MEDICINE (MEDICINE)

MEDICINE/NURSING/PHM PRAC/SOC WORK 467 – INTERPROFESSIONAL COLLABORATIVE PRACTICE IN HIV CARE
1 credit.

Gain foundational knowledge and skills in interprofessional collaborative practice and HIV care. Explore the roles of medicine, nursing, pharmacy, and social work in the HIV care continuum. Discuss quality team-based care as a member of an interprofessional student team.
Requisites: Declared in Nursing BSN (Traditional, Collaborative, Accelerated), Social Work BSW, Medicine MD, Pharmacy PharmD, or Social Work MSW.
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Describe the history and epidemiology of the HIV epidemic.
Audience: Both Grad & Undergrad

2. Define Interprofessional Collaborative Practice (ICP) and describe the characteristics of effective ICP.
Audience: Both Grad & Undergrad

3. Describe the natural history of HIV disease with and without antiretroviral therapy (ART).
Audience: Both Grad & Undergrad

4. Discuss US Dept of Health and Human Services guidelines and recommendations for prevention, screening, diagnosis, treatment, and management of HIV infection and HIV-related diseases in the United States.
Audience: Both Grad & Undergrad

5. Describe the HIV care continuum including testing, entry and retention in care, and treatment including associated stigma and discrimination as barriers.
Audience: Both Grad & Undergrad

6. Discuss dimensions of wellness (emotional, environmental, financial, intellectual, occupational, physical, social and spiritual).
Audience: Both Grad & Undergrad

7. Identify potential co-morbid conditions in the HIV infected population.
Audience: Both Grad & Undergrad

8. Discuss stigma and discrimination as barriers to prevention, care, and treatment.
Audience: Both Grad & Undergrad

9. Discuss the history of the Ryan White Care Act and other federal and state policies and their current importance in HIV prevention and HIV care.
Audience: Both Grad & Undergrad

10. Identify HIV care needs and common health issues among high risk and vulnerable populations.
Audience: Both Grad & Undergrad

11. Develop a plan of care for an HIV positive individual as part of an interprofessional team.
Audience: Both Grad & Undergrad

12. Develop skills working with mixed teams including undergraduate

MEDICINE 699 – INDEPENDENT STUDY
0-5 credits.

Self-directed work under the supervision and guidance of an Instructor and often in conjunction with a day-to-day mentor that is a graduate student, postdoc researcher or directly with the faculty. Students normally participate in aspects of ongoing research projects.
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Apply concepts learned in coursework to real life situations
Audience: Undergraduate

2. Read and effectively search scientific literature
Audience: Undergraduate

3. Develop critical, analytical, and independent thinking skills
Audience: Undergraduate

MEDICINE 700 – INTRODUCTION TO CLINICAL AND HEALTH INFORMATICS
3 credits.

Overview of the field of applied clinical and health informatics will provide foundational knowledge of the core concepts of clinical and health informatics and how those principles are used to improve health and health care delivery.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Learning Outcomes: 1. Describe the foundational principles and challenges of clinical and health informatics
Audience: Graduate

2. Summarize the use of health records in health care delivery, and practical challenges of their use
Audience: Graduate

3. Illustrate focus areas in informatics, such as public health, population medicine, and consumer informatics
Audience: Graduate

4. Identify emerging technologies in clinical and health informatics
Audience: Graduate

5. Apply health equity principles in evaluation of clinical and health information system and their delivery
Audience: Graduate

MEDICINE/CRB 701 – CELL SIGNALING AND HUMAN DISEASE
1 credit.

Landmark discoveries, as well as current knowledge and controversies in human health, with an emphasis on cancer biology.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Critically evaluate the primary literature underlying medical knowledge.
Audience: Graduate

2. Practice presentation and leading discussion of primary literature.
Audience: Graduate

3. Read the basic evidence underlying landmark discoveries and controversies in cancer biology.
Audience: Graduate

4. Understand how grant proposals are written and evaluated.
Audience: Graduate

MEDICINE 702 – CLINICAL AND HEALTH INFORMATION SYSTEMS
3 credits.

