiographs must have the entire tooth and 3mm past the apex visible.

Radiographs REQUIRED: Pre-Op(one image for single canal, two images for multiple canals); Post fit(if applicable); Post-Op

PLEASE ATTACH PRE-OP AND POST-OP PHOTO OF OCCLUSAL VIEW OF TOOTH

Case Presentation Evaluation Form

Resident Name			
Submission Date		**Level**	

Please use the grade scale in table below:

Scores 1 or 5 (*) have to be explained in the comments sections. Failure to do so will void the evaluation. Detailed explanation is provided at the end of the report.

	Not competent*	Approaching competency	Competent	Highly competent	Mastered *	
	1*	2	3	4	5*	

Pass Mark is 96 out of 160 = 60%

Documentation	Grade
The "chief complaint" was accurately documented and clearly explained.	
A thorough investigation and presentation of the medical and dental history.	
Accurate conduction of examinations, tests, and investigations.	
Displayed relevant radiographs with accurate interpretations in a clear and non-destructive manner.	
Arranging the differential diagnosis in a structured order, starting with the most likely and progressing to the least likely.	
Appropriate treatment planning and treatment options.	
The quality of the treatment provided.	
Effective management of follow-up appointments.	
Total out of 80	
Documentation Comments:	

Presentation	Grade
The content is supported by pertinent literature and clinical illustrations.	
The slides and images were well-structured and didn't disrupt the flow.	
Efficient utilization of diagrams, charts, and visual aids.	
Management of time was adequate.	
Total out of 40	

Presentation Comments:

Presenter	Grade
The presenter showcased a solid grasp of the topic and sustained an engaging presentation.	
The presenter's behavior and attitude during the presentation, including reactions to discussions and feedback.	
The presenter built a strong connection with the audience.	
The presenter was thoroughly organized and well-prepared.	
Total out of 40	
Presenter Comments:	

Overall score	
This score is an average of multiple evaluators	
Program Director:	
Date	
Signature	

Grade	Guide for evaluation and level of competence
1	**Not Competent. "Does not meet standards".**
2	**Approaching Competence. "Needs further work on key elements".**
3	**Competent. "Satisfactory level - Needs further improvement".**
4	**Highly Competent. "Meets standards of senior resident".**
5	**Mastered. "Superior level raising up to specialist".**

Topic Presentation Evaluation Form

Resident Name			
Submission Date		Level	

Please use the grade scale in table below:

Scores 1 or 5 (*) have to be explained in the comments sections. Failure to do so will void the evaluation. Detailed explanation is provided at the end of the report.

	Not competent*	Approaching competency	Competent	Highly competent	Mastered *	
	1*	2	3	4	5*	

Pass Mark is 60 out of 100 = 60%

Documentation	Grade
The material presented addresses the topic adequately.	
The content is supported by pertinent literature and clinical illustrations.	
The concluding statement offers a clear and straightforward summary.	
The slides and images were well-structured and didn't disrupt the flow.	
Efficient utilization of diagrams, charts, and visual aids.	
Management of time was adequate.	
Total out of 60	
Documentation Comments:	

Presenter	Grade
The presenter showcased a solid grasp of the topic and sustained an engaging presentation.	
The presenter's behavior and attitude during the presentation, including reactions to discussions and feedback.	
The presenter built a strong connection with the audience.	
The presenter was thoroughly organized and well-prepared.	
Total out of 40	
Presenter Comments:	

Overall score	
This score is an average of multiple evaluators	
Program Director:	
Date	
Signature	

Grade	Guide for evaluation and level of competence
1	**Not Competent. "Does not meet standards".**
2	**Approaching Competence. "Needs further work on key elements".**
3	**Competent. "Satisfactory level - Needs further improvement".**
4	**Highly Competent. "Meets standards of senior resident".**
5	**Mastered. "Superior level raising up to specialist".**

Wellness Report

Resident Name			
Date		**Academic level**	

This form is confidential, and the resident can choose not to submit it to KIMS if it contains private information.
If you don't have any concerns, please write "NONE." If you do have concerns, kindly provide details in the text box.

Academic Progress	
Basic knowledge & understanding	
Courses or classes	
Literature review	
Didactic evaluations	
Examinations	

Clinical Progress	
Clinical requirements	
Clinical skills	
Interaction with staff and patients	
Clinical evaluations	
Other	
Other areas of concerns	
Other areas of improvements	

Faculty Comments

Objectives to focus on

Progress Plan	**Timeline**

Next meeting date on: The next end of rotation unless the resident submits a form.

Resident (Name/ Date/ Signature)	**Supervisor (Name/ Date/ Signature)**	**Program Director (Date/ Signature)**

End of Rotation Evaluation

Kuwait Institute for Medical Specializations

Name of the Resident:
CIVIL ID: **Current Residency level** **R3 R4 R5**
Rotation: 1st (OCT-DEC), 2nd (JAN-MAY), 3rd (JUN-SEPT) ACADEMIC YEAR 2021-2022

END OF ROTATION EVALUATION REPORT
Kuwait Board of Endodontics 202

No.	Module	Results	Comments
1	Lit review	PASS/FAIL Mark %	
2	Core course	PASS/FAIL Mark %	
3	Core course	PASS/FAIL Mark %	
4	Case presentation	PASS/FAIL Mark %	
5	Topic presentation	PASS/FAIL Mark %	
6	Clinics and requirements	PASS/FAIL Mark %	

Expectations				
A rationale must be provided to support ratings with asterisks.				
*Rarely meets	Inconsistently meets	Generally meets	Sometime exceeds	*Consistently exceeds
1	**2**	**3**	**4**	**5**

MEDICAL EXPERT		
		Average
a	Basic science knowledge	
b	Clinical knowledge	
c	Data gathering (History and physical examination)	
d	Choice and use of ancillary tests (e.g. Lab. Tests)	
e	Soundness of judgment and clinical decision	
f	Performance under emergency conditions	
g	Self-assessment ability (insight)	

