



***URUK UNIVERSITY***  
***COLLEGE OF DENTISTRY***  
***2ND YEAR***  
***CURRICULUM***

## PROSTHODONTICS

<u>No.</u>	<u>Subjects</u>	<u>Hours</u>
1-	Complete denture prosthesis: a- Definition. b- Desired objectives.	1
2-	Anatomy in relation to complete denture, upper maxillary landmark.	1
3-	Anatomy in relation to complete denture, lower maxillary landmark.	1
4-	Impression trays: a- Definition. b- Stock tray.	1
5-	Primary impression: a- Production of study model. b- Common fault in impression making.	1
6-	Study cast: Special trays, materials, importance and advantages.	1
7-	Secondary of final impression: a- Mucostatic impression technique. b- Functional impression technique.	1
8-	Final impression materials: a- Plaster impression. b- Zinc/oxide eugenol paste. c- Elastomere impression. d- Boxing and production of master cast.	1
9-	Occlusion blocks: a- Record bases. Occlusion rims. b- Uses of bite rims, occlusal plane.	1
10-	Recording jaw relations: a- Maxillo-mandibular relation.	1

b- Vertical dimensions.

11- Methods of recording vertical and horizontal relations: 1

a- Mechanical method.

b- Physiological method.

c- Centric jaw relation, methods of recording. d-  
Center occlusion.

e- Eccentric jaw relation.

12- Articulators: 1

a- Types of articulators.

b- Face-bow, definition, types.

13- Mounting the cast on the articulator. 1

Method, common errors.

14- 14- Selection of artificial teeth: 1

a- Anterior teeth. b-

Posterior teeth.

c- Types of teeth according to material, cusp inclination.

15- Arrangement of artificial teeth: 1

a- Guides.

b- Arrangement of upper and lower six anterior teeth.

16- Arrangement of posterior teeth: 1

a- Orientation of occlusion plane. b-

Balanced occlusion.

17- Wax contouring of denture. 1

Waxing carving upper and lower denture.

18- Flasking of denture. 1

Definition half and full flasking of denture.

19- Wax elimination: 1

a- Preparing the mold for packing.

b- Separating medium.	
20- Preparation and packing of acrylic resin:	1
a- Mixing, packing.	
b- Processing of dentures.	
21- Deflasking of dentures:	1
a- Removing of dentures.	
b- Reprocessing of dentures.	
22- Abrasive and polishing agents:	1
a- Types of burs.	
b- Carbrandum, pumice and rouge.	
23- Selective grinding.	1
Rules for selective grinding.	
24- Denture repair.	1
Fractured denture, replacing teeth.	
25- Relying and rebasing.	1
26- Seminars and review of the program.	5

## **ORAL HISTOLOGY**

<b><u>No.</u></b>	<b><u>Subjects</u></b>	<b><u>Hours</u></b>
1-	Development of the oral cavity: a- Fertilization. b- Basic germ layer: c- Ectoderm. d- Mesoderm. e- Endoderm. f- Neural crest formation, migration and derivative. g- Brachial arches. Development of face and oral cavity:	1
2-	a- Development of the facial process. b- Development of the tongue. c- Clinical considerations: d- Facial clefts. e- Development cyst. f- Lingual anomalies. g- Labial anomalies. Development and growth of the teeth:	2
3-	a- Enamel organ. b- Dental papilla. c- Dental sac. Root formation:	2
4-	a- Hertwig's epithelial root sheath. b- Uni- and multi-rooted tooth. c- Clinical considerations: d- Initiation stages.	1

e- Proliferation.	
f- Histodifferentiation.	
g- Morphodifferentiation. h-	
Apposition.	
5- Enamel:	1
a- Physical and chemical characters. b-	
Structure elements.	
6- Amelogenesis:	1
a- Ameloblast file cycle.	
b- Formation of the enamel matrix. c-	
Mineralization of the matrix.	
7- Clinical consideration in enamel.	1
a- Abnormal enamel formation.	
b- Genetic factor responsible for the enamel formation. c-	
System and local factors.	
8- Dentine:	1
a- Physical and chemical properties. b-	
Dentine structure.	
9- Structure and landmarks could be seen in dentine:	1
a- In ground section.	
b- In decalcified section.	
c- Different kinds of dentine.	
10- Dentinogenesis;	2
A- Odontoblast life cycle.	
b- In decalcified section.	
c- Dentine enervation theories.	
11- 11- Pulp.	2
a- Mature pulp.	

b- Formation and development of the pulp.

c- Structure elements. d -

Pulp stones.

e- Defense cell neural system. f -

Clinical consideration.

12- Cementum:

2

a- Mature cementum structure and properties. b-

Cellular cementum. c- Acellular cementum. d-

Cementogenesis.

e- Cemento-enamel junction. f-

Cemento-dentinal junction. g-

Clinical consideration.

