

Course Outline

220 credit hour system

INORGANIC CHEMISTRY (PHCM 111)

The course deals with the basic principles of chemistry and the application of chemistry in order to provide the student with a clear and logical presentation of these concepts. The student should be able to use the knowledge of atomic and molecular structure to predict chemical bonding and reactivity,

The course of inorganic chemistry in the first semester comprises a two-hour lecture and two hours of practical sessions weekly.

SYLLABUS

. Measurement

- SI units, uncertainty in measurement, significant figures in calculations, extensive and intensive properties, atomic masses, formula masses.

. Stoichiometry

- Law of conservation of mass, balancing chemical equations, mass relationship and limiting reagents, theoretical, actual and percent yield, molecular and structural formulas.

. Atomic structure

- Electrons, protons, and neutrons, Bohr model of hydrogen atom, Quantum numbers, pictures of orbitals.

. Electronic structure and periodic table

- Electron configuration, the periodic table, atomic and ionic radii, ionization energy, electron affinity, chemical properties and the periodic table.

. Chemical bonds

- Ionic bonds, Lewis structure of molecules, covalent bonds and polarity, electro negativity, formula charges, resonance structures and exceptions to it.

. Molecular shape and chemical bonding

- VSEPR model, polar and non-polar molecules, molecular shapes.

. Acid-base chemistry

- pH , pOH , pK , Bronsted lowry definitions, buffer solutions, polyprotic acids, Lewis acids and bases

PHYSICAL CHEMISTRY (PHCM 101)

The course of physical chemistry in the first semester comprises a two-hour lecture weekly. The student should be able to explain observed chemical behavior and demonstrate an understanding of the changes involved in equilibrium and thermochemical systems.

SYLLABUS

- . Some fundamental concepts of physical
 - Gases
 - Liquids and solids
 - Solutions
- . Thermochemistry
- . Chemical equilibrium
- . Chemical Kinetics
- . Ionic equilibrium

PHYSICS (PHYS 101)

This course provides the students with a presentation of the basic concepts of physics and strengthens an understanding of the concepts and principles through a broad range of interesting application to the real world.

The course consists of a two-hour lecture and two hours of practical sessions weekly.

SYLLABUS

- . Electricity and magnetism
 - Coulomb's law, the electric field, potential, capacitance and properties of dielectrics, current, resistance and electromotive force, Direct current circuits and instruments, magnetic field, membrane potential, electrocardiogram, electromyogram, electroencephalogram, electroretinogram and electrooculogram.
- . Heat and properties of matter
 - Units and dimensions, equilibrium of a particle, frictional force, gravitational force, elasticity, harmonic motion, surface tension, viscosity and hydrodynamics.
- . Heat and thermodynamics
 - Temperature and expansion, heat measurement, transfer of heat, thermal properties of matter, the laws of thermodynamics

- . Sound waves
 - Intensity of sound waves, intensity level and loudness, frequency of strings, ultrasonic, medical applications of ultrasonic.

. Light waves

- Lenses and optical instruments, electron microscope, interference and light diffraction, polarization, medical application of light, laser, medical application of laser.

. Radiation

- X-rays, medical application of x-rays, nuclear medicine.

ZOOLOGY (ZOOL 101)

The aim of this course is to provide dental students with a background of biology, an understanding and appreciation of the vast diversity of living organisms, and their evolutionary and ecological relationships. This course includes microscopic structure of animal cell and function of various integral parts. The practical course emphasizes light microscopic slides to help the student with the challenging task of mastering the principles of biology.

The course consists of a three-hour lecture and two hours of practical sessions weekly.

SYLLABUS

. Cell biology

- Introduction and microscopy
- Cellular organization
- The animal cell
- The cytoplasmic matrix
- The nucleus
- Cell division

. Embryology

- Introduction and embryogenesis of chordates
- Fertilization
- Embryonic development

. Physiology

- Introduction, cells, nutrition, digestion and metabolism
- Circulatory system
- Excretory system
- Nervous system
- Muscular system
- Endocrine system
- Hormones and reproduction

. Animal Taxonomy

- Phylum protozoa:
Subphylum Mastigophora, Subphylum Sarcodina, Subphylum Sporozoa Subphylum Ciliophora
- Subkingdom Parazoa:
Phylum porifera (Ascon type, Sycon type, Leucon type)
- Subkingdom Metazoa:

Class Hydrozoa, Class Scyphozoa, Class Actinozoa

- The Triploblastica
- The Acoelomata:
Phylum Platyhelminthes (Class Turbellaria, Class Trematoda,
Class Cestoda), and Phylum Aschelminthes

BOTANY (BOT 101)

This course includes the structure of plant cell, the properties and constituents of enzyme systems and the metabolic adaptations by which living systems obtain and utilize energy by photosynthesis and cellular respiration.

The course consists of a two-hour lecture and two hours of practical sessions weekly.

SYLLABUS

. Plant structure

- The plant cell:
Light and electron microscope, cell wall, plasma membrane, cytosol, endoplasmic reticulum, chloroplasts, mitochondria, golgi apparatus, ribosomes, vacuole, nucleus.
- Plant tissue:
Meristematic tissues, permanent tissues, vascular tissues.

. Plant physiology

- Plant-water relationships
- Plant-mineral nutrition
- Enzymes
- Energy and life. I Energy capturing reactions
- Energy and life. II Energy releasing reactions
- Rhythms and biological clock in plant life

. Systematics

- The viruses
- Kingdom: Monera
- Kingdom: Fungi
- Kingdom: Protistae
- Kingdom: Plantae

STATISTICS (STAT 101)

This course includes statistical bases that aid in data analysis. The student should be able to present, interpret and analyze the collected data. Probability and analysis of variance will be clarified. The course consists of one-hour lecture sessions weekly.

SYLLABUS

- .Definite integrals and substitution
- .Probability, conditional probability and independent events
- .Variability and mathematical expectation
- .Basics and application of functional analysis

ORGANIC CHEMISTRY (PHCM 112)

This course provides dental students with background knowledge of organic chemistry relevant to medical fields, to develop an understanding of the numerous applications of organic chemical principles and reactions in different biochemical systems. The laboratory sessions will illustrate some of the principles and reactions discussed in lectures and provide practical experience in the techniques involved in synthesizing, isolating, purifying and characterizing organic compounds.

The course consists of a four-hour lecture and two hours of practical sessions weekly.

SYLLABUS

- . Organic compounds and review of chemical bonding saturated hydrocarbons and unsaturated hydrocarbons
- . Aromatic compounds
- . Hydroxy compounds and halides
- . Introduction to isomerism and molecular geometry
- . Ethers and epoxides in living systems
- . Carbonyl compounds: aldehydes and ketones
- . Carbonyl compounds: carboxylic acids and derivatives
- . Amines and related compounds
- . Enantiomerism
- . Carbohydrates
- . Amino acids and Proteins
- . Terpenes and steroids
- . Medicinal chemistry

GENETICS (GEN 111)

The course includes information on population genetics that helps the student better understand how genetic variation is maintained through generations. The course consists of a one-hour lecture weekly.

SYLLABUS

- Cell cycle and molecular genetics
- Cell division
- Inheritance
 - Monohybrid crosses, mutations, maternal inheritance, lethal alleles, Recombinant DNA technology and transgenic plants

MEDICAL ETHICS & LAW (ETHC101)

The course deals with ethical obligation of dentist and legal aspect of health care. The student will be able to understand the patient's right and the significance of patient's consent. The course consists of one hour lecture weekly.

SYLLABUS

- .Theories of ethics
- .Legal aspects in medical field
- .Consistent medical record
- .Major contemporary health care issue
- .Patient record confidentiality

DENTAL ANATOMY

The basic course of dental anatomy consists of a thorough study of the nomenclature or the system of names used to describe different surfaces of tooth as well as a full description of the morphology of crown and root for each tooth in both deciduous and permanent dentition. The curriculum is designed to correlate the physiologic tooth form of the teeth with the health of the periodontium.

The course comprises a one-hour lecture and two- two hours practical sessions weekly.

SYLLABUS

DENTAL ANATOMY (ORPA 111)

- . Introduction and nomenclature
 - Classification of human dentition
 - Numbering system & dental formula
- . Macro and micro anatomy of teeth
 - Function of teeth
 - Anatomical feature of crown
- . Division of crown and roots into thirds
- . Life history of deciduous and permanent teeth
- . Surface anatomy of maxillary central incisor

- . Surface anatomy of maxillary lateral incisor
- . Surface anatomy of mandibular central incisor
- . Surface anatomy of mandibular lateral incisor
- . Surface anatomy of maxillary canine
- . Surface anatomy of mandibular canine
- . Surface anatomy of maxillary first premolar
- . Surface anatomy of maxillary second premolar
- . Surface anatomy of mandibular first and second premolar
- . Surface anatomy of maxillary first molar

DENTAL ANATOMY (ORPA 112)

- . Surface anatomy of maxillary 7 & 8
- . Surface anatomy of mandibular first molar
- . Surface anatomy of mandibular 7 & 8
- . Surface anatomy of deciduous anterior teeth
- . The deciduous molars
- . Anatomical variations between deciduous and permanent teeth
- . The mandible at different ages
- . The teeth at different ages
- . Physiological significance of crown outline
- . Physiological tooth form protecting the periodontium
- . Occlusion of permanent and deciduous teeth

DENTAL MATERIALS

This is a lecture and practical course dealing with the physical properties of dental material and test methods employed in their development and evaluation. Emphasis is placed on the clinical significance of the properties and evaluation of test procedures.

