Molecular Diagnostic Experience in Infectious Disease
2 credits. P:M: (MT 438 or concurrently) R: Open only to students in the Diagnostic Molecular Science major. C: MT 437 concurrently. Clinical experience in molecular diagnostic laboratories with applications to infectious disease diagnostics.

Molecular Diagnostic Experience in Inherited and Predictive Genetics
Spring. 2 credits. P:M: (MT 438 or concurrently) R: Open only to students in the Diagnostic Molecular Science major. C: MT 482 concurrently. Clinical experience in molecular diagnostic laboratories with applications in inherited and predictive genetics.

Molecular Diagnostic Experience in Genotyping and Individual Identification
Spring. 2 credits. P:M: (MT 437 or concurrently and MT 438) R: Open only to students in the Diagnostic Molecular Science major. C: MT 482 concurrently. Clinical experience in molecular diagnostic laboratories with applications to genotyping and identification of individuals.

Directed Study
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to students in the Clinical Laboratory Sciences or Medical Technology major or LBS Medical Technology coordinate major. Faculty directed study including assigned readings, reviews of appropriate scientific periodicals, research and laboratory experience.

Integrative Correlations in Clinical Laboratory Science I
Fall, Spring. 1(2-0) P:M: (MT 213) R: Open only to juniors or seniors in the Medical Technology or Clinical Laboratory Science and Lyman Briggs coordinate majors. Application of the principles and concepts of clinical laboratory science in a problem-based learning format. Emphasis on the importance of laboratory tests, social-economic impact of laboratory tests and their regulation.

Integrative Correlations in Clinical Laboratory Science II
Fall, Spring. 1(2-0) P:M: (MT 496) R: Open only to juniors or seniors in the Medical Technology or Clinical Laboratory Science and Lyman Briggs coordinate majors. Continuation of MT 496.

Integrative Correlations in Clinical Laboratory Science III
Spring. 2(1-2) P:M: (MMG 463 or concurrently and MMG 464 or concurrently and MT 496) R: Open only to students in the Clinical Laboratory Sciences major. SA: MT 454 Continuation of MT 496 with emphasis on cases of medical microbiology, hematology, and clinical chemistry.

Medical Technology Seminar
Spring. 1(1-0) A student may earn a maximum of 2 credits in all enrollments for this course. R: Open only to graduate students in Clinical Laboratory Sciences. Current research topics in clinical laboratory sciences.

Advanced Clinical Chemistry
Spring of even years. 2(2-0) Interdepartmental with Pathology. RB: (BMB 462 and MT 414 and MT 416) Biochemical basis of selected pathologic conditions including inborn errors of metabolism, endocrine and other genetic disorders. Emphasis on current diagnostic techniques.

Advanced Human Hematology
Spring of odd years. 2(2-0) Interdepartmental with Pathology. RB: (MT 424) Pathogenesis, mechanisms, and morphological pictures. Laboratory tests and interpretation of results.

Concepts in Molecular Biology
Fall, Spring. 2(2-0) R: Open only to students in the Diagnostic Molecular Science major. C: MT 482 concurrently. Techniques and theories of molecular biology, nucleic acid synthesis and isolation, enzymatic digestion and modification, electrophoresis, hybridization, amplification, library construction, and cloning.

Clinical Application of Molecular Biology
Spring, Summer. 2(2-0) P:M: (MT 830) RB: Basic biochemistry, medical or research laboratory experience. Molecular diagnostic principles. Diagnostic outcomes in traditional and nontraditional laboratory disciplines.

Molecular Pathology Laboratory
Summer. 2(0-4) P:M: (MT 831 or concurrently) Equipment operation, DNA extraction and measurement, electrophoresis, hybridization and transfer, amplification and detection including SSOP, ARMS, RFLP and SCP as well as automated sequencing will be covered with specific emphasis on clinical applications.

Managing Biomedical Laboratory Operations
Fall, Spring. 2(2-0) R: Open only to Biomedical Laboratory Operations majors or approval of department. Integration of the roles of legislative, regulatory, technological and economic factors that influence the practice and management of biomedical laboratory operations.

Topics in Biomedical Laboratory Operations
Spring. 1(1-0) P:M: (MT 842) R: Open only to Biomedical Laboratory Operations majors or approval of department. Current issues relevant to biomedical laboratory operations from an interdisciplinary perspective with an emphasis on efficient laboratory operations.

Decision Processes for Biomedical Laboratory Operations
Fall, 2(2-0) P:M: (MT 842) R: Open only to Biomedical Laboratory Operations majors or approval of department. Integrative case studies presented in a problem-based learning format. Strategies for decision making in the operations of a biomedical laboratory. Cases integrate scientific principles, management principles and regulatory factors.

Concepts in Immunodiagnosics
Fall, Spring. 2(2-0) R: An undergraduate course in biochemistry or cell biology. Immunology principles and theory applied to diagnostic evaluation of the host immune response during health and disease.

Clinical Application of Immunodiagnostic Principles
Spring, Summer. 2(2-0) P:M: (MT 850) Immunodiagnostic theories and principles applied to clinical assay development and method evaluation.

Immunodiagnostic Procedures Laboratory
Summer. 2(2-0) Performance of immunopurifications, inviro diagnostic assays and basic flow cytometry. Data analysis and quality control evaluation.

Clinical Laboratory Diagnosis of Infectious Diseases
Fall of odd years. 2(2-0) Interdepartmental with Pathology. RB: (MMG 451 and MMG 464) Laboratory techniques for diagnosing infectious diseases in humans. Emphasis on differential diagnosis and correlation of microbiological results with serology, hematology, and clinical chemistry.

