

UNIVERSITY of BENGHAZI .
Faculty of Dentistry

Postgraduate Program

MSc in

ORAL PATHOLOGY

2010

Study program for MSc in Oral Biology

**University of Benghazi
Faculty of Dentistry
Benghazi - Libya**

**POSTGRADUATE PROGRAM OF STUDIES
IN THE ORAL PATHOLOGY**

**DEPARTMENT OF ORAL MEDICINE , ORAL
PATHOLOGY , ORAL DIAGNOSIS AND ORAL
RADIOLOGY**

PROSPECTUS FOR THE (YEAR)

A. Basic medical sciences:

The oral pathology understanding is based on a deep knowledge of gross and microscopic oral anatomy, general pathology, physiology, microbiology and biochemistry (bio-medical sciences).

I: General histology and cell biology: (30 hours)

Aims:

The aim of this course of lectures and tutorials is to familiarize the student with the central features of cell structure and function and to provide the necessary background required to understand the significance and relevance of molecular cell biology to the specialty of oral pathology.

Objectives:

At the end of the course, the students should be familiar with the basics of the following topics:

1. Proteins: structure and function.
2. The basic features of enzymology.
3. The structure and function of eukaryotic cell.

4. Biomembranes: molecular structure and function.
5. Transport across cell membrane.
6. The cytoskeleton and cell motility.
7. Organelle function.
8. Intracellular traffic.
9. Cell to cell signaling: hormones, antibodies and receptors.
10. The structure of eukaryotic chromosomes.
11. Eukaryotic transcription and RNA processing.
12. Genetic engineering and recombinant technology.

II. Oral histology:

1. Tooth development.
2. Enamel and amelogenesis.
3. Dentin and dentinogenesis.
4. Cementum and cementogenesis.
5. Pulp.
6. Periodontal ligament.
7. Alveolar bone.
8. Oral mucosa.
9. Salivary glands.
10. TMJ.

III. Anatomy:

1. The skull bones, the face bones and foramina.
2. Scalp and face
3. Side and back of the neck
4. The cranial cavity (interior of the base of the skull, dura mater and the venous sinuses).
5. The orbit and the eye ball.
6. The temporal and infratemporal regions and the tempromandibular joint.

7. The anterior triangle of the neck.
8. The parotid region.
9. The submandibular region.
10. Lymph drainage of the head and neck.
11. The blood supply and nerve supply of the jaws, oral and paraoral soft tissues.
12. Special embryology of:

The skull, jaws, teeth, face, nose, palate, tongue, and pharyngeal (branchial or visceral) arches.

IV. General and oral physiology:

1. GIT system.
2. Endocrine system.
3. Blood.
4. Nervous system.
5. Calcium and phosphorus metabolism.
6. Formation and mineralization of the dental tissues.
7. Permeability and age changes in the dental tissues.
8. The effect of hormones on oral tissues.
9. Influence of diet on oral structures.
10. Saliva and its physiology.
11. Sensations arising in the mouth.

V. Microbiology: (30 hours)

Aims:

To provide the student with a background of microbiology relevant to practice and research within the specialty of oral pathology.

Objectives:

By the end of this course the student will have a background on:

1. Diversity of microorganisms.
2. Bacteria: commensals, pathogens and opportunists.
3. How bacteria cause disease.

4. Oral bacteria and disease.
5. Viruses structure and function.
6. Viral diseases.
7. Yeasts, mycoplasma and fungi.
8. Diagnostic microbiology. (Smears, swabs and cultures).
9. Microbiology and research.
10. Overview.

VI: Principles of general and oral pathology (30 hours)

Aims : To provide an outline of general pathology with particular emphasis on inflammation, neoplasia and degenerative disease. To provide an outline of oral pathology to enable students to prepare for more advanced courses in sociality of oral pathology.

Objectives of general pathology:

By the end of this course the students should have knowledge of:

1. Inflammation and repair disease.
2. Atrophy, hyperplasia, hypertrophy, metaplasia and neoplasia.
3. Age changes and degenerative diseases.
4. Basic immunology and autoimmune disease.
5. Pathology of bone.
6. Hematology and vitamin deficiencies.
7. Endocrine pathology.
8. Gastrointestinal pathology.
9. Respiratory pathology.
10. Cardiac pathology.