The course consists of a two-hour lecture and two hours of practical sessions weekly. The practical course includes seminars on topics that are assigned to each student who conducts an essay discussing this topic.

SYLLABUS

DENTAL MATERIALS (OMAT 111)

- . Structure of matter: bonding, crystallography, dental applications
- Physical properties
 - Mass related properties
 - Thermal properties
 - Optical properties
 - Miscellaneous
- . Mechanical properties of dental materials
 - Stress-strain curve
 - Other mechanical properties and tests
 - Hardness
 - Rheology
- . Adhesion and bonding

DENTAL MATERIALS (OMAT 211)

- . Polymers
- . Biocompatibility
- . Introduction to ceramics
- . Introduction to composites
- . Metallurgy
 - Metals
 - Alloys
 - Phase diagram
 - Heat treatment
- . Tarnish and corrosion
- . Model and die materials
- . Investment material
- . Waxes
- . Impression materials

DENTAL MATERIALS (OMAT 212)

- . Dental casting alloys
- . Wrought base metal alloys
- . Casting technology
- . Joining of metal
- . Dental amalgam
- . Denture base resins
- . Dental cements
- . Direct esthetic restorative materials
- . Dental ceramics
- . Alloys for porcelain metal restorations

GENERAL HISTOLOGY

The basic course in human histology consists of a thorough study of the cells, tissues, organs and organ systems of the body under the microscope. Correlation is made with other courses in the basic science and clinical disciplines of the dental curriculum.

The course comprises two-hour lecture and two hours of practical sessions weekly.

SYLLABUS

GENERAL HISTOLOGY (HIST 111)

- . The cell
 - Cytoplasm: Cytoplasmic organelles, Cytoplasmic inclusions
 - Nucleus
- . Tissues of the body
 - Epithelial tissue
 - Connective tissue proper
 - Cartilage
 - Bone
 - Blood

GENERAL HISTOLOGY (HIST 211)

- . Muscular tissue: skeletal, cardiac, smooth muscles

- . Nervous tissue: neuron, ganglia, neuroglia, degeneration and regeneration
- . Cytogenic: Cell cycle, division, chromosomes, karyotyping, Barr body
- . Digestive system: oral cavity, tongue, salivary glands, teeth, lip, digestive tube

MICROBIOLOGY

The course emphasizes on knowledge about an understanding of the microbiology and immunology of the human oral cavity. Recent advances in microbiology are included in order to achieve more rapid and more effective means in diagnosis, treatment and prevention of dental caries, periodontal disease and other oral infections. In addition, hepatitis, acquired immune deficiency syndrome and other medical diseases, which have been assumed to be pivotal, are discussed.

The course comprises one-hour lecture and two hours of practical session weekly.

SYLLABUS

MICROBIOLOGY (MIC111)

- . Taxonomic position of Microorganism
(Classification, comparison between prokaryotic & eukaryotic, diversity of microorganism)
- . Cell structure and function
(Cell wall, cell membrane, mesosomes, capsule, Pilli, flagellae, spores)
- . Bacterial growth & physiology
(Bacterial reproduction, physical conditions for growth)
- . Media for bacterial growth: (basal, enriched, selective, indicator media)
- . Bacterial genetics
(Chromosome, gene expression & regulation, plasmids, bacterial variation transduction & conjugation, genetic recombination)
- . Antimicrobial chemotherapy

MICROBIOLOGY (MIC211)

- . General virology (replication, cultivation, pathogenesis, lab diagnosis, treatment)
- . Sterilization & disinfection (by heat, irradiation, filtration, gases)
- . Methods of disinfection (Chemicals, gases, examples)
- . Host parasites interactions
(Stages of infection, microbial virulence, toxin production)
- . Immunity (Innate immunity, acquired immunity, cells involved in immunity humoral & cellular immunity, hypersensitivity, transplantation)
- . Systemic microbiology (bacterial, viral and mucotic infection)
- . Oral microbiology (Oral flora, dental caries, periodontal diseases, dentistry microbiology laboratory)

ORAL BIOLOGY

This course provides students with an introduction to orofacial histology and embryology from a microscopic and developmental aspect. Principles of cell structure and function are studied with particular emphasis on those concerned with head, facial region and oral cavity supplemented with slides. The aim is to provide the student with morphological basis for their future in clinical dentistry.

The practical course includes the preparation of ground and decalcified sections and identification of different oral and dental hard and soft structures under the microscope.

The course comprises a two-hour lecture and two hours of practical sessions weekly.

SYLLABUS

ORAL BIOLOGY (ORPA 211)

- . Development and growth of dental and paradental tissue
- . Enamel (development, composition and structure)
- . Dentin (development, composition and structure)
- . Pulp
- . Cementum
- . Periodontal ligaments
- . The alveolar bone and jaws (structure, changes during tooth eruption)

ORAL BIOLOGY (ORPA 212)

. Oral mucosa

Masticatory, lining, specialized mucosa, functions, structure and subdivision of oral mucosa.

. Dentogingival junction

Structure, development of junctional epithelium, shift of dentogingival junction, mode of attachment.

. Salivary glands

Classification, development and growth, structure, arrangement of cells, secretory units, duct systems, major and minor salivary glands, saliva.

. Tooth eruption

Stages of physiologic movement, pattern of movement, theories, shedding of deciduous teeth, pattern of shedding, histology of shedding, mechanism of resorption and shedding, abnormal behavior of primary teeth.

. Maxillary sinus

Development, anatomy, histology, function, clinical consideration

. Head and neck

Pharyngeal apparatus, derivatives of pharyngeal pouches, clefts and arches, floor of pharynx, development of tongue, face, palate, mandible, maxilla, methods of skull growth, growth of mandible and maxilla.

PHYSIOLOGY

This course deals with human physiology that dental students can apply in clinical work. Emphasis has been placed on physiology in relation to disease. In the interest of clarity, each system is reviewed with reference to function and balanced mechanism that control body homeostasis. Experimental physiology is directed to provide students with background on various investigations to assess proper organ function.

The course comprises a three-hour lecture and two-two hours of practical sessions weekly.

SYLLABUS

PHYSIOLOGY (PSL 211)

. Blood

- Types & sites of synthesis & functions of plasma proteins
- Hematocrite value
- Factors affecting erythropoiesis
- B12 absorption and deficiency
- Anemia
- White blood cells
- Mechanism of phagocytosis
- Innate and acquired immunity
- Types of T lymphocytes
- Humoral immunity & structure of antibodies
- Hemostasis and platelet functions
- Intrinsic & extrinsic pathways of blood coagulation
- Blood groups and importance of Rh factor
- Complications of incompatible blood transfusion
- Abnormalities of blood coagulation
- Anticoagulants

. Respiration

- Mechanism of inspiration and expiration
- Respiratory pressures
- Surfactant; composition, function and deficiency
- Dead space; types, function and factors affecting
- Pulmonary and alveolar ventilation
- Lung volumes and capacities
- Diffusion of gases
- Hypoxia
- Carbon monoxide poisoning
- Dyspnea

. Nerves and Muscles

- Types of nerve fibers
- Causes of resting membrane potential
- Action potential, causes & ionic basis

PHYSIOLOGY (PSL 212)

. Nerves & muscles

- Excitability changes during action potential
- Conduction of nerve impulses
- Mechanism of muscle contraction
- Mechanism and properties of neuromuscular transmission
- . Autonomic
 - Somatic and autonomic nervous system
 - Types and functions of autonomic ganglia
 - Functions of sympathetic nervous system
 - Functions of parasympathetic nervous system
 - Adrenergic receptors
 - Cholinergic receptors
 - Chemical transmitters
 - Drugs acting on the autonomic nervous system
- . Circulation
 - Action potential of cardiac muscles
 - Cardiac properties
 - Rhythmicity and pacemaker of the heart
 - Factors affecting contractility of cardiac muscles
 - Excitation contraction coupling in cardiac muscle
 - Cardiac output, extrinsic & intrinsic regulation & heart sounds
 - Arterial blood pressure
- . CNS
 - Structure of synapse and mechanism of transmission
 - Excitatory & inhibitory post synaptic potentials
 - Properties of synaptic transmission
 - Somatic sensations
 - Types of cutaneous pain
 - Mechanism and examples of referred pain
 - Pain control analgesic system
 - Types of thermoreceptors & range of stimulation
 - Headache: types and causes
 - Tactile discrimination

Adaptation of receptors

GENERAL ANATOMY

This course deals with general anatomy of human body where basic knowledge helps to clarify and is of importance to an understanding of the clinical disorders that may arise. As a preliminary to the dissection of the head and neck, the student is provided with information about the skull and cervical vertebrae and their relation with many body points which can be felt. In addition, the course includes sound knowledge of the structures which pass through or are attached to them.