PROCEDURES AND CLINICAL SKILLS		
Demonstrates the ability to perform diagnostic and therapeutic procedures required in (Endodontics)		
		Average
a	History Taking	
b	Diagnostics tests and Radiographs	
c	Sound Diagnosis	
d	Profound Anesthesia and Isolation	
e	Working length determination & Instrumentation (NS RCT and NS RETX)	
f	Fractured instruments removal, Post removal, Ledge bypass….	
g	Obturation	
h	Post and Core Build up	
i	Recall	
j	Minimizes risk and discomfort to patients / (Microsurgery)	
K	Performs treatment procedures required in the rotation / (Microsurgery)	

COMMUNICATOR		
		Average
a	Establishes therapeutic relationship with patients/families	
b	Delivers understandable information to patients/families	
c	Maintains professional relationship with other health care providers	
d	Provides effective counseling to patients/families	
e	Provides clear and complete records and reports	

COLLABORATOR		
		Average
a	Demonstrates ability to accept, and respects opinions of others	
b	Work effectively in a team environment	
c	Consults effectively with other physician and healthcare providers	

MANAGER		
		Average
a	Manages time effectively	
b	Allocates health care resources effectively	
c	Works effectively in a healthcare organization	
d	Utilizes information technology effectively	
e	Practices evidence-based dentistry	

HEALTH ADVOCATE		
		Average
a	Is attentive to preventive measures	
b	Is attentive to issue of public health	
c	Advocates on behalf of patients	
d	Involve patients/families in decision making	

SCHOLAR		
		Average
a	Attends and contribute to rounds, seminars and learning events	
b	Accepts and acts on constructive feedback	
c	Takes an evidence-based approach to the management of problems	
d	Contributes to the education of other trainees, and health care professionals	
Participates/completes a scholarly project related to (Endodontics) ☐ YES ☐ NO		

PROFESSIONAL		
		Average
a	Recognizes limitations and seeks advice when needed	
b	Discharges duties and assignments responsibly and in timely manner	
c	Report facts accurately, including own errors	
d	Maintains appropriate boundaries in work and learning situations	

AVERAGE SCORE FOR ALL CANMEDS ROLES	

I certify that I have read all parts of this evaluation report and have discussed it with my supervisor

Name/Signature of Trainee:

Date:

Name/Signature of supervisor:

Date:

Note: Please send completed and signed forms to the program director.

KUWAIT BOARD OF ENDODONTICS

Tutor Evaluation form

Course Title/Rotation	Clinical Teachings						
Site	Salmiya						
Tutor	{{Name}}						
Scholar	1	2	3	4	N/A	Average	
Shows enthusiasm about teaching and enjoys interacting with residents							
Conducts discussions that are interesting and stimulating and include topics that are important and relevant to resident							
Teaches approaches to problems and basic principles							
Facilitates discussions in clear, organized, focused fashion and involves residents							
Provides constructive feedback and criticism in a supportive way							
Provides good supervision, allowing the resident to take responsibility, but willing to help when necessary and appropriate							
Teaches critical appraisal and evidence based dentistry							
Medical Expert	**1**	**2**	**3**	**4**	**N/A**		
Provides teaching that is clinically oriented, accurate, in-depth and up-to-date							
Role model with good knowledge and good clinical and problem solving skills							
Communicator	**1**	**2**	**3**	**4**	**N/A**		
Provides feedback to learners about their interactions with patients, families and colleagues							
Teaches communication skills by demonstrating good inter-personal skills							
Collaborator	**1**	**2**	**3**	**4**	**N/A**		
Role model working collaboratively with other health care professionals							
Manager	**1**	**2**	**3**	**4**	**N/A**		
Provides support for team, and helps work run smoothly and efficiently (ex, attend clinic on time, signs documents on time, stays late to make sure work is done)							

Includes quality assurance / quality improvement and patient safety issues in teaching. Solves daily issues promptly							
Advocate	**1**	**2**	**3**	**4**	**N/A**		
In discussions, identifies advocacy issues, such as health risks, disease prevention, and public health issues							
Professional	**1**	**2**	**3**	**4**	**N/A**		
Includes ethical issues and professionalism in teaching							
Is accessible and available, spends appropriate time with resident							

Additional comments:

Grading Score

Strongly Disagree	1
Disagree	2
Agree	3
Strongly Agree	4
Not Applicable to this course/rotation	N/A

Research Methods in Clinical Dentistry

This course provides a practical introduction to research methodology in clinical dentistry. It is designed to enable residents to gain a familiarity with research in the field, to become conversant in selected methods, and apply principles to issues in public health, medicine, dentistry, and related fields.

The course starts with basic principles of how, where, and what information residents should search for. It then goes on touching on essential topics in epidemiology and biostatistics. Epidemiology is the science underlying public health and is used by individuals in almost all arenas of health. Epidemiology can be used to address issues of environmental health, medicine, dentistry, injuries, psychiatric disorders, genetics, and social inequities, among other topics. Biostatistics is often used to investigate the epidemiology of a disease or health issue, and the course will discuss biostatistics concepts as part of the science of population health.

During the course, residents will learn about the design and interpretation of epidemiological studies and the statistical methods that underpin many of their founding principles. This short course is intended to be an intensive introduction to epidemiology and biostatistics and at the end of the course residents will learn what Evidence-Based Dentistry (EBD) is, how to read a scientific article and be able to critically appraise it well.