Objectives of oral pathology:

The course provides a basis for the practice of oral pathologist. It deals with the diseases of the teeth, bones of jaws including TMJ, oral mucous membranes and associated soft tissues, salivary glands, and oro-facial manifestation of the systemic diseases.

The causes (etiology) of the various diseases and the development (pathogenesis) and microscopic appearance of the lesions are emphasized. The underlying basic pathologic principles are stressed. The clinical appearance of the lesions is also studied to provide a basis for an introduction to the clinical differential diagnosis. Students are expected to make full use of their textbooks, lecture notes and the laboratory sessions and of the continuous exercises during the course.

By the end of this course the student should have knowledge on:

1. Developmental and the genetic diseases affecting the oral and paraoral structures.
2. Attrition, abrasion and erosion of teeth.
3. Dental caries (Etiology, clinical aspects and histopathology).
4. Diseases of the pulp.
5. Diseases of periapical tissues and osteomyelitis.
6. Spread of oral infection.
7. Dental and non-dental cysts of the jaws and oral cavity. .
8. Infectious diseases of the oral mucosa (bacterial, fungal and viral).
9. Oral ulceration.
10. Oral vesiculobullous diseases.
11. Oral manifestation of systemic diseases.
12. White lesions of the oral mucosa
13. Precancerous lesions of the oral cavity.
14. Tumors of dental origin.
15. Tumors of the jaws and oral soft tissues of non-dental origin.
16. Bony disorders affecting the jaws.
17. Salivary gland diseases and tumors.

B. Applied scientific methods:

I. Statistics:

1. Statistics in medical research.
2. Types of data.
3. Describing data.

4. Theoretical distributions.
5. Principles of statistical analysis.
6. Comparing groups-continuous data (t-student test, one way analysis of variance).
7. Comparing groups – categorical data (The chi squared test).
8. Relations between two continuous variables (correlation and regression).
9. Relation between several variables (two-way and multi-analysis of variance, multiple regression).
10. Research design.

Second year core courses

Lectures /Seminars and other Activities :

These lectures and seminars will be covered by the teaching staff of the dental school or by other invited specialists in the field from other universities.

1. Techniques :

1. Examination of the surgical specimens and principles of cutting up.
2. Routine histopathology.
3. Histochemistry.
4. Immunohistochemical techniques.
5. Flow cytometry technical aspects
6. Tumor markers
7. Electron microscope.

2. Diagnostic Pathology :

- a) There will be continuous sessions of diagnostic pathology weekly during the second year and the teaching staff in charge will give the students 5-10 slides every week and the student should submit the diagnosis at the end of the week in the prepared form. The student should explain the criteria upon which the diagnosis was based.
- b) There will be one clinical session per week for clinical pathology. The student is supposed to learn the correct approach

to differential diagnosis and final diagnosis (biopsy and cytological smears as well as other investigations).

3. Journal Club :

Students should be familiar with relevant current periodicals .

Each week two students would present topics from a recent oral pathology or other relevant journal allocated to them by the teaching staff.

4. Student Presentations :

During the second year each student is required to select 3 topics for seminars to be presented in the seminar session for the whole department.

5. Advanced level lectures in selected topics of oral pathology:

1. Developmental and genetic diseases affecting the oral and paraoral structures.
2. Dental and non-dental cysts of the jaws and oral cavity.
3. White lesions of the oral mucosa.
4. Pigmented lesions of the oral mucosa.
5. Infectious diseases of the oral mucosa (bacterial, fungal and viral).
6. Oral ulceration.
7. Oral vesiculobullous diseases.
8. Metabolic and endocrine disturbances.
9. Oral manifestation of systemic diseases.
10. Precancerous lesions of the oral cavity.
11. Tumors of dental origin.
12. Tumors of the jaws and oral soft tissues of non-dental origin.
13. Metastatic tumors.
14. Salivary gland diseases and tumors.
15. Bony disorders affecting the jaws.
16. Granulomatous diseases of the oral cavity.
17. Differential diagnosis of facial pain
18. Autoimmune diseases.

6. Research project:

Students are encouraged to select a topic for their research project may be early in the course. And they are required to prepare a protocol including an introduction, aim of the work and the material and methods and references .

Further readings:

- 1. Oral and maxillofacial pathology. Neville.**
- 2. Clinicopathologic correlations. Regezi**
- 3. Oral medicine and oral pathology. Cawson. 2002.**
- 4. Soft tissue tumors.**
- 5. Text book of general pathology.Kumar et al. 2002.**