The course consists of a two-hour lecture and two two-hour practical sessions weekly.

SYLLABUS

GENERAL ANATOMY (ANAT 211)

- . Introduction
- . Anatomical terms
- . Movements of joints

- . General arrangement of the body
- . Skin
- . Digestive system
- . Respiratory system
- . Circulatory system
- . Lymphatic system
- . Urinary system
- . Genital system
- . Endocrine system
- . Nervous system
- . Articular system
- . Muscular system
- . Skeletal system
- . Blood supply of the bones
- . Bones of the upper limb
- . Bones of the lower limb
- . Vertebral column
- . Thoracic cage
- . Skull
- . Mandible
- . Eye and ear
- . Growth and aging

GENERAL ANATOMY (ANAT 212)

- . Norma verticalis and norma frontalis
- . Maxillary air sinus
- . Norma occipitalis and norma lateralis
- . Pterygo-palatine fossa
- . Norma basalis
- . The skull bones
- . Muscles and ligaments attached to the skull
- . Mandible
- . Hyoid bone
- . Scalp, the face
- . Parotid gland
- . Cranial cavity, emissary veins
- . Pituitary gland, temporal and infratemporal fossae
- . Back of the neck, suboccipital, posterior, anterior triangle of the neck
- . Submandibular triangle of the neck
- . Submandibular, sublingual glands
- . Muscles of the side of the neck, deep fascia of the neck, thyroid gland
- . Arteries of the neck, veins of the neck, Nerves of the head and neck
- . Sympathetic trunk
- . Parasympathetic ganglia
- . Cervical plexus
- . Lymph drainage of the head and neck
- . Tongue
- . Soft palate, pharynx, palatine tonsil
- . Larynx
- . The orbit, lacrymal glands
- . Eye ball

- . Nasal cavity
- . Paranasal air sinuses
- . The ear

BIOCHEMISTRY

This course deals with the different life's processes in terms of molecular structure of food substances and body constituents. The student is familiar with different ways of expression of substances, familiar with different terms and is able to understand the biological significance of different phenomena. The student is also acquainted with the chemical changes that occur in the body to produce energy of form biologically active from food materials.

The course consists of a two-hour lecture and two hours of practical sessions weekly.

SYLLABUS

BIOCHEMISTRY(BIC 211)

- . Physio-chemical principles
- . Carbohydrates
- . Lipids of physiological importance
- . Proteins
- . Immunoglobulins
- . Hemoglobin
- . Enzymes
- . Vitamins
- . Purines, Pyrimidines and nucleotides

BIOCHEMISTRY(BIC 212)

- . Introduction to metabolism
- . Biological oxidation and respiratory chain
- . Metabolism of carbohydrates
- . Metabolism of lipids
- . Metabolism of proteins
- . Plasma proteins
- . Metabolism of hemoglobin
- . Metabolism of nucleoproteins
- . Metabolism of minerals

PHARMACOLOGY

Pharmacology is divided into two phases. The first phase includes a thorough study of basic concepts and principles in pharmacology using mainly prototype drugs. Emphasis is placed on the mechanism of action of drugs, their absorption, distribution, excretion, toxicity, and drug interaction.

The second phase deals with clinical aspects of therapeutics, control of pain and anxiety. Attention is given to useful drugs and their indications and contraindications. The course consists of a one-hour lecture and two-practical session weekly.

SYLLABUS

PHARMACOLOGY (PCOL 211)

- General introduction: Absorption, routes of administration, biotransformation of drugs, excretion of drugs.
- Factors affecting drug action and doses, drug receptors
- Autonomic nervous system: general introduction
- Parasympathomimetic drugs
- Muscarinic blockers
- Sympathomimetic drugs
- Sympathetic blocking drugs
 - α Blockers
 - β Blockers
- Adrenergic neurone blockers
- Ganglion blockers

PHARMACOLOGY (PCOL 311)

- Skeletal muscle relaxants
- Drugs used in bleeding disorders
- (Vitamin K, anticoagulants, general anesthetics, anti-inflammatory drugs, narcotic analgesics, local anesthetics).
- Antimicrobial chemotherapy
- Inhibitors of protein synthesis
- (Erythromycin, Clindamycin, Tetracycline, Aminoglycosides, Chloramphenicol)
- Antimicrobial drugs that interfere with bacterial nucleic acid
- (Metronidazole, Quinolones)
- Antimicrobials that act as antimetabolites
- Antifungal drugs
- Antiviral drugs
- Antiseptics and disinfectants

- . Drug for dental caries and periodontal disease
- . Emergency treatment in dental practice
- . Drug-Drug Interactions
- . Use of drug during pregnancy and lactation

PRECLINICAL OPERATIVE DENTISTRY ***(OCON 211, OCON311, OCON312)***

This is a preclinical course meant to introduce the student to the science of operative dentistry. The first semester deals with the basic definitions, nomenclature, instruments used and principles of cavity preparation and cutting in tooth tissues.

The second semester deals with the properties; characteristics and handling of amalgam and cast gold restorative materials. The third semester emphasizes on the composition and properties of composite resins with special reference to their indications and handling. The practical sessions include cavity preparation (classes 1 and 2) for amalgam and cast gold restoration on molars and premolars. Practical sessions cover amalgam manipulation and restoration of cavities, wax pattern construction for cast gold cavities, class 3 and class 5 for composite restorations

The course comprises a one-hour lecture and two two-hour practical sessions weekly except for the first semester where practical sessions will be a two hour session.

SYLLABUS

OPERATIVE DENTISTRY (OCON 211)

- . Definition, scope and objectives
- . Lesions involved in tooth destruction and discoloration
(Caries, attrition and abrasion, erosion, tooth fracture, endodontically treated teeth, developmental anomalies).
- . Instruments and instrumentation
(Hand and rotary instruments, classification, design, types, uses, cutting efficiency, heat generation).
- . Nomenclature and classification of cavities
- . General principles of cavity preparation
(Biologic and mechanical principles).

OPERATIVE DENTISTRY (OCON 311)

- . The amalgam restorations
(Advantages, indications, composition, types, reactions, manipulation, cavity preparation).
- . The cast gold restorations
(Advantages, indications, composition, types, cavity preparation).

OPERATIVE DENTISTRY (OCON 312)

- . An introduction to adhesion
(Definition, types, adhesive systems, dental applications)
- . Composite resins
(Composition, properties, indications, handling, cavity preparation).
- . Glass ionomer cements
(Composition, properties, indications, handling).
- . Insulating and base materials
(Requirements, indications, types, manipulation).

PRECLINICAL REMOVABLE PROSTHODONTICS (OPRO 211,311,312)

Removable prosthodontics concerns the art and science involved in replacing lost dental and associated structures by means of artificial appliances. This course is concerned with the laboratory procedures involved in the construction of both complete and removable partial dentures.

The complete denture course is introduced in the first and second semesters where the student learns the basic clinical concepts and practices that are included to coordinate laboratory procedures with clinical practice and should be able to employ the skills to accomplish selected procedures in complete denture construction.

In the third semester the partial denture course acquaints the student with the principles, components of removable partial dentures and sequence of technical procedures involved in fabrication of removable partial dentures.

In the practical sessions the students will be trained to perform all laboratory steps involved in complete denture construction starting with the construction of special trays, occlusion blocks, mounting on articulators, setting-up of artificial teeth.

In addition the students will perform all laboratory steps involved in complete denture construction with special emphasis on setting-up teeth and adjusting semi adjustable articulators and developing balanced occlusion. The student will process the dentures; remount them to perform laboratory remounting and then proceed to finishing and polishing. The student will perform the different procedures involved in the fabrication of removable partial dentures starting with planning the design of different components and ending with casting the framework.

The course comprises a one-hour lecture and two-two hour practical sessions weekly except for first semester where practical sessions will be a two hour session.

