Student should successfully complete 40 Credits courses for specialty diploma and additional 6 Credits Thesis to fulfill the Master's Degree in Endodontics

General Courses

**ANAT 651-General Anatomy and Embryology**  
(1Cr: 1Lec, 2Prac)

**Anatomy:** Cardiovascular system, Respiratory system; Skull, mandible & cervical vertebrae; Scalp and face; Cranial cavity (fossae, folds, venous sinuses & pituitary gland); Orbit; Parotid Region; Temporal & Infracranial Region; Pterygo-palatine fossa; T.M.J.; Nasal cavity; Mouth cavity (lips & cheeks, gum & teeth, tongue and palate); Ear and facial nerve; Posterior triangle of the neck; Anterior triangle subdivisions; Submandibular Region; Thyroid gland; Blood vessels of the neck; Cranial nerves in the neck; Fasciae of the neck; Pharynx; Larynx; Pathway of exteroceptive sensations from the face & teeth to the cerebral cortex; Pathway of taste sensation to the cerebral cortex.  
**Embryology:** Fertilization; Cleavage; Implantation; Formation of the 3 germ layers & their derivatives; Pharyngeal arches & derivatives; Pharyngeal pouches & fate; Branchial sinus, cyst & fistula; Development of face; Development of palate; Development of tongue; Development of thyroid gland; Development of pituitary gland; Development of salivary glands.

**BIOM 602-Basic Biomaterials Science**  
(1Cr: 1Lec, 0Prac)


**BIOM 605-Advanced Biomaterials II**  
(2Cr: 2Lec, 0Prac)

Dental cements, dental restorative resins, dental amalgams, root canal filling materials, dental endodontic instruments, stainless steel, titanium alloys.

**COMD 602-Biostatistics & Research Methodology**  
(1Cr: 1Lec, 0Prac)

Introduction to the course, definitions, Characteristics of data and Collection of data, Sampling (Types of sample, Methods of sample), Essentials for research design (Types of research study, Components of research protocol), Tabular and graphical Presentation of data (Frequency distribution tables, Contingency tables, Bar-chart, Histogram, Frequency polygon and pie-chart), Mathematical presentation of data: Measures of central tendency :Mean, Median, Mode; Measures of variation: Range, Standard deviation, Standard of error, CO-variance, Normal distribution Curve, Hypotheses Formulation, Tests of Hypotheses and significance (Parametric tests): Z test, “t” tests, Correlation test r-test, Analysis of variance F-test, Chi-square test. Non-Parametric tests.
**MICR 651-Microbiology, Immunology & Molecular Biology**
(1Cr: 1Lec, 2Prac)

**Microbiology:** Prokaryotes and eukaryotes; Structure of bacterial cell; Biological requirements for bacterial growth; Bacterial growth: growth curve, kinetic of growth, continuous growth and synchronous growth; Bacterial products: pigments, toxins and enzymes; Genetic elements: Chromosomal and non-chromosomal elements; Mode of transferring genetic elements; Mutation; General properties, structure, classification, replication, cultivation and detection.

**Immunology:** Types of immunity; Immune response; Antigen and antibody; Surface markers on cells of immune system; Immune deficiency diseases; Hypersensitivity and autoimmunity; Serological techniques.

**OPTH 603-Advanced Oral Pathology**
(2Cr: 2Lec, 2Prac)

Introduction to oral pathology; Developmental anomalies of teeth; Dental caries; Pulp diseases; Periapical pathologic conditions; Osteomyelitis; Cysts of oral and para oral region; Bone diseases; Salivary gland diseases; Developmental abnormalities of oral and para oral tissues; Viral, bacterial and mycotic diseases. Classification, etiology and pathogenesis, microbiologic factors, clinical features and differential diagnosis. Microscopic features and management. Oral ulceration and vesiculo bollous lesions; Oral manifestations of AIDs; Metabolic and endocrinal disturbances; White lesions; Precancerous conditions and lesions; Etiology of oral cancer and Oncogenes; Salivary gland tumors; Odontogenic tumors; Non-Neoplastic inflammatory overgrowth of the oral mucosa; Non-Odontogenic epithelial tumors; Non-Odontogenic Mesenchymal tumors; Pigmented oral lesions; Muscle tumors; Malignant lymphomas and leukemia; Nerve tissue tumors, classification, clinical and microscopic features; Undifferentiated head and neck tumors; Oro-facial pain; Arterio-Venous Malformations; Diseases of TMJ; Forensic problems and oral pathology.

**ORBL 601-Oral Biology**
(2Cr: 2Lec, 2Prac)

Development and growth of the teeth; Enamel; Dentin; Pulp; Cementum; Periodontal ligament; Embryology; Maxilla and mandible; Oral Mucosa; Salivary Glands; Bone and alveolar process; Eruption and shedding; Temporo-mandibular joint; Maxillary sinus & lymph drainage; Wound healing, repair & regeneration; Physiologic tooth forms protecting the periodontium; Dental and Para dental Tissues; Advanced Oral Biology.

**PHYL 651-Advanced General Physiology**
(1Cr: 1Lec, 0Prac)

Blood; Digestive system; Autonomic Nervous System; Excitable Tissues; Endocrine System; Renal system; Cardiovascular system; Central nervous system; Renal system; Respiratory System.
Specialty Courses

**ENDO 601-Endodontics I**  
(3Cr: 2Lec, 3Prac)

Modern Endodontic Therapy; Anatomy of the dental pulp; Endodontic instruments; Microbiology of Endodontics and Asepsis in Endodontic Practice; Pulpal Pathology: Its Etiology and Prevention.

**ENDO 602-Endodontics II**  
(6Cr: 3Lec, 9Prac)

Periapical Lesions; Root Resorption; Endodontic radiography; Endodontic diagnostic procedures; Differential Diagnosis and Treatment of Dental Pain; Preparation for Endodontic Treatment; Endodontic Cavity Preparation.

**ENDO 603-Endodontics III**  
(6Cr: 3Lec, 9Prac)

Obturation of the Radicular Space; Endodontic Surgery; Endodontic periodontal relationship; Outcome of Endodontic Treatment and Re-Treatment; Endodontic Mishaps: Their Detection, Correction, and Prevention; Endodontic emergency treatment (non-traumatic emergencies).

**ENDO 604-Endodontics IV**  
(6Cr: 3Lec, 9Prac)

Endodontic emergency treatment (traumatic emergencies); Tooth Discoloration And Bleaching of Non Vital Teeth; Vital pulp therapy; Management of teeth with immature apices; Geriatric endodontics; Restoration of the Endodontically Treated Tooth; Nickel titanium rotary instrumentation; Ultrasonic endodontics.

**ENDO 696-Seminars in Endodontics**  
(2Cr: 2Lec, 0Prac)

Seminars in recent topics in endodontics.

**Elective Courses**  
(6 Cr: 6 Lec, 0 Prac)

Could be selected from different dental specialties.