Clinical and health information and communication systems form the backbone of our health care delivery system and public health infrastructure. Overview of the core systems used in health care delivery to explore the processes used to analyze, design, implement and evaluate these systems.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Learning Outcomes: 1. Describe the role of information systems in health and health care delivery
Audience: Graduate

2. Summarize the various needs that information systems fill in health care delivery, including clinical, revenue cycle, and population health uses.
Audience: Graduate

3. Identify the steps for analysis, design, implementation, and evaluation of information and communication systems.
Audience: Graduate

4. Understand barriers to effective utilization of information and communication systems.
Audience: Graduate

5. Illustrate key features of clinical decision support and effective clinical documentation.
Audience: Graduate

MEDICINE/NURSING/POP HLTH 705 – SEMINAR IN INTERDISCIPLINARY CLINICAL RESEARCH EVIDENCE
2-3 credits.

Exploration of interdisciplinary clinical research questions including strategies for assessing the evidence and methodology for conducting various types of literature reviews. Emphasizes an interdisciplinary perspective.
Requisites: SOC/POP HLTH 797 and STAT/B M I 542
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2024
Learning Outcomes: 1. Develop an answerable clinical research question.
Audience: Graduate

2. Search relevant scientific literature using several electronic databases and other sources of evidence (published and unpublished) across disciplines.
Audience: Graduate

3. Manage sources of evidence with reference management software.
Audience: Graduate

4. Critically review published clinical research on a chosen topic.
Audience: Graduate

5. Develop a search strategy and conduct a systematic review or other form of evidence review.
Audience: Graduate

6. Present a planned or actual evidence review to interdisciplinary peers.
Audience: Graduate

7. Describe the implications for translation of the proposed evidence review from an interdisciplinary perspective.
Audience: Graduate

MEDICINE 710 – IMPROVISATIONAL THEATRE FOR SCIENTISTS
1 credit.

Improvisers are experts in storytelling, spontaneity, and using observation skills to adjust to their audiences and team members accordingly. Among other skills, this 5-week course will teach you how to (1) effectively communicate your work to different audiences, (2) adjust your behavior in real time to respond to audience feedback, and (3) manipulate your vocal and physical presence to communicate more effectively.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Effectively communicate your work to different audiences
Audience: Graduate

2. Adjust your behavior in real time to respond to audience feedback
Audience: Graduate

3. Manipulate your vocal and physical presence to communicate more effectively
Audience: Graduate

MEDICINE 720 – ENDOCRINOLOGY AND METABOLISM
3 credits.

Provides a broad grounding in endocrinology and metabolism with an emphasis on human and human-related disorders wherever possible. Explores further the physiological and molecular mechanisms by which the endocrine regulation of metabolism acts to preserve mammalian health, and how dysfunction in these mechanisms leads to disease, with an emphasis on diabetes, obesity and hypertension.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Develop knowledge of how endocrinology and metabolism act to promote health at the physiological and molecular level, with an emphasis on humans wherever possible.
Audience: Graduate

2. Learn common mechanisms by which endocrine and metabolic dysfunction contribute to the pathophysiology of disease, including diabetes, obesity, and hypertension.
Audience: Graduate

3. Develop knowledge of cutting-edge research findings and common approaches to developing new treatments for metabolic disease and endocrine disorders.
Audience: Graduate

4. Evaluate primary research articles and demonstrate critical reasoning with regards to methods and conclusions.
Audience: Graduate

5. Demonstrate critical thinking with regards to course material through in-class interactive discussion with peers and faculty.
Audience: Graduate

6. Integrate instruction material and personally-researched scientific texts to formulate individual thoughts on topics not directly covered in lecture.
Audience: Graduate

MEDICINE 750 – CAPSTONE PROJECT IN CLINICAL AND HEALTH INFORMATICS
3 credits.