Aims:

- Residents should understand how epidemiology and biostatistics can be applied to the scientific methodology in clinical dentistry.
- Residents should be able to read, evaluate and critique scientific articles
- Residents should demonstrate knowledge in evidence-based dentistry and its importance in clinical practice

Learning Objectives:

At the completion of the course residents will be:

- Able to understand the meaning and importance of research to science and to clinical dentistry.
- Critical consumers of the public health, medical, and dental literature by understanding the basic principles and methods of epidemiology, including disease (outcome) measures, measures of association, study design options, bias, confounding, and effect modification
- Able to interpret descriptive epidemiologic results in order to develop hypotheses about possible risk factors for a disease
- Able to design valid and efficient studies to address public health and clinical problems
- Able to organize, summarize, and display quantitative data

- Be capable of critically reading and reviewing scientific articles in their area of specialization, with special attention to understanding whether correct statistical analyses were chosen and properly applied
- Able to understand the hierarchy of strength of evidence and the concept of evidence-based practice
- Comfortable interpreting statistical methods for calculating summary estimates, measures of variability, and confidence intervals

Lecturer(s): Dr Saad Alqahtani and Dr Jagan Baskaradoss

Lectures' Timetable:

No.	Session Title	Intended Learning Outcome	Readings	Assignments
1	Introduction to Course and Research (Lecture)	– Describe the course to the student – Outline student responsibility – Outline grading system in the course – Outline the distribution of lectures – Define the meaning of the research – Outline the importance of research – Outline the research process and type of research – Describe writing-up articles	Handout distributed to residents	
	Searching for Scholarly Dental Information (PBL – Self-directed Learning)	– Demonstrate the ability to browse the articles by name or subject – Demonstrate the ability to form a dental search strategy – Compose a key word for searching procedures – Prepare a search strategy for the topic – Choose the appropriate key words – Operate PUBMED search using the internet – Illustrate how to save and use searched strategy and search output	Handout distributed to residents	
	(PBL - Resident Presentations)		COURSERA Online	

2	Epidemiology I Lecture	– Define epidemiology, epidemic, epidemic and pandemic – Differentiate between prevalence and incidence – Calculate prevalence and incidence – Define exposure, outcome, and covariate – Differentiate between descriptive and analytical studies – Differentiate between observational and interventional studies – Recognize types, advantages, and disadvantage of each study design	Handout distributed to residents	
	Identifying different study designs (PBL – Self-directed Learning)	– Demonstrate the ability to identify the study designs – Demonstrate the ability to form a dental search strategy to identify studies based on design	Handout distributed to residents	
	(PBL - Resident Presentations)		COURSERA Online	Quiz 1
3	Epidemiology II (Lecture)	– Recognize the types of variables – Recognize the confidence interval – Recognize specificity and sensitivity – Recognize steps for hypothesis testing – Recognize the errors of hypothesis testing – Interpret the meaning of p value in hypothesis testing – Understanding errors in hypothesis testing	Handout distributed to residents	
	Understanding hypothesis testing (PBL – Self-directed Learning)	– Demonstrate the ability to identify the terms p value, type 1 and 2 errors, bias confounding – Demonstrate the ability to identify bias in studies	Handout distributed to residents	
	(PBL - Resident Presentations)		COURSERA Online	Quizzes #10, 11, 16
4	Epidemiology III (Lecture)	– Understand different terms for measurement of association (Odds ratio, risk ratio, etc)	Handout distributed to residents	

		– Calculate measure of association for cross sectional, cohort, case control and RCT		
	Searching for Scholarly Dental Information (PBL – Self-directed Learning)	– Demonstrate the ability to identify and interpret the measures of association in studies	Handout distributed to residents	
	(PBL - Resident Presentations)		COURSERA Online	Quizzes #17, 18
5	Biostatistics I (Lecture)	– Recognize basic terminology in statistics – Describe types and level of measurement of variables – Recognize sampling techniques – Differentiate between probability and non-probability sampling – Interpret frequency tables – Interpret measures of central tendency – Recognize advantages of mean, median and mode – Recognize circumstances whereby measured of central tendency should not be used	Handout distributed to residents	
	Reviewing Statistics of published literature (PBL – Self-directed Learning)	– Interpret results of statistical analysis – Differentiate clinical from statistical significance – Summarize the role of the editor add other scientists in the peer review process – Describe levels of measurement	Handout distributed to residents	
	(PBL - Resident Presentations)		COURSERA Online	Quizzes #2-5, 12-15
6	Biostatistics II (Lecture)	– Recognize features of a box plot – Recognize bar and pie charts as charts used in nominal/ordinal data – Describe features of histogram and step and leaf plot – Describe trends in a line chart – Recognize advantages of standard deviation, range, variance and interquartile range	Handout distributed to residents	

		− Recognize circumstances whereby measured of spread should not be used − Describe the meaning of precision in statistics − Interpret standard error and confidence intervals − Choose an appropriate statistical test for hypothesis		
	Training on SPSS Statistical Package (PBL – Self-directed Learning)	− Demonstrate who to manipulate and recode numbers in the data sheet − Calculate mean median mode central tendency and central dispersion − Demonstrate ability to categorize variables according to their frequency distribution − Perform recoding of the variables into new variables − Calculate the p value and values of chi square, t-test and ANOVA − Interpret the meaning of significant association between variables	Handout distributed to residents	
	PBL - Resident Presentations:		COURSERA Online	Quizzes #6-9
7	Evidence Based Dentistry I (Lecture)	− Define evidence-based dentistry − Define the art and science of dentistry − Rate the quality of the literature − Define systematic review − Recognize how to conduct a systematic review − Recognize examples of evidence-based dentistry	Handout distributed to residents	
	End Note Hands-on (PBL – Self-directed Learning)	− Explain the different styles of reference − Demonstrate how to manually write reference in Harvard and Vancouver styles − Demonstrate the skill in writing references − Understand the reference styles used in some of the popular dental journals − Explain the process of uploading and importing references from PubMed, google scholar	Handout distributed to residents	