Selected Problems in Clinical Laboratory Science
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to graduate students in Clinical Laboratory Sciences. Non-thesis research for Plan B master's students.

Projects in Biomedical Laboratory Operations
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to Biomedical Laboratory Operations majors or approval of department. Students complete a significant on-site project in cooperation with an industrial/clinical partner.

Master's Thesis Research
Fall, Spring, Summer. 1 to 10 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Open only to graduate students in Clinical Laboratory Sciences. Master's thesis research.

MED—Medicine

Department of Medicine
College of Human Medicine

Internal Medicine Clerkship
Fall, Spring. 2 to 18 credits. A student may earn a maximum of 42 credits in all enrollments for this course. RB: (FMP 602) R: Open only to graduate-professional students in College of Human Medicine. Students complete a significant on-site project in cooperation with an industrial/clinical partner.

Hematology Clerkship
Fall, Spring. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine. 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. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Data collection, problem solving and management of prevalent cancers in children and adults.

611 Cardiology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Evaluation of patients with cardiac diseases. Special diagnostic procedures including cardiac catheterization, phonocardiography, echocardiography, and electrocardiography.

612 Nephrology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Integrative concepts of renal physiology and pathophysiology of renal disease. Clinical experience.

613 Dermatology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Experience in a dermatologist’s office to develop clinical, observational, and diagnostic skills in dermatology.

614 Pulmonary Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Pulmonary physiology, Evaluation of pulmonary function, Diagnosis and treatment of common pulmonary diseases.

615 Gastroenterology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Experience with gastrointestinal problems in ambulatory and hospital settings. Emphasis on continuity and comprehensive care.

616 Allergy Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Ambulatory and hospital based experience to develop diagnostic skills in allergy. Review of basic therapeutics related to allergic diseases.

618 Infectious Diseases Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Clinical problems in infectious and immunologic diseases. Integrated basic science input is provided in seminars.

619 Ambulatory Care Clerkship
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 15 credits in all enrollments for this course. Interdepartmental with Family Practice: Pediatrics. Administered by Department of Family Practice.
RB: (FMP 602) R: Open only to graduate-professional students in College of Human Medicine.
Continuous and comprehensive patient care under supervision of appropriate physicians.

620 Endocrinology and Metabolism Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Clinical and/or clinical-research clerkship: endocrine diseases, electrolyte abnormalities, endocrine hyperfunction, or diabetes mellitus.

621 Advanced Medicine
Fall, Spring, Summer. 6 to 12 credits. Fall: Lansing-Saginaw-Flint-Kalamazoo-UP; Spring: Lansing-GR-Saginaw-Flint-Kalamazoo-UP.
A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Developing regimens for physical medicine procedures, occupational therapy and rehabilitation skills.

626 Physical Medicine and Rehabilitation Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Hospital-based clinical experience in diagnosing and managing acutely ill patients with non-surgical problems.

627 Rheumatology Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Combined ambulatory and hospital consultative clerkship for diagnostic skills in areas of rheumatic diseases.

628 Advanced Internal Medicine
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Clinical experiences to refine diagnostic and management skills in general internal medicine.

630 Emergency Medicine Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Clinical diagnosis and treatment of emergencies seen in community emergency departments.

632 Occupational Medicine Clerkship
Fall, Spring, Summer. 2 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: (MED 608) R: Open only to graduate-professional students in College of Human Medicine.
Health problems of chemical and mineral dust, radiation, and repetitive trauma.

633 Extended Clinical Experience
Fall, Spring, Summer. 6(6-0) Fall: All six(6) campuses. Spring: All six(6) campuses. Summer: All six(6) campuses. P.M: (MED 608)
Based in community hospitals and ambulatory sites, this is a 4 week clinical experience emphasizing interviewing skills, history, physical exam, problem solving and therapy.

635 Core Competencies I
Fall, Spring, Summer. 2(2-0) Fall: Flint-GR-Saginaw-Lansing-Kalamazoo-UP; Spring: same as above. Summer: save as above. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Human Medicine; Family Practice; Pediatrics and Human Development. Administered by College of Human Medicine. R: Open only to graduate-professional students in College of Human Medicine.
Core knowledge and skills from an interdisciplinary perspective.

636 Core Competencies II
Fall, Spring, Summer. 2(2-0) Fall: same as below. Spring: Flint-Saginaw-GR-Lansing-Kalamazoo-UP; same as above. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Human Medicine; Family Practice. Administered by College of Human Medicine. R: Open only to graduate-professional students in College of Human Medicine.
Core knowledge and skills from an interdisciplinary perspective.

637 Core Competencies III
Fall, Spring, Summer. 2(2-0) Fall: same as below. Spring: Flint-Saginaw-GR-Lansing-Kalamazoo-UP. Summer: Flint-Saginaw-GR-Lansing-Kalamazoo-UP. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Human Medicine; Family Practice; Obstetrics, Gynecology and Reproductive Biology; Pediatrics and Human Development; Surgery. Administered by College of Human Medicine. R: Open only to graduate-professional students in College of Human Medicine.
Core knowledge and skills from an interdisciplinary perspective.

820 Evidence-Based Medicine
Spring of even years. 3(3-0) Interdepartmental with Epidemiology. Administered by Department of Epidemiology. P.M: (EPI 810 or concurrently and STT 421 or concurrently)
Methodology of clinical epidemiology and health services outcomes research. Linkage of epidemiology with daily clinical problems.