MEDICAL TECHNOLOGY

Courses are subject to revision and final approval.

470*. Advanced Clinical Microbiology
Fall, Spring, Summer. 1.(1)
C: MT 477 R: Open only to seniors in Clinical Laboratory Science. Approval of Medical Technology Program.
Theory of clinical microbiology. Integration of cognitive material with laboratory results.
QA: MT 484

495*. Directed Study
Fall, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 6 credits.
R: Open only to Clinical Laboratory Science and Medical Technology majors.
Faculty directed study including assigned readings, reviews of appropriate scientific periodicals, and research laboratory experience.
QA: MT 495

801*. Medical Technology Seminar
Spring. 1(1-0)
R: Open only to graduate students in Clinical Laboratory Science
Current research topics in the clinical laboratory sciences.
QA: MT 800

810*. Research Planning in the Clinical Laboratory Sciences
Fall of odd-numbered years. 2(2-0)
R: Open only to graduate students in Clinical Laboratory Science
Directed reading and discussions related to research methodology, proposal presentations both written and oral, and research funding.
QA: MT 810

812*. Advanced Clinical Chemistry
Spring of even-numbered years. 2(2-0)
Interdepartmental with the Department(s) of Pathology.
P: BCH 462, MT 414, MT 416 R: 6
Biochemical basis of selected pathologic conditions including inborn errors of metabolism, endocrine and other genetic disorders. Emphasis on current diagnostic techniques.

820*. Advanced Human Hematology
Fall of even-numbered years. 2(2-0)
Interdepartmental with the Department(s) of Pathology.
P: BCH 462, MT 422 R: 6
Selected topics in hematology including the pathogenesis, mechanism and morphological picture of hematological diseases in humans. Emphasis on laboratory tests and interpretation of test results.
QP: MT 420 QA: MT 820

830*. Concepts in Molecular Biology
Spring. 2(2-0) Interdepartmental with the Department(s) of Pathology.
P: Current course in Biochemistry C: Current course in Biochemistry R: 6
Informal student of techniques and theories of molecular biology, nucleic acid synthesis & isolation, enzymatic digestion & modification, electrophoresis, hybridization, amplification, library construction & cloning; covered in lectures & student forum

840*. Advanced Hemostasis
Fall of odd-numbered years. 2(2-0)
Interdepartmental with the Department(s) of Pathology.
P: BCH 462, MT 422 R: 6
Physiology, pathophysiology and laboratory evaluation of hemostatic disorders.
QP: MT 440 QA: MT 840

860*. Clinical Laboratory Diagnosis of Infectious Diseases
Spring of even-numbered years. 2(2-0)
Interdepartmental with the Department(s) of Pathology.
P: MPH 451, MPhi 463, MPhi 464 R: 6
Current methods in laboratory investigation of infectious disease in humans. Emphasis on differential diagnosis and correlation of microbiological results with serology, hematology and clinical chemistry.
QP: MPhi 301 MPhi 302 MPhi 406

890*. Selected Topics in Clinical Laboratory Sciences
Fall, Spring, Summer. 1 to 6 credits. R: Open only to graduate students in Clinical Laboratory Science
Recent advances in laboratory medicine. Special projects for students in non-thesis research, Plan B Masters.

899*. Master's Thesis Research
Fall, Spring, Summer. 1 to 10 credits. May reenroll for a maximum of 24 credits.
R: Open only to graduate students in Clinical Laboratory Science
Master's thesis research for Plan A Master's degree.
QA: MT 899

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512*. Infectious Diseases
Spring. 4(0) Interdepartmental with the Department(s) of Microbiology and Public Health.
P: MPhi 511 or approval of department R: Grad Professional Students in College of Human Medicine
Infectious diseases of humans, including biology of the causative microorganisms, epidemiology, pathogenesis, host-parasite relationships, clinical and laboratory diagnosis, and clinical management.

590*. Special Problems in Medicine
Fall, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 12 credits.
P: CHM Students or approval of department R: Grad Professional Students in College of Human Medicine
Each student will work under direction of a staff member on an experimental, theoretical, or applied problem

607*. Ambulatory Care Clerkship
Fall, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 9 credits. Interdepartmental with the Department(s) of Family Practice, Pediatrics and Human Development.
P: FMP 602 R: Grad Professional Students in the College of Human Medicine
Outpatient experience, lasting an equivalent of 34 half-days and extending over a minimum of 26 weeks. Continuous and comprehensive patient care under supervision of appropriate physicians.

609*. Internal Medicine Clerkship
Fall, Spring, Summer. 2 to 15 credits. May reenroll for a maximum of 42 credits.
P: FMP 609 R: Grad Professional Students in the College of Human Medicine
Based in community hospitals, this clerkship will stress interviewing, laboratory, 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, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MED 608 R: Grad professional students in College of Human Medicine
Development of skills in data collection, problem solving, and management related to common hematologic disorders of children and adults.

610*. Oncology Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MED 608 R: Grad Professional Students in College of Human Medicine
Development of skills in data collection, problem solving and management of the more prevalent cancers in children and adults.

611*. Cardiology Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MED 608 R: Grad Professional Students in College of Human Medicine
A clinical clerkship in which students evaluate in depth patients with cardiac diseases. This includes experiences with special diagnostic procedures including cardiac catheterization, phonocardiography, echocardiography, and electrocardiography.