13- Periodontal ligament:

2

a- Development and formation.

b- Clinical consideration of the periodontal ligament. c-

Physiological changes.

14- Oral mucosa membrane:

1

a- Transitional area.

c- Kinds of oral mucosa.

15- Maxilla and mandible:

3

a- Development of the alveolar process. b-

Properties of the alveolar bone. c- Clinical considerations.

16- Dentino-gingival junction.

1

Development of the epithelial attachments.

17- Salivary gland:

2

a- Classification.

b- Structure elements.

c- Clinical considerations.

18- Eruption of teeth: 2

a- Mechanism of eruption.

b- Clinical considerations.

19- Shedding of the deciduous teeth: 1

a- Process of shedding.

b- Clinical considerations.

20- Histochemistry of the tissue: 1

a- Structure and chemical composition of oral tissue. b-

Specific histochemical method.



## GENERAL HISTOLOGY

<u>No.</u>	<u>Subjects</u>	<u>Hours</u>
1-	<b>Hematopoiesis:</b> a- Red and yellow bone marrow, maturation & erythrocytes maturation & granulocyte. b- Maturation & lymphocytes & monocytes, origin of platelets.	5
2-	Circulatory system: a- General structure & blood vessels, general structure, types & capillaries. b- General structures & different types & arteries. c- General structure & different types & veins, general structure & heart.	6
3-	Lymphoid system: a- Cellular & humoral immunity, antigen & antibody, differentiation & b- b- lymphocytes. c- Thymus, lymph node. d- Spleen, tonsil, encapsulated lymphoid, liver.	6
4-	Digestive system: a- General structure & digestive tract, lip. b- Pharynx, esophagus, cardiac & pyloric parts & stomach. c- Parts & small intestine (duodenum, jejunum & ileum). d- Colon, rectum, appendix. e- Salivary gland (parotid gland - sublingual gland & submaxillary gland). f- Liver. g- Pancreas, gall bladder.	6
5-	Respiratory system: a- Nasal cavity, paranasal sinuses, nasopharynx. b- Larynx, trachea, bronchial tree. c- Pulmonary blood vessels, nerves, pleura & lung.	6

- |   |   |
|---|---|
| 6- Skin:  | 5 |
| a- Epidermis.   |   |
| b- Dermis, subcutaneous layer. c-                                     |   |
| Hair, nails.  |   |
| d- Glands & skin, vessels & nerves & the skin.                        |   |
| 7- Urinary system:  | 5 |
| A- Nephron.   |   |
| b- Collecting tubule & ducts, juxtaglomerular apparatus. c-           |   |
| Blood circulation, bladder & ureter.                                  |   |
| 8- Reproductive system:   | 5 |
| a- Testis, intratesticular genital ducts.                             |   |
| b- Excretory genital duct, accessory genital gland, penis. c-         |   |
| Ovary, oviduct.   |   |
| d- Uterus, mammary gland.   |   |
| 9- Endocrine system:  | 5 |
| a- Pituitary gland. b-  |   |
| Adrenal gland.  |   |
| c- Thyroid gland, parathyroid gland, pineal body.                     |   |
| 10- Nervous system:   | 6 |
| a- Neurons, neuroglia.  |   |
| b- Nerve fibers, nerve trunk, and synapses. c-                        |   |
| Sympathetic & parasympathetic system. d-                              |   |
| Meninges, spinal cord. e- Cerebrum, cerebellum.                       |   |
| 11- Sense organs:   | 5 |
| a- Receptors related to somatic & visceral sensitivity, proprioceptor |   |
| system, and chemoreceptors. b- The                                    |   |
| eye. c- The ear.  |   |

## GENERAL PHYSIOLOGY

<u>No.</u>	<u>Subjects</u>	<u>Hours</u>
1-	<p>Blood physiology:</p> <p>a- Functional organization of the human body &amp; the control system of the internal environment.</p> <p>b- General function, the plasma composition &amp; functions, red blood cells, genesis of r. b. c., regulation of r.b.c. production.</p> <p>c- Formation of hemoglobin, iron metabolism, structure of hb., properties &amp; types, destruction of r.b.c.</p> <p>d- White blood cells, genesis of w.b.c., morphology &amp; general properties, classification &amp; functions.</p> <p>e- Hemostasis &amp; blood coagulation, events in hemostasis, mechanisms of blood coagulation.</p> <p>f- Lysis of blood clot, formation of prothrombin activator, extrinsic &amp; intrinsic mechanisms.</p> <p>g- Prevention of blood clotting, intravascular anticoagulant, blood diseases.</p> <p>h- Blood groups, agglutinins &amp; agglutinogens, blood typing, cross matching test.</p> <p>Physiology of respiration:</p>	
2-	<p>a- Pulmonary ventilation, respiratory pressures, the work of breathing, surfactant. the pulmonary volumes &amp; capacities &amp; their significance</p> <p>b- ventilation of the alveoli, the dead space, diffusion of gases through the</p> <p>c- respiratory membrane. The respiratory unit, the respiratory membrane.</p> <p>d- factors affecting the rate of gas diffusion through the respiratory</p>	