SYLLABUS

REMOVABLE PROSTHODONTICS (OPRO 211)

- . Introduction to Prosthodontics and steps of complete denture construction
- . Anatomical landmarks related to complete dentures
(Extra-oral and Intra-oral landmarks)
- . Types of impressions trays and materials
- . Boxing in impressions

- . Trial denture bases and occlusion blocks
- . Basic mandibular movements
- . Face bows (Types, description and uses)
- . Articulators (Functions, types).
- . Selection of artificial teeth (anterior and posterior)
- . Setting-up of artificial teeth
- . Waxing-up and processing of dentures

REMOVABLE PROSTHODONTICS (OPRO 311)

- .Introduction and orientation to course
- .Anatomy and physiology in relation to complete dentures
- ..Theories of impression making
- .Relief and areas to be relieved
- .Retention and stability
- .Posterior palatal seal (Functions and techniques)
- .Dental articulation, vertical and horizontal jaw relations
- .Transfer of jaw relations to articulators using face bows
- .Setting condylar inclinations and development of balanced occlusion
- .Difference between artificial and natural teeth
- .Laboratory remounting
- .Repair of fractured dentures

REMOVABLE PROSTHODONTICS (OPRO 312)

- .Introduction, terminology, functions and component parts of removable partial dentures
- .Classification of removable partial dentures (Kennedy's classification, Appelgate's rules).
- .Removable partial denture bases (Requirements, functions, types).
- . Rests and similar components (Requirements, functions, types).
- . Direct retainers (functions, requirements and principles)
- . Indirect retainers
- . Connectors (Maxillary, mandibular and minor connectors).
- . Stress breakers
- . Dental surveyor
- . Laboratory steps in removable partial denture construction
- . Temporary removable partial dentures.

PRECLINICAL FIXED PROSTHODONTICS (OCON 321,322)

This scope of instruction in Fixed Prosthodontics involves the art and science of replacing missing teeth and lost or diseased tooth structure with fixed restorations. The first semester deals with the basic definitions, nomenclature, instruments used and principles of tooth reduction and impression materials. In the practical course the

student is introduced to instruments. The preparation for full metal coverage is given in the laboratory along with the wax pattern.

The second semester deals with tooth preparation for different restorations, and on alloys and casting technology. The practical course involves jacket crown preparation and veneered crown preparation in the laboratory.

The course comprises a one-hour lecture and two two-hours of practical sessions weekly.

SYLLABUS

FIXED PROSTHODONTICS (OCON 321)

- . Terminology
- . Instruments
- . Principles of tooth reduction
- . Full metal crown
- . Wax pattern
- . Gingival tissue displacement
- . Impression materials and techniques

FIXED PROSTHODONTICS (OCON 322)

- . All ceramic preparation
- . Non-metallic restoration: Porcelain and acrylic jacket crowns
- . Veneered preparations
- . Casting alloys
- . Ceramometallic bond
- . Spruing
- . Investing
- . Casting
- . Working casts and dies

PRECLINICAL ENDODONTICS (OCON 331,332)

The student introduction to endodontics begins in the third year with a preclinical course.

It consists of a series of lectures and laboratories which stress the fundamentals of root canal therapy. Upon successful completion of this course the student is ready to perform the same procedures on clinical patients.

The practical education sessions are designed to provide each student with a broad background of pulp space morphology of all teeth, enable the student to perform the access cavity preparation of all teeth properly according to the fundamental principles and to demonstrate all instruments used in endodontic procedures.

The course comprises one hour lectures and two hours of practical sessions weekly.

SYLLABUS

ENDODONTICS (OCON 331)

Introduction to endodontics.
Pulp space morphology
Endodontic instruments
Access cavity preparation.
Common errors in Access cavity preparation

ENDODONTICS (OCON 332)

- Length determination
- Cleaning and shaping the root canal system
(Rationale for treatment , cleaning and shaping concepts , working short of apex , apical preparation , instrument and methods , mechanical and biological objectives, concepts for canal preparation , recent techniques , finalizing preparation)
- Chemical aids in endodontics
- Common errors in root canal preparation
- Obturation of the canal space
(purpose, rationales ,importance ,characteristics of ideal canal filling , gutta percha and cement sealers)
- Techniques for canal obturation
(lateral condensation , vertical condensation , chemically altered gutta percha , thermoplasticized gutta percha ,solid core filing techniques , paste root canal filling)
- Obturation errors.

Evaluation:

Upon completion of these practical sessions the student should be able to successfully prepare and obturate a single or multi rooted canal system in the laboratory

Methodology:

Lectures, data show demonstration and reading assignments.
Written examination and pre- clinical laboratory performance.

GENERAL PATHOLOGY

This course deals with the development, gross, microscopic alterations, history and the cause of the disease. It forms the basis for correct diagnosis and therapy. The study of pathology is concerned with the nature of the disease including its different aspects that may be influenced by the genetic, cytological and biochemical changes.

The course comprises a two-hour lecture and two hours of practical session weekly.

SYLLABUS

GENERAL PATHOLOGY (PATH 311)

- . Cell injury and adaptation
- . Inflammation: acute and chronic inflammation
- . Healing and repair

- (Regeneration, organization, healing by fibrosis, healing of bones and peripheral nerves)
- . Circulatory disturbances
(Hyperemia, general venous congestion, local venous congestion, thrombosis, embolism, ischemia, infarction, gangrene, hemorrhage, edema, shock).
- . Genetic disorders
- . The Immune response
(Immunity, hypersensitivity reactions, auto immune diseases)
- . Infectious diseases
 - Viral infections
 - Mycotic diseases
 - Bacterial infections
 - Parasitic diseases

GENERAL PATHOLOGY (PATH 312)

- . Vitamin deficiency
(Rickets, osteomalacia, Vitamin K deficiency, Vitamin C deficiency, Scurvy, Vitamin B complex deficiency, Beri-Beri and Pellagra)
- . Disturbances of growth
(Atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia)
- . Neoplasia
(Etiology & predisposing factors, Co-Carcinogens, general characters of benign tumors, benign epithelial tumors, malignant epithelial tumors, benign mesenchymal tumors, malignant mesenchymal tumors, pigmented tumors, general characters of benign tumors, general characters of malignant tumors, spread of malignant tumors, prognosis of tumors).
- . Effect of ionizing radiation
(Sources of radiation, effect of radiation on different tissues of the body, effect of radiation on different tumors, effect of total body irradiation).

ORAL PATHOLOGY

The under graduate program consists of an interdisciplinary course that covers the basic principles of pathology through presentation of morphologic, chemical and physical changes of basic disease processes. An important specific emphasis is placed on diagnosis, etiology, pathogenesis and clinical manifestation of disease processes in the oral cavity.

Important topics such as etiology and histopathology of dental caries, prevention of dental disease, immunology and diagnosis of pulp and periapical diseases are covered by this curriculum. The aim is to provide a sound basis for diagnosis of oral lesions and a rationale for their treatment. The aim of practical course of oral pathology is to identify different lesions microscopically to assist in the principles of differential diagnosis of oral lesions.

The course comprises a two-hour lecture and two hours of practical sessions weekly.

SYLLABUS

ORAL PATHOLOGY (ORPA 311)

- .Developmental disturbance of oral and para-oral structures
 - Developmental disturbances of jaws
 - Developmental disturbance of the lip and palate
 - Developmental disturbances of gingival
 - Developmental disturbances of salivary glands
 - Developmental disturbances of shape, size and structure of teeth
- . Dental caries
 - Etiology, theories of dental caries
 - Role of carbohydrates
 - Role of microorganisms
 - Role of dental plaque
 - Clinical aspects, histopathology, methods of caries control
- Diseases of the pulp and periapical tissues
 - Pulpitis and its different types
 - Periapical lesions
 - Acute and chronic periapical abscess
- . Cysts of the oral cavity
 - Classification and theories of cyst formation
 - Odontogenic cysts
 - Non-odontogenic cysts
 - Cysts of the soft tissue
 - Pseudocysts
- . Attrition, abrasion and erosion of teeth
- . Bone disease
 - Classification of bone diseases
 - Hereditary bone diseases
 - Dystrophic bone diseases
 - Nutritional bone disease and idiopathic disease
 - Inflammatory bone disease

ORAL PATHOLOGY (ORPA 411)

- White and premalignant lesions:
(Leukoplakia, Erythroplakia, oral submucous fibrosis, Syphilitic leukoplakia,Plummer Vinson’s syndrome)
- Benign non-odontogenic tumors
 - Benign tumors of epithelial origin:
(papilloma, Keratoacanthoma, pigmented nevus)
 - Benign tumors of connective tissue origin:
 - Reactive hyperplastic lesion
- Tumors of fibrous tissue
- Tumors of fat cells
- Vascular lesions
- Tumors of cartilage
- Tumors of bone
- Neural lesions
- Malignant epithelial tumors
- Malignant C.T. tumors
- Metastatic tumors

- Odontogenic tumors
- Odontogenic tumors of epithelial origin
- Odontogenic tumors of epithelium with odontogenic ectomesenchyme
- Odontogenic tumors of C.T. origin
- Malignant odontogenic tumors
- Salivary glands diseases
- Salivary gland tumors
- Vesiculo-Bullous lesions
- Infectious disease

ORAL RADIOLOGY

This course includes the fundamentals of oral radiology starting from basic concepts of physics and components of dental film. The student develops the skill of proper film adjustment and proper selection of radiographic technique. The course also deals with factors affecting the image in order to point out areas that influence proper interpretation. Recent advances in oral radiology to assess bone quality and quantity and to recognize abnormal signs are considered. Practical course includes training of students on proper radiographic examination with detailed step-by-step description of film processing. The students attend demos on different recent techniques in oral radiology.

