

PROGRAM OF ELECTIVE COURSES AND CLERKSHIPS

NUMBERS FOLLOWING COURSES AND CLERKSHIPS

The first number following the title of a course indicates the total number of lecture, conference or discussion hours given.

The second number indicates the total laboratory or clinical practice hours.

The third number indicates the duration of the elective.



ELECTIVES IN THE BASIC MEDICAL SCIENCES

1. BIOCHEMISTRY:

Elective in Biochemistry. 0.180-360; 1-2 months. The objectives of the elective are to introduce students to basic knowledge in selected areas of biochemistry, to the experimental approach in investigating a problem and to the basic techniques used in biochemical research. Electives are available in the field of enzymology, which includes techniques of protein purification, enzyme assay and elucidation of kinetic properties. Students can also work in the field of molecular biology as it is applied in the study of genetic disorders, apoptosis or induction of cancer. Students participate in the ongoing educational activities of the Department. At the end of the elective, the students are expected to have become familiar with some of the research problems of interest to the biochemist, the knowledge involved and the essential investigative techniques applicable in biochemistry. The students are evaluated by close observation of their performance and acquisition of knowledge and skills.

2. HUMAN MORPHOLOGY:

Elective in Human Morphology. 0.180-360; 1-2 months. The objective of the clerkship is to introduce the student to the disciplines, to research problems and investigative techniques within human morphology. The students can select applied immunology, general surgical anatomy, experimental neuroanatomy, neuromuscular disorders, techniques for study of cells and tissues, cell-cell and cell-microenvironment interactions, vascular biology and cancer metastasis. Evaluation depends on close observation of performance.

Elective in Basic Neuroscience. 0.180-360; 1-2 months. Open to Medicine III and IV students, graduate students in the combined MS-MD program and visiting medical students. The objective of this elective is to involve the students in a basic research project as part of the on-going studies in the neuroscience research laboratories of the Departments of Physiology and Human Morphology. These laboratories serve as a core to the Interfaculty Graduate Neuroscience Program. The current research involves interfaculty collaboration among faculty members in various basic and clinical neuroscience fields as well as biology and electrical engineering. Students present a seminar about their work and evaluation of the elective is based on close observation of performance.

3. MICROBIOLOGY AND IMMUNOLOGY:

Elective in Medical Bacteriology 0.180; 1 month. Open to Medicine III, IV, and visiting medical students. The objective of the elective is to highlight the importance of the laboratory workup in the diagnosis and management of patients with systemic infections. The student will be assigned a patient with bacterial infection for obtaining specimens (or a cultured organism) and for carrying out all the necessary laboratory procedures such as microscopic examination of Gram-stained smears, cultures, isolation and precise species identifications of the pathogen(s), and antimicrobial susceptibility tests. Proper interpretation of the results, with due considerations to the virulence factors and pathogenic

potentials of the recovered organism(s) will be emphasized. The relevance of the laboratory findings to the patient's clinical features, the underlying pathophysiologic abnormalities, and the appropriate line of management will be evaluated. Additionally, epidemiologic issues with particular reference to transmission and prevention will be addressed. A complete report, with pertinent literature citations, will be required.

Elective in Immunology 0.180; 1 month. Open to Medicine III and IV students (local and visiting). The objective of the elective is to expose the student to clinical investigations in immunology in areas such as transplantation, allergy and autoimmune diseases. In cooperation with some of the clinical faculty, a commonly seen immunological disorder is assigned to the student. The clinical aspects of the disease are investigated on the floor under the supervision of the clinician and the laboratory investigations are performed in the Department. A term paper and a presentation in the form of a seminar are required by the student. Evaluation depends on close observation of performance.

4. PHARMACOLOGY:

Elective in Pharmacology. 0.180-360; 1-2 months. The objectives of the elective are to introduce the students to selected areas of pharmacology, some of the research problems in pharmacology and the approach to investigate a problem in pharmacology. Students can select an elective in the areas of cardiovascular, autonomic, renal or liver pharmacology. Students participate in ongoing teaching activities of the Department. Evaluation is based on close observation of performance.

5. PHYSIOLOGY:

Elective in Physiology. 0.180-360; 1-2 months. The objectives of the elective are to introduce the students to selected areas in physiology, some physiological problems under investigation and the experimental approach in physiological research. Students can select such areas as experimental gastroenterology, cell and membrane physiology, experimental neuroscience, physiology of cardiac and vascular smooth muscle. Student can participate in on-going or new research projects in any of these disciplines. Students are expected to attend the educational activities of the Graduate Program. Evaluation is based on close observation of performance.

ELECTIVES IN THE CLINICAL DISCIPLINES

1. ANESTHESIOLOGY:

Elective in the Subspecialties of Anesthesia. 0.180-360; 1-2 months. Students rotate in one or more of the subspecialties of Anesthesia. They attend daily seminars which cover basic, as well as clinical subjects. Didactic assignments include a CPR course. In addition, students are exposed to clinical anesthesia with special emphasis on monitoring of patients, airway management, anesthesia for different subspecialties and post-operative recovery care. At the end of the elective the students must present a seminar on a selected topic. Evaluation is on the basis of close observation of performance.

Elective in Inhalation Therapy 0.180; 1 month. Rotation through the various fields covered by inhalation therapy. Assignments include: Introduction to inhalation therapy, scope of services and procedures, theory and therapeutic goals of new techniques in inhalation therapy and orientation to equipment in use. In addition, the students participate in rounds in all areas where inhalation therapy takes place on all the services and monitor ventilation, lung mechanics, weaning, extubation, pulmonary functions, drug delivery and blood gas analysis. Evaluation depends on close observation of performance.