		− Demonstrate how to import references from web of science − Explain the process of searching for full text using endnote software − Demonstrate the process of adding a new reference − Explain on how to insert one or move references in a word document − Demonstrate how to format and edit bibliography		
	(PBL - Resident Presentations)		COURSERA Online	Quiz
8	Evidence Based Dentistry II (Lecture)	− Define the responsibilities of practitioners − Recognize the current state of the science − Recognize the limitations of evidence-based dentistry − Recognize the sources of literature including textbooks and peer-reviewed journals − Judge the quality of a journal including a) peer review b) journals' sponsorship c) editorial board, advisory board, consultants d) nature of the papers e) advertisement f) production standards.	Handout distributed to residents	
	Discussion of Critical Appraisal I (PBL – Self-directed Learning)	− Illustrate the ability of students to critically appraise the literature and present it in a logical manner. − Explain the process of performing critical appraisal of cohort and case control studies − Demonstrate the skill of appraising cohort and case control studies	Handout distributed to residents	
	(PBL - Resident Presentations)		COURSERA Online	Quiz
9	Evidence Based Dentistry III (Lecture)	− Recognize the critical reading-evaluating the quality of a published paper − Recognize the hierarchy of the quality of information − Recognize the quality issues in judging research reports − Judge the quality issues in narrative reviews of the literature	Handout distributed to residents	

		− Judge the quality issues in commentaries − Understand the principles of critical appraisal and its role in evidence-based practice − Appraise the validity and reliability of research papers − Recognize the relevance of published research − Recognize the critical appraisal of different types of study designs − Appraisal of an RCT and Systematic Review using a critical appraisal checklist − Appraise the validity and reliability of research papers − Assess the relevance of published research to your own work		
	Discussion of Critical Appraisal II PBL – Self-directed Learning	− Illustrate the ability of students to critically appraise the literature and present it in a logical manner. − Explain the process of performing critical appraisal of systematic reviews and controlled trials − Demonstrate the skill of appraising systematic reviews and controlled trials	Handout distributed to residents	
	PBL - Resident Presentations		COURSERA Online	Quiz
10	**Final Exam**	**THEORY EXAM** Comprehensive		
		PRACTICAL EXAM Journal Review and Viva		

Assessment Methods:

- **30% - Attendance and participation in class discussion- questions and critiques**
  There will be six graded assignments that will each count towards 5% of the grade (30% for both combined). Each resident must hand in their own assignment on the due date.
  One Critique of Literature Seminar is scheduled for the last week of the course. Each resident will critically appraise **three assigned papers** independently. The papers discussed on this day cover a wide variety of topics. All papers will be provided by the instructor and the resident will prepare a short PowerPoint presentation to discuss the assigned papers.

- **70% - Final Exam**
  During the exam week of the course, each resident will sit for a written exam which consists of multiple-choice questions. The exam will count towards 70% of the grade.

Recommended Reading:
There are two suggested textbooks for this course, one for the epidemiology part and another for the statistical part.

- **Epidemiology Text:** The epidemiology textbook is *Oral Health Epidemiology: Principles and Practice, 1st Edition by Amit Chattopadhyay*. Other class readings material will be available either in class or online, including journal articles, citations, and weblinks. Please review the syllabus to determine which readings are required and which are optional.

- **Biostatistics Text:** The statistical textbook is *Biostats: Data Analysis for Dental Health Care Professionals, Revised Edition by Jane A. Weintraub*. Other textbooks that a resident may already own may also be acceptable, since the material covered during the course is basic and included in most introductory texts.

Embryology and Oral Histology

This course is intended to provide the residents with fundamental knowledge of general embryonic development and in-depth knowledge about growth and development of structures of the head and neck, and their relevance to the assessment and treatment of patients.

Aims:

- To understand the basic knowledge of general embryonic development
- To understand in-depth knowledge about the embryonic development of head and neck structures
- To describe normal and abnormal facial development including common malformations
- Recognise histological structures in the oral cavity and the surrounding structures

Learning Objectives:

Have a thorough understanding of:

- The general development of face and nasal cavity
- The development of the palate
- The development of the tongue
- The development of salivary gland
- The development of tooth structures and supporting tissues
- The development of facial malformation and dental anomalies
- Structure of enamel, dentine pulp, cementum, and bone
- Structure of periodontal ligament
- Formation stages and composition of tooth apparatus

Lecturer(s): Dr Mashael AlNaser and Dr Bader Albaqshi

Lectures' Timetable:

No.	Topic
1	General Embryology: "Where did we come from? Where are we going?"
2	Dental Embryology
3	Development of face, oral soft and hard tissues: "Face and teeth disclosed"
4	Histology of the oral cavity and surrounding structures

Assessment Methods:

- 30% - Attendance and participation

- 70% - Final Written Exam and OSCE

Recommended Reading:

- Langman's Medical Embryology - TW Sadler (14th ed.)
- Student Workbook for Illustrated Dental Embryology, Histology and Anatomy. Mar 12, 2015 – Margaret J. Fehrenbach RDH MS.

Head and Neck Anatomy

This course will cover the basic anatomy of the head and neck, with emphasis on the clinical significance of the structures and processes of each region. Lectures will provide an overview of the surface anatomy, osteology, blood supply, innervation, and lymphatic drainage of each of the structures in the head and neck. Small group clinical sessions will allow the residents to assess and transfer theoretical knowledge to clinical situations, such as recognising developmental deformities, infections, and head traumas.

Aims:

Be familiar and recognise important structures in the head and neck region, and transfer this knowledge to clinical applications, and relate to radiological images and studies

Learning Objectives:

Upon completion of this course, all dental residents should be able to:

- Use appropriate terminology to effectively communicate information related to the anatomy of the head and neck
- Identify anatomic landmarks of the head, face, neck, and oral cavity
- Describe the anatomy of the oral structures including skeletal, muscular, lymphatic, circulatory, and nervous systems. Specifically, students will be able to:
    a. Identify and describe the features of cranial and facial bones.
    b. Identify and describe the anatomy and functions of the temporomandibular joint, in health and disease.
    c. Identify the origin, insertion, and describe the actions of all muscles of mastication and face.
    d. Identify and describe the location, structure, and function of the cranial nerves, including the structures they innervate.
    e. Identify and describe the location, structure, and function of the salivary glands.
    f. Identify the location and structure and describe the function of the lymph nodes of the head and neck.
    g. Identify and describe the location, structure, and function of the major blood vessels of the head and neck.