membrane, uptake of O<sub>2</sub> by the pulmonary blood, diffusion of O<sub>2</sub> from the capillaries to the interstitial fluid. Diffusion of O<sub>2</sub> from the interstitial fluid to the cells. Reaction of hb. & O<sub>2</sub>. the factors affecting the affinity of hb. for O<sub>2</sub>, CO<sub>2</sub> transport. regulation of respiration, the respiratory center, e- neural regulation & chemical regulation of respiration respiratory abnormalities. Hypoxia, cyanosis, dyspnea, hypercapnia.

3- Physiology of kidney & body fluids:

The nephron. Blood supply of the nephron, innervating of the renal vessels, filtration. mechanisms of tubular reabsorption & secretion, pressure in the renal circulation, concentration of substances at different points in the tubules, the plasma clearance, mechanisms of concentrating & diluting of urine mechanism of excreting a concentrated urine, fluid volume excretion. Body fluids, total body water, distribution of body water, function of body water. Composition of ecf & icf, distribution of fluid volume between plasma & the interstitial fluid, regulation of water balance.

4- Physiology of endocrine:

Nature of hormones, function of hormones, mechanism of action, hypothalamus. The pituitary gland, hormones of the anterior lobe, abnormal secretion, hormones of posterior lobe. The thyroid gland, function of the thyroid hormones. Diseases of the thyroid gland. the parathyroid glands. Absorption of calcium & phosphate, metabolic factors in development of teeth & mineral exchange, abnormalities of parathyroid glands. The adrenal gland, mineralcorticoid & glucocorticoid hormones, abnormalities of adrenocortical secretion. pancreas gland, pineal gland

5- Physiology of the cardiovascular system:

Anatomy of cvs, anatomy of the heart, cardiac muscle physiology.

Conduction system of the heart, sa&av nodes anatomy & physiology, conductive abnormalities. Cardiac cycle, ecg, systole & diastole. Heart rhythm & cardiac muscle action potential. The circulation of blood, cardiac output, blood physiology, blood flow. Factors controlling blood flow, rank-starling law. Dynamic anatomy of blood vessels, blood flow measurement, types of blood flow. Blood pressure, methods of measuring blood pressure. Local circulation. Factors controlling blood pressure, rapid factors, neural. Humoral. Long term regulation of blood pressure, hypertension, types, causes. Treatment. Circulatory shock: types, stages, treatment. Fainting. Cardiac arrest.

6- Physiology of muscle & nerve:

General physiology of the cell. Ions & ions transport. Anatomy of the nerve fiber. Electrical physiology of nerve fiber. Local anesthesia & nerve fiber & action potential. Anatomical physiology of the nerve fiber. Types of muscle fiber. Contraction of muscle fibers. Energy sources. Excitation contraction coupling, electrical properties action potential, EMG, neuromuscular junction.

7- Physiology of the gastrointestinal tract:

Movements of the food in the GIT, swallowing, gut innervating, mastication (1). Mastication (2), saliva, secretions of the stomach. Secretions of the small intestine. Digestion of the food, absorption of the food through the alimentary canal. Physiology of the nervous system: levels of integration: higher brain level (cerebrum & cerebral cortex),

spinal cord, lower brain level (cerebellum & brain stem). somatosensory system: types & classification of receptors, types of sensations( pain sensation, thermal sensations, touch & pressure sensations).continued on somatosensory system, motor system ( spinal cord ):reflex arc, & reflexes. Chemical sensation: olfactory sens. (smelling), gustatory sens. (taste). Special sensations: hearing, vision. & 47: autonomic nervous system: sympathetic & parasympathetic systems.

# BIOCHEMISTRY

<u>No.</u>	<u>Subjects</u>	<u>Hours</u>
1-	Enzymes : a-Definition. b- Terminology. c- Classification. d- Enzymes in clinical diagnosis. e- Kinetic properties of enzyme. f- Enzyme inhibition. g- Model of enzyme-substrate binding. h- Enzyme regulation. i- Mechanisms of enzyme catalysis. j- Plasma enzyme in diagnosis. k- Isoenzymes.	4
2-	Lipids : a- Lipid classes. b- Lipid metabolism: c- Triacylglycerol synthesis. d- F.A. degradation. e- F.A. biosynthesis. f- Regulation of F.A. metabolism in mammals. g- Cholesterol metabolism.	3
3-	Vitamins: a- Definition. b- The major groups (fat & water-soluble vitamins). c- Study the individual vitamins under certain general headings: -sources, chemistry, metabolism, physiological functions, deficiency diseases, daily	4

requirements, hypervitaminosis, vitamin antagonists, vitamin A, D, E, K, C and B, niacin, pyridoxine, pantothenic acid, biotin, folic acid.

d- Brief definition of enzyme cofactors, coenzyme and the function of the coenzyme.