612*. Nephrology Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MED 608 R: Grad Professional Students in the College of Human Medicine

613*. Dermatology Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MED 608 R: Grad professional students in College of Human Medicine
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, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MED 608 R: Grad Professional Students in College of Human Medicine
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, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MED 608 R: Grad Professional Students in College of Human Medicine
Referred patients with gastrointestinal problems are seen as either inpatients. Many long term problems are followed. Patients with psychosocial problems are seen conjointly with Social Service
618. Allergy Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MED 608 R: Grad Professional students in College of Human Medicine
Office and hospital based experience to learn and develop diagnostic skills in allergy with a review of basic therapeutics as they relate to allergic disease

617. Neurology Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MEd 608 R: Grad professional students in College of Human Medicine
A combined office and inpatient experience that will provide the student with an opportunity to learn the concepts of evaluation and management of neurological disease

618. Infectious Diseases Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MEd 608 R: Grad professional students in College of Human Medicine
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

620. Endocrinology and Metabolism Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MEd 608 R: Grad professional students in College of Human Medicine
Clinical and/or clinical research clerkship to allow the student to work closely with patients having endocrine diseases, electrolyte abnormalities, endocrine hypertension or diabetes mellitus

624. Physical Medicine & Rehabilitation Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MEd 608 R: Grad professional students in College of Human Medicine
Experience in prescription writing for physical medicine procedures, occupational therapy and rehabilitation skills

627. Rheumatology Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MEd 608 R: Grad professional students in College of Human Medicine
Combined office and hospital consultative clerkship which develops diagnostic skills in areas of rheumatic diseases

628. Advanced Internal Medicine
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MEd 608 R: Grad professional students in College of Human Medicine
Clinical experiences which refine diagnostic and management skills in general internal medicine

630. Emergency Medicine Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MEd 608 R: Grad professional students in College of Human Medicine
Pathophysiology and other basic concepts will be used to explain the development of emergent conditions. Clinical diagnosis and treatment of emergencies seen in community emergency department will be discussed

632. Occupational Medicine Clerkship
Fall, Spring, Summer. 2 to 12 credits. May reenroll for a maximum of 12 credits.
P: MEd 608 R: Grad professional students in College of Human Medicine
Overview of health problems of chemicals and mineral dusts. Occupational history taking. Occupational differential diagnosis of common conditions seen in primary care

METALLURGY, MECHANICS, AND MATERIALS SCIENCE

160. Engineering Communications
Fall, Spring. 3(3-0)
P: CEM 116 or concurrently.
Computer-aided design and drafting, Frehand sketching, Two and three dimensional visualization, Preparation of spread sheets and technical reports

205. Statics
Fall, Spring. 3(3-0)
P: MTH 132
Vector description of forces and moments. Two and three dimensional equilibrium of particles and rigid bodies. Analysis of trusses, frames and machines. Coupled vibration
QP: MTH 215 QA: MMM 205

211. Mechanics of Deformable Solids
Fall, Spring. 3(3-0)
P: MMM 205, MTH 133 or concurrently.
QP: MMM 205 MTH 310MM 215 QA: MMM 211 MMM 215

250. Materials Science and Engineering
Fall, Spring. 3(3-2)
P: CEM 141, MTH 133
Structure of metals, ceramics and polymers. Phase diagrams, thermomechanical treatments, physical and mechanical properties, diffusion, microstructure studies, environmental effects.
QP: CEM 141 MTH 113 QA: MMM 250

306. Dynamics
Fall, Spring. 3(3-0)
P: MMM 206, MTH 235. R: Open only to College of Engineering students
QP: MMM 205 MTH 310 QA: MMM 306

351. Thermodynamics of Materials
Fall. 3(3-0)
P: CEM 152, MTH 234. R: Open only to Materials Science and Engineering majors
Not open to students with CEM 211 or MTH 301
State variables, laws of thermodynamics, phase and chemical equilibria. Gas and condensed phase relationships, solutions, interfaces, point defects, electrochemistry.
QP: CEM 152 MTH 215 QA: MMM 330

352. Diffusion in Solids
Spring. 3(3-0)
P: MMM 350, MMM 351. R: Open only to Materials Science and Engineering majors
QP: MMM 330 QA: MMM 452

355. Mechanical Behavior of Materials
Fall. 3(3-0)
P: MMM 211, MMM 250, C; MMM 375 R: Open only to Materials Science and Engineering majors
Stress and strain, crystal elasticity, anelasticity and viscoelasticity. Mechanical properties in tension and torsion. Crystallographic aspects of plasticity.
QP: MMM 211 MMM 250 QA: MMM 350 MMM 351

356. Deformation Mechanisms
Spring. 3(3-0)
P: MMM 355. R: Open only to Materials Science and Engineering majors
QP: MMM 350 MMM 351 QA: MMM 456

365. Physical Metallurgy I
Fall. 3(3-0)
P: MMM 350, MMM 351 or concurrently.
C: MMM 375 R: Open only to Materials Science and Engineering majors
QP: MMM 350 MTH 380 QA: MMM 380 MMM 361

366. Physical Metallurgy II
Spring. 3(3-0)
P: MMM 355. C: MMM 375 R: Open only to Materials Science and Engineering majors
QP: MMM 360 MTH 330 QA: MMM 453 MMM 361

375. Materials Science Laboratory I
Fall. 1(0-0)
P: MMM 355 C: MMM 385 R: Open only to Materials Science and Engineering majors
QP: MMM 350 MTH 360 QA: MMM 352 MMM 362

376. Materials Science Laboratory II
Spring. 1(0-0)
P: MMM 355 or concurrently. R: Open only to Materials Science and Engineering majors
QP: MMM 350 MTH 360 QA: MMM 352 MMM 362

380. Polymeric Materials
Spring. 3(3-0)
P: CEM 152. R: Open only to Materials Science and Engineering majors
QP: CEM 152