- Identify all extraoral and intraoral structures and landmarks that are visible or palpable on a resident partner, including muscles, lymph nodes, bones, nerves, and mucosal landmarks
- Accurately locate all oral structures, discuss their clinical significance, and demonstrate an understanding of the complete anatomy of the head and neck
- Apply all reviewed information in daily clinical practice.

Lecturer(s): Dr Thamer AlAnezi/ Dr Yahya AlYahya

Lectures' Timetable:

No.	Topic
1	Triangles of the Neck
2	Skull, Cranial Cavity, Foramina and Cranial Nerves
3	Infratemporal Region- Muscles of Mastication
	Infratemporal Region- Mandibular n. and Maxillary n.
	Infratemporal Region- Maxillary artery
4	TMJ
5	Oral Cavity and Palate
	Salivary Glands
6	Nasal Cavity and Nasal Sinuses
	Summary of Blood Supply and Lymphatic Drainage
7	Principles of Management of Odontogenic Infections

Assessment Methods:

- 30% - Attendance and participation
- 70% - Final Written Exam and OSCE

Recommended Reading:

- Illustrated Anatomy of the Head and Neck. Jan 19, 2016 – Margaret J. Fehrenbach RDH MS, Susan W. Herring PhD
- Student Workbook for Illustrated Dental Embryology, Histology and Anatomy. Mar 12, 2015 – Margaret J. Fehrenbach RDH MS

Presentation List:

No.	Topic	Reading Materials
1	Anterior and Posterior Triangle of the Neck	Chapter 2 and 11 of M.J. Fehrenbach textbook
2	Skull, Cranial Cavity (The bones of skull, foramina, and cranial nerves only	Chapter 3 and 4 of M.J. Fehrenbach textbook

3	Face and Scalp (Muscles of facial expression with blood and nerve supply)	Chapter 4 of M.J. Fehrenbach textbook
4	Temporal fossa AND Infratemporal Fossa (Mandibular nerve, Maxillary nerve and Maxillary artery)	Chapter 6 and 8 of M.J. Fehrenbach textbook
5	TMJ and Muscles of Mastication	Chapter 5 of M.J. Fehrenbach textbook and Chapter 8: Fundamentals of Oral Histology and Physiology by Hand and Frank
6	Oral Cavity and Palate	Chapter 4 and of M.J. Fehrenbach textbook
7	Parotid Gland and Salivary glands	Chapter 7 of M.J. Fehrenbach textbook and Chapter 11 of Fundamentals of Oral Histology and Physiology by Hand and Frank
8	Nasal Cavity and Nasal Sinuses	Chapter 4 of Clinical Head and Neck Anatomy for Surgeons by Brennan, Mahadevan and Evans
9	Head and Neck Lymphatics	Chapter 10 of M.J. Fehrenbach textbook

Local Anesthesia in Dentistry

This course comprises concise lectures in local anaesthetics used in dentistry, including their pharmacokinetics, dosages, modes of use and administration techniques. This course will be a reintroduction to dental anaesthesia and aims to improve the resident's local anaesthesia (LA) clinical skills.

Aims:

- Thorough review of the fundamentals of local anaesthesia
- Lay down the foundation for safe practice in dentistry
- Teach the residents how to calculate the maximum dose of different types of LA used in the dental clinic.

Learning Objectives:

- To be able to perform all intra-oral LA techniques
- To encourage the residents to be confident making decisions with regards to administering local anaesthesia
- To enable the residents to recognize incidents related to administering LA and be able to manage them
- By the end of this course, residents should know the maximum recommended dose of each local anaesthetic and be able to administer an effective adequate local anaesthesia without exceeding the maximum dose

Lecturer(s): Dr Mahmoud Anous , and Dr Fatma Alherz

Lectures' Timetable:

No.	Topic
1	Local anaesthesia review 1. Structures 2. pH 3. MOA 4. Onset, potency and duration 5. Types of LA 6. Systemic effect 7. Metabolism
2	Calculating the correct dose
3	Management of failed local anaesthesia
4	New devices for local anaesthesia delivery
5	Complications and management of local anaesthesia administration
6	Anxiety control in the dental field

Assessment Methods:

- 30% - Attendance and participation
- 70% - Final Written Exam and OSCE

Recommended Reading:

- Fonseca R, Barber H, Matheson J, 2009 Oral and Maxillofacial Surgery 2nd Edition. US Saunders.
- Andersson L, Kahnberg K, Pogrel MA 2010 Oral and Maxillofacial surgery. UK, Wiley-Blackwell
- Moore P & Hersch E Local anesthetics: Pharmacology and toxicity. Dent Clin N Am 2010; 54: 587-599
- Baker E 2010 Head and Neck Anatomy for Dental Medicine. New York, Thieme Medical Publishers
- Meechan J, How to overcome failed local anesthesia. BDJ 1999; 186(1): 15-20
- Malamed et al, Needle Breakage: incidence and prevention. Dent Clin N Am 2010; 54: 745-756.

Medical Emergencies in the Dental Setting

This one-day course is intended to provide the residents with fundamental knowledge of the most commonly occurring medical emergencies in the dental setting. It enhances knowledge on the practical aspects of recognizing and managing these cases. Additionally, the residents will review the updates on the basic life support (BLS) protocols and have the chance to practise them. Also, each resident will be assigned a topic and will be asked to make a presentation on that topic and should include all relevant information from the scientific literature. The residents will be assessed based on the accuracy, suitability, and completeness of the information provided as well as ability to answer questions.