The course comprises a one-hour lecture and a two-hour clinical sessions weekly.

SYLLABUS

ORAL RADIOLOGY (OMED 311)

- . Radiation physics
- . Biologic effects of radiation
- . Radiation safety and protection
- . X-ray films, intensifying screens and grids
- . Projection geometry
- . Processing x-ray films
- . Radiographic quality assurance
- . Infection control

ORAL RADIOLOGY (OMED 312)

- . Intra oral radiographic examination
- . Extra oral radiographic examination

- . Direct digital radiography, computed tomography
- . Magnetic resonance imaging, sialography
- . Normal radiographic anatomy
- . Interpretation of pathology, dental caries

ORTHODONTICS

This course is directed towards providing the dental student with the knowledge and skills necessary to recognize an established or developing malocclusion and to institute preventive and therapeutic treatment plans within the scope of general dental practice.

The practical program includes didactic and laboratory exercises that provide a strong foundation for delivery of limited orthodontic treatment as part of an adult and child patient's comprehensive dental care.

The course comprises a one-hour lecture and two hours of practical sessions weekly.

SYLLABUS

ORTHODONTICS (OPED 311)

- . Introduction
- . Growth and development of the head
- . Soft-tissue morphology and behavior
- . Normal development of the dental arches
- . Normal occlusion
- . Malocclusion
- . Etiology of malocclusion

ORTHODONTICS(OPED 411)

- .Orthodontic forces
- . Biology of tooth movement
- . Preventive and interceptive orthodontics
- . Diagnosis
- . Principles of orthodontic appliances
- . Anchorage
- . Materials used in Orthodontics
- . Therapeutic extraction
- . Retention

CLINICAL OPERATIVE DENTISTRY (OCON 411,412,511,512)

The course deals with the clinical applications of the third year course together with related relevant topics to introduce the student to clinical practice, proper patient handling, positioning, history taking, examination and diagnosis, diseases and conditions that he may have to handle and control in patient's mouth, cavity preparation and restoration, temporization of his cavities, effect of cutting on the health of the tooth and other basic topics with direct impact on the clinical practice.

The course deals also with all topics pertaining at improving the student's knowledge, clinical skills and capabilities, introducing him to all topics related to operative dentistry practice, together with tackling newer and state of the art information and techniques.

In the practical sessions the student operates on simulators to be introduced to the dental unit, patient positioning, and operating positions. The student is taught how to take history, examine a patient, diagnose caries and perform occlusal and occluso-proximal cavities for amalgam and restoring them. In the clinical sessions the student performs requirements of cavity preparation and restoration, including amalgams and composites

The course comprises a one-hour lecture and two-hours of clinical sessions weekly for the fourth year students. The course comprises a one-hour lecture and two-two hours of clinical sessions weekly for the fifth year students.

SYLLABUS

CLINICAL OPERATIVE DENTISTRY (OCON 411)

- . Patient assessment, examination diagnosis and treatment planning
(Medical history, past-dental history, chief complaint, examination, detection of caries, radiographic examination, examination and diagnosis of the patient in pain, phases of treatment planning)
- . Cariology
(definition, etiology, theories, caries risk assessment control and treatment)
- . Tooth form and occlusion
(occlusal anatomy, contour, contact and importance in properly restoring them)
- . Temporary restorations: (functions, requirements, types)
- . Control of fluids (targets, importance, methods)

CLINICAL OPERATIVE DENTISTRY (OCON 412)

- . Control of pain
(Causes of pain, factors affecting pain production, pain control)
- . Selection of restorative materials
(Available restorative materials, ideal properties of restorative materials, factors affecting selection)
- . Biologic considerations in operative dentistry
(Effect of restorative procedures, effect of restorative materials, effect of conditions present in the oral cavity).

- . Indirect tooth- colored restorations
(Indications, types, cavity preparation, limitations and precautions).
- . Adaptation
(Definition of marginal adaptation and microleakage, importance of adaptation, adaptability of different restorative materials, methods of promoting adaptation)

CLINICAL OPERATIVE DENTISTRY (OCON 511)

- . Management of deep carious lesions
- . Management of non-cariou lesion
- . Management of badly broken down teeth
- . Adhesion and adhesives (advanced)
- . Esthetics
(light and color perception, limiting problems, treatment modalities)

CLINICAL OPERATIVE DENTISTRY (OCON 512)

- . Failure of restorations
- . Post-operative pain and hypersensitivity
- . Modern cavity preparation
- . Laser energy in operative dentistry
- . Operative dentistry and the periodontium

CLINICAL REMOVABLE PROSTHODONTICS (OPRO 411,412,511,512)

The clinical complete denture course is studied throughout the fourth year in both the first and second terms. The first term includes a detailed step-by-step description of the clinical procedures performed at each patient appointment. Different philosophies and rationales concerning the different procedures of impression making, occlusion and jaw relation are discussed.

In the second term a special interest is given to problem cases and problem solving in complete denture cases. The recent trends in complete denture construction are introduced including implants.

In the clinical sessions the students treat completely edentulous patients under the supervision of the staff. Prior to each clinical step there is a demonstration by a member of the staff for each clinical step at the different appointments in constructing a complete denture for a patient.

In the fifth year the course includes a clinical removable partial denture course in the first semester and a course on maxillofacial prosthodontics in the second semester.

In the clinical removable partial denture course the students have a full understanding of the sequence of clinical procedures involved in treating partially edentulous cases for removable partial denture. Special attention is given to principles of design, impression techniques and problems of the different classes.

In the maxillofacial prosthodontics course the students are acquainted with the causes and management of some maxillofacial defects and problematic cases that require special attention.

The students continue treating partially edentulous patients in addition to the completely edentulous cases to complete their requirements with special emphasis on special advanced cases of flat, flabby ridges and single dentures.

The course comprises a one-hour lecture and two-hours of clinical sessions weekly for the fourth year students. The course comprises a one-hour lecture and two-hours of clinical sessions weekly for the fifth year students.

SYLLABUS

REMOVABLE PROSTHODONTICS (OPRO 411)

- . Retention and stability related to complete dentures
- . History taking, examination, prognosis and treatment planning in complete denture construction
- . Impression making
- . Mandibular movements
- . Recording jaw relations
- . Dental articulation
- . Try-in stage
- . Denture insertion

REMOVABLE PROSTHODONTICS (OPRO 412)

- . Chief Complaints
- . Management of some problematic complete denture cases
- . Concepts of occlusion
- . Duplication of dentures
- . Single dentures
- . Overdentures
- . Implantology
- . The geriatric patient

REMOVABLE PROSTHODONTICS (OPRO 511)

- . Examination and diagnosis of partially edentulous cases
- . Preliminary impressions for removable partial dentures
- . Principles of partial denture design
- . The final impression
- . Trial insertion of the framework
- . Occlusal relations for removable partial dentures

- . Initial placement, adjustment and servicing of removable partial dentures
- . Patients complaints following insertion
- . Stresses induced by removable partial dentures and the damaging effects of removable partial dentures
- . Relining and repair of removable partial dentures
- . Removable Partial overdentures

REMOVABLE PROSTHODONTICS (OPRO 512)

Maxillofacial prosthodontics

- . Cleft lip and palate
 - (Causes and management).
- . Speech and speech appliances
- . Prosthetic management of acquired maxillary defects
 - (Obturator “types” and methods to enhance retention).
- . Prosthetic rehabilitation of mandibular defects
- . Radiation therapy and radiotherapy prostheses
- . Maxillofacial stents
- . Trismus (limited mandibular movement)
- . Prosthetic management of jaw fractures
- . Implants
- . Immediate dentures

CLINICAL FIXED PROSTHODONTICS (OCON 421,422,521,522)

Concepts and skills used in replacing teeth are introduced to the students. Simple clinical treatment after proper diagnosis is presented with staff guidance to facilitate application of fundamentals of fixed prosthodontics. Single units are required from the students and performed under staff guidance in the clinics. Single units are required from the students and performed under staff guidance in the clinics.

Mouth preparations are done to prepare the teeth as sound foundations for fixed restorations. This course is an integration of different preparation

The course comprises a one-hour lecture and two-hours of clinical sessions weekly for the fourth year students. The course comprises a one-hour lecture and two-two hours of clinical sessions weekly for the fifth year students.