4- Biosynthesis and metabolism of protein:

4

a- Review of chemistry of protein and amino acids. b-

Digestion and absorption of protein. c- Dynamic equilibrium.

d- Sources and utilization of blood amino acids. e-

Nitrogen balance (positive & negative). f-

Concentration of amino acids.

g- Some hormones that stimulate the uptake of amino acids by tissues. h-

Protein synthesis.

i- Inhibition of protein synthesis.

j- Brief definition of the operon concept.

k- Oxidation of amino acids (glycogenic & ketogenic A.AS).

l- The general reaction applicable to an A.A: (transamination, transamidation

, Deamination, Decarboxylation). m- Metabolism of the carbon skeleton. n-

Sources & Metabolism of ammonia. o- Methods for removal of NH<sub>3</sub>.

p- Mechanism of H<sub>3</sub> intoxication. q-

Types of hyperammonemia.

5- Carbohydrate metabolism:

3

a- Glycogen metabolism. b-

Glycolysis.

c-Gluconeogenesis.

d- Metabolism of other important sugars.



- e- Citric acid cycle.
- f- Electron transport.
- g- Oxidative phosphorylation. i- Oxidative stress.
- j- Glucose -6- phosphate dehydrognase deficiency.
- 6- Digestion and absorption: 3
  - a- Saliva.
  - b- Gastric juice.
  - c- Pancreatic juice.
  - d- Intestinal secretion. e- Biosynthesis of bile.
  - f- Biosynthesis of bile pigment, bilirubin and its fate.
- 7- Detoxification : 3
  - a- Mechanism of detoxification. b- Reduction mechanism. c- Conjugation reactions: d- Glucuronic acid. e- H<sub>2</sub>SO<sub>4</sub>.
  - f- Methylation. g- Glutamins.
  - h- Acetic acid acetylation.
- 8- Urea formation: Krebs- Henseleit cycle (five steps). 3
  - Blood urea.
  - Deficiency of the five enzymes which concerned in urea synthesis and genetic defect.
- 9- Metabolism of individual amino acids and abnormalities of A.As 3
  - metabolism: Glicine, Alanine, Serine, Threonine, Aspartic, glutamic acids,

Aeginine, Ornithine and citrulline.

Branched chain aminoacids: proline, hydroxyl proline, histidine, Phenyl alanine and tyrosine.

Tryptophan, creatine and creatinine.

Glutathione ( composition & functions ).

## Anatomy

	Topics Covered
1	Scalp
2	Face
3	Parotid Gland
4	Facial Artery
5	Temporal & Infratemporal Fossa
6	Temporal & Infratemporal Fossa
7	Temporal & Infratemporal Fossa
8	Temporal & Infratemporal Fossa
9	Orbit
10	Orbit
11	Nasal Cavity
12	Nasal Cavity
13	Cranial Nerves
14	Cranial Nerves
15	Central nervous system
16	Central nervous system
17	The neck
18	The neck
19	The neck
20	Pharynx
21	Alimentary tract
22	Alimentary tract
23	Alimentary tract
24	Alimentary tract
25	Alimentary tract
26	Major body vessels
27	Major body vessels
28	Anatomy of nerve block
29	Lymphatic drainage of head & neck
30	Spaces of head & neck

## **DENTAL MATERIALS**

<b><u>No.</u></b>	<b><u>Subjects</u></b>	<b><u>Hours</u></b>
1-	Introduction to dental materials. Definition and importance.	1
2-	Physical, mechanical, chemical and biological properties.	1
3-	Gypsum products.	2
4-	Investments.	1
5-	Impression materials. Classification.	1
6-	Indication and usage.	2
7-	Properties of impression materials.	2
8-	Non-metallic denture base materials.	1
9-	History, types.	1
10-	Polymerization, PMMA.	1
11-	Heat and cold cure. Properties.	1
12-	Metallic denture base material: a- Stainless steel. b- Cobalt/chromium.	2
13-	Precious, non-precious metals: a- Stainless steel. b- Metals for crown and bridge.	1
14-	Waxes, types, composition and uses. Investment.	1
15-	Filling materials. Silicate and acrylic.	2
16-	Composite.	2
17-	Amalgam.	1
18-	Amalgam properties.	1
19-	Temporary filling.	1
20-	Cement.	
21-	Tissue conditioner. Soft-liner.	
22-	Polishing and abrasive. Denture cleaners.	