Aims:

- Thorough review of the most common medical emergencies that occur in the dental setting
- Lay down the foundation of safe practice in the dental clinic

Learning Objectives:

- To understand the importance of obtaining a thorough medical history
- To be able to recognize the occurrence of the most common medical emergencies
- To be able to act promptly upon medical emergencies if they occur
- To understand the local policies of managing medical emergencies in the dental setting
- To be competent in providing BLS when required
- To understand one limitation when dealing with medical emergency cases

Lecturer(s): Dr Mahmoud Anous and Dr Dalal AlOmar

Lectures' Timetable:

No.	Topic
1	Obtaining medical history
2	The most common medical emergency occurring in the dental setting
3	Recognise the signs and symptoms of medical emergencies
4	Management of the most common medical emergency cases
5	Reviewing the BLS protocol
6	Introduction to the crash cart's medication and how to use them
7	The local protocol for dealing with medical emergencies

Assessment Methods:

- 50% - Final Written Exam and OSCE
- 20% Attendance and participation in class discussion- questions and critiques

- 30% - Presentation;
    - 10% - Outline and preparation
    - 10% - Content
    - 5% - Adhering to allocated time (40–45-minute presentation)
    - 5% - Captivating audience attention

Recommended Reading:

- Scottish Dental Effectiveness Programs (SDCEP), Emergency Dental Care, Dental Clinical Guidance

Oral Pathology and Oral Medicine

This course is designed to advance residents' clinical knowledge of the principles that govern oral diseases, and the clinical and patho-biological aspects of diseases that affect the oral and maxillofacial region. Residents will build on basic knowledge and expand their understanding of the clinical signs and symptoms of oral diseases and their management in view of known physiological, biochemical and histopathological alterations. The course will provide residents with enhanced knowledge of common oral mucosal and salivary gland disorders, oral manifestations of systemic diseases, orofacial pain conditions including temporomandibular disorders and the dental management of medically compromised patients. Residents will also be able to apply the principles of radiographic interpretation for identification and differentiation of maxillofacial hard tissue lesions.

Aims:

- Provide opportunities for review and analysis of a wide range of oral disorders and orofacial pain conditions
- Expand the analytical and clinical skills of residents relative to clinical signs and symptoms of oral diseases and oral manifestations of systemic diseases
- Provide fundamental knowledge on the dental management of medically compromised patients

Learning Objectives:

Upon completion of this course residents will have an increased ability to:

- Adopt a systematic approach to extra and intra-oral examinations, including screening for head and neck cancers
- Perform full documentation of cases by taking extra-oral and full mouth intraoral photographs, and recording of all patient data
- Describe clinical and radiographic images and formulate differential diagnoses of common oral soft and hard tissue lesions

- Differentiate between normal oral variants and pathological lesions, and distinguish suspicious or difficult to manage lesions for consultation referral
- Select appropriate diagnostic aids and interpret their results to reach diagnosis of a variety of oral lesions
- Demonstrate knowledge of the indications of other extraoral imaging techniques like sonography, sialography, MRI, CT and PET scans in the aid of the diagnosis of common orofacial conditions
- Display proper evaluation and risk assessment of the medically compromised patients and make appropriate modifications to dental treatment based on the medical history, medications, and interpretation of basic laboratory testing results and imaging
- Demonstrate adequate knowledge concerning the mechanisms of action, clinical use, side effects and drug interactions of commonly prescribed drugs in dental practice, including local anesthetic, analgesic, and antimicrobial drugs
- Recognize common oral lesions in the pediatric population
- Understanding the role of the pediatric dentist in early diagnosis of oral conditions, and referral or consultation for advanced cases and cases that need different treatment considerations
- Describe the anatomical and physiological substrates of pain, and recognize the most common pain disorders in the orofacial region, including temporomandibular pain disorders
- Screen for non-odontogenic orofacial pain conditions by completing comprehensive history and clinical examinations, and be familiar with current pharmacological and non-pharmacological treatment modalities for chronic pain conditions
- Show efficient and professional communication with patients, colleagues, instructors, clinical and laboratory staff
- Illustrate the importance of lifelong learning and exploring evidence-based research

Lecturer(s): Dr Dalal AlOmar, Dr Anwar Almuzaini and Dr Fatma Alhendi

Lectures' Timetable:

No.	Topic
1	Introduction: Evaluation of Dental Patient
2	Management of Medically Compromised Patients – I
3	Management of Medically Compromised Patients – II
4	Oral Manifestations of Systemic Diseases
5	Developmental Defects of the Oral and Maxillofacial Region
6	Common Oral Mucosal Disorders – I
7	Common Oral Mucosal Disorders – II
8	Oral Cancer and Precancerous Lesions
9	Orofacial Pain Disorders
10	Temporomandibular Joint Disorders

11	Oral Radiology: Interpretation of Common Jaw Lesions
12	Odontogenic Cysts and Tumors

Assessment methods:

- 70% - Final Written Exam and OSCE
- 30% Attendance and participation in class discussion- questions and critiques

Recommended Reading:

- Burket's Oral Medicine, 12th edition
- Dental Management of the Medically Compromised Patients - Little and Falace, 9th edition
- Orofacial pain: Guidelines for Assessment, Diagnosis, and management 5th edition
- Oral and Maxillofacial pathology - Neville, 4th edition
- Oral Radiology principles and interpretation - White & Pharoah's, 8th edition

Digital Dentistry and Dental Biomaterials

This program will equip you to be a leader in the future of dentistry. Digital dentistry is revolutionising every aspect of dental care, from diagnosing problems with intraoral scanners and 3D imaging to planning treatments with computer-aided design (CAD) software and creating custom restorations with computer-aided manufacturing (CAM) technology. This course will get you up to speed on these cutting-edge tools and techniques, so you can integrate them seamlessly into your practice and improve efficiency, accuracy, and patient satisfaction.