SYLLABUS

FIXED PROSTHODONTICS (OCON 421)

- . Diagnosis
 - (Clinical examination, study cast analysis, x-ray examination)
- . Partial coverage: (posterior and anterior)

- . Abutments
- . Pontics
- . Bite registration
- . Articulators

FIXED PROSTHODONTICS (OCON 422)

- . Wax pattern
- . Occlusion
- . Connectors
- . Precision attachments
- . Posts
- . Temporary protection
- . Cements

FIXED PROSTHODONTICS (OCON 521)

- . Mouth preparation
- . Treatment planning and design
- . Preparations for periodontally affected teeth
- . Laminate veneers
- . Resin bonded fixed partial denture

FIXED PROSTHODONTICS (OCON 522)

- .Esthetics and color
- . Implants
- . Checking
- . Failure
- . Recent advance in material and technology

CLINICAL ENDODONTICS (OCON 431,432,531,532)

The general purpose of this course is to introduce the student to the various procedures and concepts used in clinical endodontics; this course examines specific treatment modalities and principles of endodontic therapy which will be incorporated into the students clinical experience.

In the fifth year .lectures are presented with stress to diagnosis and the integration of the biological aspects of endodontics into the clinical setting. Cases are treated clinically with the student demonstrating an acceptable level of mastery by the completion of the fifth year.

This course comprises a one hour lecture and two hours of clinical sessions weekly

SYLLABUS

ENDODONTICS(OCON 431)

- Diagnosis

- Pulp and periapical changes.
- Selection of cases
- Tooth isolation.
- Management of Endodontic appointment.
- Vital pulp therapy
- Revision

ENDODONTICS (OCON 432)

- Treatment of immature permanent teeth.
- Radiographic technique
- Treatment plan.
- Root canal microbiology.
- Aseptic technique in Endodontics.
- Anesthesia in Endodontics.
- Pre-endodontic therapy.
- Revision.

Methodology:

Lectures, data show demonstration and reading assignment
Written examination and pre- clinical laboratory performance.

. ENDODONTICS (OCON 531)

- Endodontic management of trauma.
- Post endodontic therapy.
- Tooth fracture.
- Root resorption.
- Endodontic emergencies
- Revision

ENDODONTICS (OCON 532)

- Surgical endodontics.
- Endodontic periodontal problem.
- Combined endodontic periodontal therapy.
- Success, failure, and prognosis in endodontics.
- Current concepts in Endodontic techniques and filling Materials .

Methodology:

Lectures, data show demonstration and reading assignment
Written examination and clinical performance.

GENERAL SURGERY (SURG 401,402)

This course includes an introduction to topics in general surgical practice that are closely related to the previous basic sciences and serves as an application to such basic knowledge.

This course comprises a two-hour lecture and two hours of practical sessions (in the second semester) weekly.

SYLLABUS

GENERAL SURGERY (SURG 401)

- . Wounds
 - Types
 - Wounds healing and complications
 - Management, suture material
- . Surgical infections
 - Pathogenesis, wound infection and treatment
 - Common non-specific surgical infection
 - Specific infection (Tetanus, gangrene, Actinomycosis.)
- . Hemorrhage
 - Causes, types
 - Physiological effect, management and assessment
 - Blood grouping, blood transfusion, indications and complications
- . Shock: Pathophysiology of different types and management
- . Fluids, electrolytes and acid - base balance:
 - Body water & water balance, sodium & potassium metabolism
 - Acid base disturbances and buffer systems
 - Indication, complications and methods of infusion therapy
- . Nutritional support and surgical patient:
 - Metabolic and endocrine responses after injury on surgery
 - Indications and complications

GENERAL SURGERY (SURG 402)

- . Burns:
 - Etiology, pathology
 - Clinical evaluations
 - Complications, management, reconstruction type of flap
- . Lymph nodes in the neck:
 - Review of anatomy of cervical nodes, pathological causes of enlargement
 - Management and diagnosis
- . Thyroid surgery:
 - Review of anatomy a physiology, pathological causes of enlarged thyroid
 - Diagnosis and management plans for thyroid swellings
 - Hyperthyroidism
- . Head Injuries:
 - General principles & types, pathology and diagnosis of head injuries
 - Management strategies
- . Cysts in the neck:
 - Dermoid
 - Branchial
 - Thyroglossal
 - Developmental background of each type and diagnosis with management
- . Pre-operative assessment and post operative complications in general with main stress on D.V.T.

GENERAL MEDICINE (MED401, 402)

This course deals with systemic diseases of primary importance to the dental field. It provides the students with knowledge about clinical features and pathogenic mechanisms in some medical diseases. In addition the course includes problems, which confront medical and dental health personnel in management of systemically compromised patients.

The course comprises a two-hour lecture weekly.

SYLLABUS

GENERAL MEDICINE (MED401)

- . Hematological Diseases: Introduction, hematological symptoms
 - Anemia
 - Leukemia
 - Normal hemostasis
 - Congenital coagulopathies
- . Cardiovascular Diseases:
 - Circulatory disturbances
 - Rheumatic fever
 - Subacute bacterial endocarditis
 - Ischemic heart diseases
 - Symptoms of cardiovascular disease
 - Signs of cardiovascular disease
 - Heart sounds and murmurs
- . Gastrointestinal Diseases:
 - Diseases of the oesophagus
 - Peptic ulceration
 - Diseases of the liver
 - Acute viral hepatitis
 - Hepatotoxicity of drugs
 - Chronic hepatitis, jaundice

GENERAL MEDICINE (MED 402)

- . Infectious diseases:
 - Bacterial infections, chemotherapy for bacterial infections
 - Viral infections
 - Antiviral chemotherapy
 - Antifungal chemotherapy
- . Endocrinal diseases:
 - Diabetes mellitus
 - Porphyrias
 - Disorders of calcium metabolism, hyperparathyroidism
 - Hypoparathyroidism
 - Disorders of vitamin D-metabolism, hypothyroidism, hyperthyroidism
 - The adrenal cortex
- . Kidney diseases:
 - Toxic nephropathies

Renal involvement in systemic disorders, diabetic glomerulosclerosis and amyloid disease
Haemolytic uraemic syndrome, multiple myeloma and familial mediterranean fever
Henoch-Schönlein purpura, gout (Podagra)
Systemic lupus erythematosus
Progressive systemic sclerosis, polyarteritis nodosa

ORAL SURGERY (OSUR 411,412,511,512)

The course of oral surgery includes minor oral and maxillofacial surgery. Various methods and types of local anesthesia are discussed with related relevant topics of human anatomy. Students have to deal with pain evoked during surgical treatment and are able to apply basic scientific knowledge of pain pathway. Different techniques of exodontias and possible complications are considered.

The clinical course includes training the dental student in order to achieve proper anesthetic technique. The student is allowed to perform infiltration and nerve block anesthesia under supervision.

Clinical course deals with different approaches of exodontias. The student has the opportunity to manage some complications encountered in dental clinic.

Fifth year students are exposed to various surgical approaches for impacted teeth. The course includes surgical management of various pathological oral lesions. Emphasis is placed on phases of oral and maxillofacial surgery and general anesthesia. Dental students attend demonstrations on chair side in order to apply the basic scientific knowledge of oral surgery. In clinical session, recent advances in oral surgery are applied. Students are rotated to the oral and maxillofacial surgery clinic in block assignments for progressive participation in oral surgical procedures.

The course comprises a two-hour lecture and two hours of clinical sessions weekly.

SYLLABUS

ORAL SURGERY (OSUR 411)

- . Introduction to oral surgery, sterilization and disinfections
- . Operating room and dental clinic sterilization discipline, cross infection control

- . Anatomical landmarks of the oral cavity and jaws, Trigeminal N (Mx. N)
- . Md. N, applied anatomy for Md and Mx teeth and their investing structures
- . Pain pathway, theories of pain and methods of pain control
- . Local anaesthesia (methods of producing LA., kinds of L.A), choice of L.A technique and factors affecting it.

- . Injection technique (infiltration anaesthesia of Mx. and Md teeth), nerve block A. mandibular Inj. (Rt. and Lt.)
- . Errors in Md. Inj. Technique, Mental and incisive N. block technique
 - . Post sup. Alv. N. block ant and Mid. Sup. Alv. N. block (infraorbital injection) and L.A (indications, contraindications and failures)
- . L.A solutions, contents of carpule, ideal LA. drug, mode of action of L.A, L.A drugs (types and properties)
 - . Vaso-constrictors (chemistry, types, Mode of action and contraindications)
- Exodontia definitions, factor complicating dental extraction, indications for teeth removal, contraindication.) pre extraction clinical examination.
- . Anatomical considerations for dental extraction, forceps extraction (positions of pt., dentist and chair, extraction forceps requirements technique of forceps extraction)
- . Forceps extraction of each individual teeth, post-extraction procedures, anaesthetic complications, local management).
- . Anaesthetic complications: local complications (causes and management), anaesthetic complications: systemic complications (causes and management)
- . Emergencies in dental office

ORAL SURGERY (OSUR 412)

