MEDICINE MED

College of Human Medicine

512. *Infectious Diseases*

Fall. 4(3-3) MPH 511, or approval of department. Interdepartmental with and administered by the Microbiology and Public Health Department.

Infectious diseases of man, including biology of the causative microorganism, epidemiology, pathogenesis, host-parasite relationships, clinical and laboratory diagnosis, and clinical management.

590. *Special Problems in Medicine*

Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 12 credits. Human Medicine students or approval of department.

Each student will work under direction of a staff member on an experimental, theoretical or applied problem.

608. *Senior Medical Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 43 credits. Primary clerkship, third year Human Medicine students.

Based in community hospitals, this clerkship will stress interviewing skills, history, physical examination, along with problem solving and therapy, and care of the whole patient leading to independence in patient management.

609. *Hematology Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. 608.

Development of skills in data collection, problem solving and management related to common hematologic disorders of children and adults.

610. *Oncology Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. 608.

Development of skills in data collection, problem solving and management of the more prevalent cancers in children and adults.

611. *Cardiology Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. H M 602.

A clinical clerkship in which students evaluate in depth patients with cardiac diseases. This includes experiences with special diagnostic procedures including cardiac cuticularization, phonocardiography, echocardiography and electrocardiography.

612. *Nephrology/Urology Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. H M 602.

Integrated concepts of renal physiology and pathophysiology of renal disease. Clinical experience.

613. *Dermatology Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. H M 602.

Office based experience with a dermatologist to learn clinical skills in dermatology and develop observational and diagnostic skills in skin disease.

614. *Medical Chest Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. H M 602.

A clerkship covering four aspects of chest diseases: tuberculosis, diagnosis, pulmonary function, and physiology. The student works with medical residents, utilizing outpatient and hospital facilities.

615. *Gastroenterology Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. H M 602.

Referred patients with gastrointestinal problems are seen as either in- or out-patients. Many long term problems are followed. Patients with psychosocial problems are seen conjointly with Social Service.

616. *Allergy Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. 608 and H M 602 or H D 608.

Office and hospital based experience to learn and develop diagnostic skills in allergy with a review of basic therapeutics as they relate to allergic diseases.

617. *Neurology Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. H M 602.

A combined office and in-patient experience that will provide the student with an opportunity to learn the concepts of evaluation and management of neurological disease.

618. *Infectious Disease Clerkship*

Fall, Winter, Spring, Summer. 1 to 17 credits. May re-enroll for a maximum of 34 credits. H M 602 and MED 608 or H D 608. Interdepartmental with the Microbiology and Public Health Department.

The clerkship emphasizes acquisition in depth of knowledge and skills essential in solution of clinical problems in infectious and immunologic diseases. Integrated basic science input is afforded through relevant seminars.

METALLURGY, MECHANICS AND MATERIALS SCIENCE MMM

College of Engineering

201. *Introduction to Engineering Mechanics*

Winter. 4(4-0) PHY 237. Interdepartmental with the Engineering Department.

Laws of mechanics governing the behavior of rigid and deformable bodies emphasizing how these laws influence engineering design. Extensive use of demonstrations.

205. *Mechanics I*

Fall, Winter, Spring, Summer. 4(4-0) MTH 214 or concurrently.

Vector description of forces and moments. Two and three dimensional equilibrium problems. Statics of frames and machines. Friction. Shear and moments in beams and shafts.

211. *Mechanics of Deformable Solids*

Fall, Winter, Spring, Summer. 4(4-0) 205 or statics; MTH 215.

Deformable solids, stress and strain, principal axes, material behavior (elastic, plastic, viscoelastic, temperature dependent). Boundary value problems, torsion, beams. Instability, columns.

215. *Materials Testing Laboratory*

Fall, Winter, Spring, Summer. 1(0-3)

Physical properties of engineering materials, resistance to primary types of static loading.

230. *Introduction to Materials Science*

Spring. 4(4-0) Sophomores.

A qualitative survey of metals, ceramics, and polymers, and the relationship of electronic, molecular, and crystal structure to the physical, mechanical, thermal, electrical and magnetic properties.

306. *Mechanics II*

(206.) Fall, Winter, Spring, Summer. 4(4-0) 205, MTH 215 or concurrently.

Dynamics of particles and particle systems. Energy and momentum principles. Two and three dimensional rigid body dynamics.

320. *Analytical Mechanics I*

Fall. 3(3-0) MTH 215; PHY 259.

Measures of point motion, indicial notation, vector space and time transformations. Newton's, Lagrange's and Hamilton's equations. Motions of point objects; limiting wave forms.

321. *Analytical Mechanics II*

Winter. 3(3-0) 320.

Schrodinger's equation. Particle motions in various potentials; hydrogen-like atoms and molecules. Continuum models of particle systems; tensor properties, rigid and elastic solids, transfer of heat and electricity, flow relations.

340. *Materials Chemistry I*

Fall. 4(4-0) CEM 153.

An integrated treatment of the physical chemistry of metals and other engineering materials is presented by 340, 341 and 342. Physicochemical systems; thermodynamics and thermochemistry; equilibrium; solutions and phase equilibrium; electrochemistry; corrosion; reaction kinetics in condensed phases; diffusion; surface phenomena.

341. *Materials Chemistry II*

Winter. 4(4-0) 340 or approval of department.

Continuation of 340.

342. *Materials Chemistry III*

Spring. 4(4-0) 341.

Continuation of 340, 341.

360. *Physical Metallurgy I*

Fall. 4(4-0) CEM 153 or approval of department.

Relationship of properties to microstructure as affected by solidification transformations in heterogeneous systems, cold work, recrystallization, and grain growth. Emphasis on the important commercial metals and alloys.

361. *Physical Metallurgy II*

Winter. 4(4-0) 360.

Continuation of 360.

362. *Physical Metallurgy III*

Spring. 4(4-0)

Continuation of 360, 361.

370. *Metals and Alloys I*

Fall, Winter. 4(3-3)

Principles of physical metallurgy applied to engineering metals and alloys.