We will also delve into the materials used in modern dentistry, across various applications in the clinic and lab. You will learn to critically evaluate information about these materials to make informed choices for each patient's treatment. The course covers the fundamental science of dental materials, including polymers, composites, metals, and ceramics, used in all branches of dentistry. By understanding their chemical, physical, and mechanical properties, you will gain a strong foundation for selecting the most suitable material for any dental situation. You will graduate from this course with a comprehensive grasp of how these materials behave in the clinic and lab, allowing you to make evidence-based decisions for optimal patient care.

Aims:

- To maintain up-to-date knowledge related to dental materials.
- To sufficiently understand the benefits and shortcomings of digital dentistry on a didactic and practical level to be able to apply this technology predictably in the dental practice.

Learning Objectives:

- Critically evaluate digital dentistry technologies: Analyse the advantages and limitations of intraoral scanners, 3D imaging, and CAM technology for diagnosis, treatment planning, and restoration manufacturing.
- Integrate digital workflows into multidisciplinary dental care: Develop a solid understanding of how to seamlessly incorporate digital tools and techniques into existing clinical procedures to improve efficiency and accuracy.
- Apply knowledge of biomaterials to patient care: Critically evaluate information on various dental materials (polymers, composites, metals, ceramics) used in different applications across dentistry.
- Select appropriate materials based on scientific principles: Utilise knowledge of the fundamental science behind dental materials (chemical, physical, and mechanical properties) to choose the most suitable material for specific clinical situations.
- Stay informed about advancements in digital dentistry: Develop skills to continuously learn and adapt to emerging technologies and trends in the field of digital dentistry.
- Understand the principles and uses of artificial intelligence in multiple specialties.
- Communicate the benefits of digital dentistry to patients: Effectively explain how digital tools and advanced materials contribute to improved accuracy, efficiency, and overall patient experience in dental care.

Lecturer(s): Dr. Basil Basha, Dr. Aseel Altemimi, and Dr. Maria Alkhabbaz

Lectures' Timetable:

No.	Topic
1	Impression materials
2	Introduction to digital dentistry – Present and future
3	Intra oral scanning & data acquisition
4	Introduction to dental materials
5	Computer aided manufacturing in dentistry
6	Multidisciplinary approaches
7	Dental Restorations

Assessment Methods:

- 70% - Final written exam and OSCE
- 30% - Attendance and participation in class discussion- questions and critiques

Recommended Reading:

- Sakaguchi and Powers. Craig's Restorative Dental Materials, 13/14th ed. Mosby
- Shen, C., Rawls, H. R., & Esquivel-Upshaw, J. F. (2022). Phillip's Science of Dental Materials, 13th ed. Elsevier

- Sakaguchi, R., Ferracane, J., & Powers, J. (2018). Craig's Restorative Dental Materials, 14th ed. Elsevier
- Ritter, A. V., Boushell, L. W., & Walter, R. (2019). Sturdevant's Art and Science of Operative Dentistry, 7th ed. Elsevier
- Rosenstiel, Land, Fujimoto CONTEMPORARY FIXED PROSTHODONTICS, FIFTH EDITION
- Herbert T. Shillingburg,Donald L. Mitchell, Edwin L. Wilson, FUNDAMENTALS OF FIXED PROSTHODONTICS, FOURTH EDITION

Oral Microbiology

This course is based on a series of lectures on oral microbiology and its clinical application in dental practice. Residents will develop a better understanding of oral infectious diseases and related pathogens as this short course is intended to be an intensive review of oral microbiology and related topics. Lectures and discussions will be based on published scientific papers whether classic or current literature. The course starts with an introduction to oral microbiology, oral microbiome, and oral ecosystem. It then touches on topics related to different dental specialties, such as endodontics, periodontics, and orthodontics and their interaction with oral microbiology. Lastly, the course will cover the subject of immunology and immune system in the oral cavity.

Aims:
By completing this course, residents will be able to understand and discuss a wide range of topics in oral microbiology and microbial diseases of the oral cavity. In addition, residents will understand the clinical implications of oral microbiology.

Learning Objectives:
Upon completion of this course, residents should be able to:

- Have basic education in oral microbiology, oral microbiome, and oral ecosystem, and their relevance in dental practice.
- Have basic understanding in immunology and the immune system, both the innate and the adaptive.
- Have knowledge about normal oral flora and their characteristics.
- Describe different methods in identifying pathogens, which include early microscopic and cultural microbiology investigations to targeted microbiologic analysis, such as immunochemical studies and nucleic acid-based techniques for bacterial identification.
- Have knowledge about dental biofilm, its formation, structure, and significance.
- Understand the aetiology and microbiology of dental caries, periodontal disease, and endodontic infections.
- Develop basic understanding of oral infectious diseases, including bacterial, viral, and fungal infections and the virulence factors of pathogens involved.
- Understand the interaction between orthodontics, periodontics, and endodontics and oral microbiology.

Lecturer(s): Dr. Aaeshah AlKanderi, Dr Ruqaya Almutairi, Dr Dalal Alrashidi, Dr Hessa Albader, and Dr Dr Sherifa Almokhaizeem

Lectures' Timetable:

No.	Lecture's Title
1	Introduction to Oral Microbiology
2	Oral microbiome and the oral ecosystem
3	Microbiology of periodontal disease
4	Microbiology in dental caries
5	Microbiology in endodontics and dental caries
6	Review

Assessment Methods:

- 70% Final written exam and OSCE
- 30% Attendance and participation in class discussion- questions and critiques

Recommended Reading:

Essential Microbiology for Dentistry by Lakshman Samaranayake (4th or 5th Edition); Churchill, Livingstone

He, X. S., & Shi, W. Y. (2009). Oral microbiology: past, present and future.
International journal of oral science, 1(2), 47-58.