- . Complications of exodontia (Op. And post-operative). Op. Complications involving tooth structure causes and treatment.
- . Operative complications: forcing a root or tooth into anatomical structures "Causes and treatment), miscellaneous complications causes and treatment
- . Postoperative complications of exodontia:
 - Transalveolar extraction (surgical removal of teeth):
 - (Principles, radiographic examination, access to the surgical field, definition, mucoperiosteal flaps (Requisites, types, indications, advantages and disadvantages), instruments.
 - . Transalveolar extraction (surgical removal of teeth):
 - (Reduction of resistance (Methods, purpose, advantages and disadvant.), Instruments.
 - Transalveolar extraction (removal of tooth structure (Elevators):
 - Uses and indications, dangers, rules, classification and types, principles of use.)
 - . Transalveolar ext. Surgical removal of teeth
 - (Elevators (Principles of use), debridement, closure (suturing), advantages, principles, suture needles (types and classification, advantages and uses), suture materials (Requirements and types) techniques, instruments, post operative care).
 - . Impacted teeth
 - (Definitions, causes or etiologic factors, indications for removal, Pericoronitis, types, signs and symptoms, treatment, contraindications for removal.
 - . Impacted mand. 3rd molar

- (Classification, preoperative evaluation, complicating factors, operative plan and techniques for removal)
- . Impacted Max. 3rd molar
 - (Classification, complicating factors, operative procedures for removal).
- . Impacted Max. Canine:
 - (Etiologic factors, classification, localization (clinical and radiographic), complicating factors, management, operative procedure for removal.)
- . Impacted teeth (operative and post-operative complications)
- . Management of patients with systemic disease
- . Maxillary sinus affections

ORAL SURGERY (OSUR 511)

- . Infections of the oro-facial region
 - Definitions-principles of management acute dento-alveolar abscess. A.D.A.A: types, diagnosis, treatment.
 - A.D.A.A. Spread of infection: facial cellulitis (diagnosis and treatment). I and D: Advantages, technique, Drains (types).
 - Ludwig angina: Definition, types, diagnosis and treatment. Chronic D.A.A: Diagnosis and treatment, complications of D.A.A
 - Periapical granuloma; diagnosis, treatment.
 - Osteomyelitis: definition, types, diagnosis, pathogenesis, treatment
- . Cysts: general considerations, definition, and classification.
 - Diagnostic features: odontogenic cysts, pathogenesis, diagnosis. Odontogenic cysts: pathogenesis, diagnosis, treatment outlines
 - Treatment outlines of odontogenic cysts: advantages, disadvantages, techniques, treatment outlines of odontogenic cysts and complications
 - Non odontogenic cysts pathogenesis, diagnosis and treatment
 - Cysts-like lesions, differential diagnosis
- . Preprosthetic surgery
 - Alveoloplasty and alveolectomy: definitions, indications, and techniques. Enlarged Mx. tuberosity (indications, techniques), mylohyoid ridge reduction (indications, technique)
 - Torus mandibularis: indications and technique. Torus palatinus: indications and technique. Flabby ridge reduction and denture fissuratum excision (techniques)
 - Labial frenectomy: Abnormal lingual frenum (Corrections and frenectomy).
- . TMJ: disorders: anatomy, pathology, diagnostic aids.
 - Dislocation and subluxation (hypermobility) definitions, causes, diagnosis. Dislocation and subluxation "hypermobility" treatment.
 - Ankylosis "hypomobility", definition, types, etiology and treatment of false ankylosis. True ankylosis: types, pathogenesis, etiology and diagnosis.
 - Treatment of true ankylosis
- . Facial pain and trig. Neuralgia
 - Definition, classification, etiology and clinical features of trig. N. Differential diagnosis of facial pain, treatment of trig. N.

ORAL SURGERY (OSUR 512) Tumors

- Classifications, diagnostic considerations, biopsy
- Odontogenic tumors: diagnosis, treatment.
 - Non-odontogenic tumors: differential diagnosis, treatment
- Malignant tumors: classification, diagnostic considerations, treatment, role of dentist. Treatment outline of malignant tumors
- . Salivary gland disorders
 - Diagnostic aids. Inflammatory disorders (sialodochitis, sialadenitis): Definitions, diagnosis and treatment
 - Obstructive disorders: mucous retention phenomenon, Ranula, sialolithiasis. Definition, diagnosis, treatment. Tumors (benign and malignant): Diagnosis and treatment
 - Salivary gland disorders
- . Maxillofacial trauma: Maxillofacial fractures, definitions, etiology.
 - 1st aid treatment. Soft tissue injuries (wounds), types, treatment, postoperative care.
- . Mandibular Fractures
 - Classification. Diagnosis, goals of management.
 - Treatment
 - Complications
 - Fractures of the middle third of the face (classification, diagnosis, treatment outline).
- . Zygomatic complex fractures: classification, diagnosis, treatment outline. Fractures (middle, 1/3 and zygomatic complex).
- . Implants
 - Osseointegration: Definition, classification and designs of dental implants. Indications, clinical application, surgical technique.
- . Orthognathic surgery
 - Introduction; definitions, indications, diagnosis of jaw abnormal ides. Surgical techniques, complications.
- . Laser in oral surgery
 - Definitions, types. Advantages and clinical applications

PEDODONTICS (OPED 511,512)

This course deals with the branch of dental science, which provides the guidance of the primary and young dentition in growth and development as well as the prevention and treatment of pathological oral conditions, which may occur during childhood.

The course comprises a two-hour lecture and two hours of clinical sessions weekly.

SYLLABUS

PEDODONTICS (OPED 511)

A. Public Health

- . Course objectives and general epidemiology
- . Epidemiology of dental caries and periodontal disease
- . Assessment of dental caries and periodontal disease
- . Biostatistics
- . Dental health education

B. Pedodontics

- . Behavior management
- . Pharmacological management
- . Development of occlusion
- . Preventive orthodontics
- . Interceptive orthodontics
- . Space maintainers
- . Oral habits

PEDODONTICS (OPED 512)

A. Public Health

- . Fluorides
- . Sealants
- . Prevention of dental caries
- . Prevention of periodontal disease
- . Infection control

B. Pedodontics

- . Handicapped
- . Restorative dentistry, pulp therapy
- . Rampant caries
- . Traumatic injuries
- . Gingival disease
- . Oral surgery
- . Nutrition

ORAL MEDICINE,DIAGNOSIS AND RADIOLOGY(OMED 411,412)

The basic course of oral medicine is organized to supply the student with the fundamental principles of identification of oral diseases. Physical signs of systemic diseases of dental interest are considered to provide the students with the essentials of assessment and management of medically compromised patient.

The course on oral diagnosis includes the basic principles of patient interview, the fundamentals of physical examination, recognition of oral disease. Principles of Biomedicine, an interdisciplinary course is taught in conjunction with the Department of Oral Pathology, it introduces the student to oral diagnosis through didactic presentations concerning patient interview, clinical examination, oral radiology and treatment planning.

The clinical course is supplementary to the first term where the students are allowed to record patient history and perform a comprehensive physical examination. In addition interpretation of various laboratory test results and relation between physical status of the patient and dental plan are considered.

The course comprises two hours lectures and two hours clinical session weekly, to diagnose and integrate the biological aspect of the disease into the clinical setting.

SYLLABUS

ORAL MEDICINE, DIAGNOSIS AND RADIOLOGY (OMED 411)

A-ORAL MEDICINE

. Basic immunology

- Innate immune response
- Humoral immune response
- Cell mediated immune response

. Hypersensitivity reaction

- Type I, II reaction
- Type III reaction
- Type IV reaction
- Drug related reaction

Blood cell disorders

- Pernicious anemia
- Iron deficiency anemia
- Plummer Vinson syndrome
- Hemolytic anemia
- Aplastic anemia, Polycythemia
- Leukemia
- Multiple myeloma
- Agranulocytosis, cyclic neutropenia

. Bleeding clotting disorders

- Platelet disorders
- Hemophilia
- Patients on anticoagulants
- Management of patients with bleeding and clotting disorder

B-ORAL DIAGNOSIS & RADIOLOGY

- . Terminology/ outline of diagnosis
- . Case history
- . Techniques for clinical examination
- . Outline of clinical diagnosis
- . Extra-oral examination
- . Face
- . Skull and eye
- . Nose, hair, skin
- . Neck
- . Lymph node
- . Intra-oral examination

Radiographic examination of:

- Cyst
- . Benign tumors of the jaw
- . Malignant tumors of the jaw
- . Disorders of TMJ
- . Trauma
- . Systemic diseases manifested in the jaw

ORAL MEDICINE, DIAGNOSIS AND RADIOLOGY(OMED 412)

A-ORAL MEDICINE

- . Evaluation and management of patient with cardiovascular disease
 - Patients at risk for endocarditis
 - Coronary vessel disease
 - Hypertension
 - Heart failure
- . Evaluation and management of patient with endocrinal disease
 - Thyroid gland disorder
 - Adrenal gland disorder
 - Diabetic patient
- . Evaluation and management of sexually transmitted disease
 - Acquired immune deficiency syndrome
 - Hepatitis
- . Occupational diseases
- . Halitosis
- . Focal infection

B-ORAL DIAGNOSIS & RADIOLOGY

- . Hemogram
- . Tests bleeding and clotting disorder
- . Blood chemistry
- . Liver function test
- . Biopsy
- . Urine analysis
- Radiographic examination of:
 - . Paranasal sinuses
 - . Diseases of the bone
 - . Developmental disturbances
 - . Ossification
 - . Orofacial implants

ORAL MEDICINE & PERIODONTOLOGY (OMED 511,512)

The clinical course deals with the diagnosis of patients with clinical conundrum and treatment of the oral lesion even in patients with a therapeutically challenging disease. Chair side case and slide presentation are scheduled for students in order to discuss the appropriate approach for each patient.