Pharmacology in Dentistry

This course is intended to provide the residents with fundamental pharmacological knowledge in dentistry. It will go through a brief revision and updates of basic pharmacological principles, such as drug actions, interactions, and adverse reactions. Residents will learn how to manage pharmacotherapy of medically compromised and special needs populations. Residents will also be familiar with different medications used in dentistry, such as analgesics, antibiotics, antivirals, antifungals, and antiseptics. The course will also provide residents with enhanced knowledge of oral manifestation of medications' side effects.

Aims:

Establish the core pharmacological knowledge and attitude to drug information that will ensure comprehensive and safe dental practice throughout a dentist career.

Learning Objectives:

- To understand the basic pharmacological principles such as drug actions, interactions, and adverse reactions

- To be familiar with different medications used in dentistry, such as analgesics, antibiotics, antivirals, antifungals, and antiseptics
- To be familiar with important drugs interactions and how they affect patient's management
- To be familiar with the potential oral manifestation of medication side effects
- To be competent in prescribing relevant medications
- To understand the current guidelines of prophylactic antibiotics

Lecturer(s): Dr Rawan Al-Khwaiteem

Lectures' Timetable:

No.	Lecture's Title
1	Introduction
2	Assessment of the patient
3	Prescribing for special patients' groups
4	Prescription writing
5	Pain (Odontogenic pain and Facial pain)
6	Bacterial infections
7	Viral infections
9	Fungal infections
10	Mucosal ulceration and inflammation
11	Dose calculation for commonly used medications
12	Oral manifestation of medications
13	Drug interactions

Assessment Methods:

- 70% - Final Written Exam and OSCE
- 30% Attendance and participation in class discussion- questions and critiques

Recommended Reading:

- The Dentist's Drug and Prescription Guide, Second Edition, 2020
- Antimicrobial Prescribing in Dentistry – Good Practice Guidelines, Third Edition, 2020, Faculty of General Dental Practice (FGDP), UK.
- Drug Prescribing for Dentistry – Dental Clinical Guidance, Third Edition, 2016, Scottish Dental Clinical Effectiveness Programme (SDCEP), UK.
- Useful Medications for Oral Conditions, The Reference Manual of Pediatric Dentistry, 2020, American Academy of Pediatric Dentistry

- Prevention of Viridans Group Streptococcal Infective Endocarditis, A Scientific Statement from the American Heart Association, 2021
- Oral Health Management of Patients at Risk of Medication-related Osteonecrosis of the jaw, Guidance in Brief, 2017, Scottish Dental Clinical Effectiveness Programme (SDCEP), UK.

Applied Clinical Dentistry

This intensive two-day module is designed to provide hands-on training and practical application of essential skills required across all dental specialties. It aims to equip residents with the skills necessary to link theoretical concepts covered in the basic sciences course to clinical practices, emphasising key aspects of holistic patient care such as history taking, and examination. In addition to mastering basic clinical competencies, residents will gain a thorough understanding of the legal and regulatory frameworks governing dental practice in Kuwait, ensuring compliance and ethical decision-making in clinical settings. The module aims to prepare residents for clinical practice by offering practical experiences and real-world scenarios that reinforce the core competencies necessary for comprehensive patient management.

Teaching Methods:

- Practical sessions on history taking and patient examination
- Hands-on practice with simulated cases and peer-to-peer exercises
- Workshops on interdisciplinary communication and referral writing
- Review and application of legal and ethical considerations in dental practice

Aims:

- Develop essential clinical competencies
- Hands on training
- Interdisciplinary collaboration
- Understanding legal and regulatory framework
- Preparation for clinical practice

Learning Outcomes:

- To equip residents with the fundamental skills required for patient assessment, including thorough history taking, and accurate clinical examination
- To provide hands-on experience in essential clinical examination, allowing residents to practise and refine their skills in a controlled environment
- To foster an understanding of the importance of interdisciplinary communication and collaboration in delivering high-quality dental care
- To review and master the basics of relevant laws and regulations in Kuwait, ensuring residents are competent in navigating the legal and ethical aspects of dental practice

- To prepare residents for real-world clinical scenarios, ensuring they are confident and competent in performing basic history taking and examination and delivering holistic care

Lectures' Timetable:

No.	Lecture's Title
1	History Taking (Medical History)
2	Examination Extra-Oral Exam Lymph Nodes, Muscles of Mastication, Facial Nerves, TMJ)
3	Examination Intraoral Exam (Molar, Incisor, Canine relationship) Extra-oral Exam (Facial Symmetry, AP Skeletal Classification, ect)
4	Cases and Practical
5	Interdisciplinary Management
6	Practical and Cases
7	Laws and Ethics
9	Case Based Discussion

Assessment Methods:

50 % participation in the sessions
50 % Final written exam and OSCE

Infection Control in Dental Health Care Settings

This one-day supplemental course focuses on the standards that should be followed to ensure the prevention of transmission of diseases among members of the dental team and/or the patients. It details the protocols each member of the dental team should implement to ensure infection control and hence safe practice for themselves and the patients. This course is not compulsory, but attendance is highly recommended.

Aims:

This course aims to build participants' confidence with their infection prevention and control strategies by highlighting policies to reduce risk, ensure best practice and improve efficiency.

Learning Objectives:

- To provide basic infection prevention principles and recommendations for dental health care settings

- To reaffirm that following standard precautions is the foundation for preventing transmission of infectious agents during patient care in all dental health care settings

Lecturer(s): Dr Hanouf Al-Buaijan

Assessment Methods:

Attendance

KIMS Policies:

http://kims.org.kw/pge/uploads/pdf/pdf-981802771.pdf
http://kims.org.kw/pge/uploads/pdf/pdf-329414111.pdf
http://kims.org.kw/pge/uploads/pdf/pdf-846877434.pdf
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