The course of periodontology deals with the fundamentals of periodontal problems. The clinical phenomena of periodontal disease in terms of underlying tissue changes and the biological nature of periodontal response are discussed. Once this aspect is mastered the students are introduced to the diagnostic criteria of periodontal disease and possible prognostic factors, which may judge the outcome of treatment. Non-surgical approach for management of periodontal disease and the wide array of pharmacological therapeutic modalities are included in the course. In addition, various surgical techniques for regenerative and cosmetic purposes are illustrated and comprehensive rationale for periodontal treatment is applied in clinical sessions.

Clinical course is supplementary to the first semester including case presentation and open discussions. The ability of the students to perform proper care for patients with oral diseases is evaluated. Identification of medically compromised patients and their management are discussed in clinical sessions.

Clinical course deals with diagnosis of periodontal disease and recent advances in periodontal evaluation. Students have didactic exposure to advanced periodontal procedures and enter into a learning contact that delineates a set of basic minimum experiences.

Moreover the clinical course deals with prognosis and treatment of periodontal disease where scientific basis for the practice of periodontology are evaluated. New hypothesis and treatment concepts are discussed. Students develop the skill for non-surgical management of periodontal disease. Students attend demonstration on various surgical techniques. Interested students have the opportunity to choose from a broad range of additional experiences on selected case under supervision.

The course comprises a two-hour lecture and two hours of clinical sessions

SYLLABUS

ORAL MEDICINE & PERIODONTOLOGY(OMED 511)

A-ORAL MEDICINE

White and red lesions

- Oral keratosis
- Lichen planus
- Leukoplakia
- Lupus erythematosus
- Candidosis
- Miscellaneous lesions

- . Diseases of the tongue
- . Oral sensory disorders

B-PERIODONTOLOGY

- .Macroanatomy of the periodontium
- . Gingiva and periodontal ligament
- . Alveolar bone and cementum
- . Classification of periodontal disease
- . Pathogenesis of periodontal disease
- . Etiology of periodontal disease
- . Oral microbiology
- . Dental plaque formation
- . Role of dental plaque in periodontal disease
- . Ecology of dental plaque
- . Dental calculus
- . Plaque-induced gingivitis
- . Non-plaque induced gingivitis
- . Chronic periodontitis
- . Local predisposing factors
- . Systemic modifying factors
- . Focal infection; cardiac disease, diabetes, pregnancy
- . Overview on correlation between systemic disorder and periodontal disease
- . Diagnosis of periodontal disease

ORAL MEDICINE & PERIODONTOLOGY(OMED 512)

A-ORAL MEDICINE

Oral ulcers

- Aphthous ulcer
- Mucocutaneous ocular syndrome
- Erythema multiforme
- Pemphigus
- Pemphigoid
- Herpes virus infection
- Coxsackievirus infection
- Miscellaneous oral ulcer

Pigmentation of the oral tissue

- Melanotic lesion
- Vascular lesion
- Metallic intoxication

B-PERIODONTOLOGY

.Necrotizing periodontal disease

- . Abscess of the periodontium
- . Aggressive periodontitis
- . Periodontitis as a manifestation of systemic disease
- . Differential diagnosis of periodontal disease
- Relationship between orthodontic and periodontal problem
- . Relationship between endodontic and periodontal problem
- . Prognosis of periodontal disease
- . Outline for treatment of periodontal disease
- . Mechanical plaque control
- . Antiseptic mouth washes
- . Local and systemic mouth washes
- . Rationale for periodontal surgery
- . Surgical-instrument-periodontal pack
- . Gingivectomy
- . Classification of dental flaps
- . Modified Widman flap
- . Osseous grafts
- . Guided tissue regeneration
- . Growth factors
- . Indications and contraindications of mucogingival surgery
- . Apically and laterally positioned flap
- . Free gingival graft and subepithelial connective tissue graft

Elective courses

Forensic Dentistry (FNSC 311)

This elective course will introduce the participant to the field of forensic science focusing on forensic dentistry. Participants will be able to understand the scope of forensic dentistry, the role of forensic pathology, forensic anthropology, forensic photography, and forensic dental radiology.

Human dental identifications, child abuse issues, and bite mark investigations will be included. Dental jurisprudence and dental record keeping will be clarified.

Oral and maxillofacial surgery externship (OSUR 414)

The course will be an intensive block of time in which the student will work in hospital outpatient clinics, take facial trauma calls with residents and get exposure to emergency room and operating room protocol.

Implantology (OPRO 513)

The students will participate in all phases of an implant restoration from diagnosis through final restoration/ maintenance. The student will be directly responsible for obtaining all diagnostic data, fabricating a diagnostic wax-up, and fabricating a radiographic stent. During this process, the student will interact closely with the surgeon to prepare a case presentation and will then be responsible for presenting this case. The student will assist during the surgical placement. The student will have direct responsibility for fabricating provisional and final restorations for the prosthesis.

Psychology and Sociology (PSYC 311)

According to the Bi/Polar theory of personality presented in this interactive elective, people are composed of three pairs of opposite strengths which, paradoxically, work together to produce an effective, productive individual. Learning

to use these strengths in balance is not only crucial for personal fulfillment, but also for effectively communicating and working with others.

This course constitutes interlinked workshops for healthcare students and professionals interested in exploring the subject of empathic communication between caregivers and their patients. The course will be both philosophical and practical in outlook, seeking to provide an arena for lively, debate as well as functional learning. As it is the aim of the instructor, a professional actor, to provide participants with tools for more effective communication based on a model of actor training, the focus of the workshops will be active, experiential, and free-flowing.

Instructor CPR (OSUR 513)

This elective consists of lectures on background material relevant to teaching CPR as well as manikin skills mastery. Students must be able to demonstrate their CPR skills on a manikin, demonstrate their teaching skills by presenting lecture.

Anatomical Model Construction (ART 311)

Students learn the anatomy of regions important to dentistry by recreating them in three dimensions, using waxes, acrylic, clay, wires and similar media to represent muscles, nerves, TMJ, etc, possibly using a skull as a framework. Suitable subjects include the oral cavity, muscles of mastication and the distribution of the trigeminal nerve as well as other areas of interest to the student. This exercise makes the anatomy studied almost unforgettable.

Color and Appearance (ART 311)

Students will learn some appearance attributes such as gloss, surface roughness, transparency, translucency, opalescence, fluorescence, and phosphorescence. Corrections of restorative materials and tooth bleaching will be covered as well. In addition, the student will learn about clinical shade matching and participate in a color training program using custom designed software.

Research Methodology (RESE 450)

This course provides an introduction to program evaluation research in health care. It focuses on designing, conducting and using results of research. Practical issues are also addressed such as how to obtain informed consent and approval of institutional review boards, and how to get the most out of limited sources.

Through a series of case studies, students acquire an understanding of strength and limits of different kinds of evaluation research.

Advanced Topics in Financial Planning (BAUD 111)

It includes cost accounting and financial planning in the implementation and management of public health programs and dental care. Finance tools such as net present value and various measures of return on investment are developed by looking at the costs and benefits of public health policies. The course discusses aspects of program management such as loans, financing, leasing, and investments and emphasizes computer spreadsheet software use.

Dental Practice Management (OPED 412)

The course provides information on the non-scientific and non-technical aspects of dental practice, including office designing, financing, staffing and financial management.

Total quality management (BAUD 112)

The concept of quality simply means the absence of defects from a service. The student will learn about the benefits of total quality management to the patients, the organization and its employees. In addition they will learn more about the three TQM processes; quality planning, quality control, and quality improvement.

Courses required by the faculty of dentistry

COMPUTER SCIENCE (CS 101,102)

This course includes the concepts of computer science. An introduction to practical application of computer is discussed. This basic part helps students as the beginning to use computer and are useful later as a way to organize knowledge and order patient's file. The practical course deals with the applied data and navigating through various scientific sites to help students in their research work.

ENGLISH LANGUAGE (ENG 101,102)

This course focuses on extensive practice in rhetorical strategies and techniques, appropriate grammatical structures and verb tenses. It presents an integrated program of writing for dental students. The goal of this course is to help students to understand the terminology in medical and dental fields and to provide the correct spelling and division of words most commonly used in medical writing.