Collective application of all other Clinical and Health Informatics graduate degree coursework. Addresses all ten American Medical Informatics Association (AMIA) competencies through a summative project to demonstrate the knowledge, skills, and attributes necessary for successfully working in health care informatics.
Requisites: Declared in Clinical and Health Informatics MS program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Effectively analyze, design, implement and evaluate an information or communication solution for a health care organization.
Audience: Graduate

2. Effectively formulate and communicate a project plan.
Audience: Graduate

3. Understand how the stakeholders, processes and culture of an organization impacts an informatics project.
Audience: Graduate

4. Apply leadership and organizational theories to an informatics project.
Audience: Graduate

5. Understand and navigate the unique aspects of a clinical/health informatics project (ex. security, privacy).
Audience: Graduate

6. Evaluate the success of an informatics project using an analytical approach to outcomes data.
Audience: Graduate

MEDICINE 809 – INTERSECTION OF HEALTH CARE AND INCARCERATION
2 credits.

Introduction to mass incarceration, health care systems in carceral settings, incarceration-related health disparities, race-related health disparities, social determinants of health, conducting research within carceral facilities, career pathways in correctional health.
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Describe how the criminal legal system in Wisconsin and the United States impacts the health of incarcerated people, including mental health and community health concerns.
Audience: Graduate

2. Identify individual and community health challenges for a person once they are released from incarceration, and propose ways to mitigate these challenges.
Audience: Graduate

3. Interpret clinical guidelines for ethical care of incarcerated individuals
Audience: Graduate

4. Recognize ethical conflicts that exist in delivering care in carceral facilities, as well as issues surrounding access or lack of access to relevant research.
Audience: Graduate

5. Develop concepts/best practices for system-wide improvements in the health care of incarcerated and formerly incarcerated individuals.
Audience: Graduate

MEDICINE 880 – THE BODY ELECTRIC: INTERSECTION OF CELLULAR ELECTROPHYSIOLOGY WITH CLINICAL ELECTROCARDIOGRAPHY
2 credits.

Mapping of cellular and conduction perturbations to observed changes on the surface ECG recording for inherited arrhythmia syndromes (e.g., long QT syndrome, Brugada syndrome), drug toxicities (Class IC and III antiarrhythmics, digoxin excess), cardiac arrest, electrolyte disturbances, and metabolic disturbances; Selection of appropriate therapies, including antiarrhythmics and device therapies, and how they affect cardiac electrophysiology and the clinical ECG.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Interpret and integrate ECG manifestations of metabolic causes of cardiac arrest and the non-shockable rhythms.
Audience: Graduate

2. Summarize the fundamental mechanisms of cardiac electrophysiology.
Audience: Graduate

3. Relate electrical signaling and neurohormonal regulation to cardiac function.
Audience: Graduate

4. Interpret and integrate ECG manifestations of basic mechanisms of cardiac arrhythmias.
Audience: Graduate

5. Interpret and integrate ECG manifestations of inherited arrhythmia syndromes.
Audience: Graduate

6. Compare and contrast basic mechanisms and ECG manifestations of inherited arrhythmia syndromes.
Audience: Graduate

7. Correlate the mechanisms of antiarrhythmic drugs with their effect on cardiac action potential.
Audience: Graduate

8. Interpret and integrate ECG manifestations of antiarrhythmic toxicity.
Audience: Graduate

9. Articulate the basic underpinnings and indications for catheter ablation.

Audience: Graduate

10. Articulate the basic underpinnings, indications for, and ECG manifestations of cardiac pacemakers and implantable cardioverter-defibrillators.
Audience: Graduate

11. Evaluate arrhythmias and therapeutic modalities of patients in the presenting to electrophysiology clinic.
Audience: Graduate

12. Research how arrhythmias are studied in the basic science setting.
Audience: Graduate

13. Categorize antiarrhythmic medications according to their appropriate use.
Audience: Graduate

MEDICINE 902 – CLINICAL & TRANSLATIONAL RESEARCH ELECTIVE
2-6 credits.

Unique opportunity for fourth year medical students in the PhD program to integrate clinical work with a clinical or translational research project, thus providing early exposure and hands-on experience with clinically-oriented research and the integrated career of a physician-scientist in the students' chosen clinical specialty. Course components construct the experience of six weeks in the life of a practicing physician-scientist, balancing clinical practice, research on a project relevant to community public health, study design, manuscript preparation, regulatory meetings, and public outreach - all under the guidance of a dedicated physician-scientist mentor. Intended for MSTP students in Phase 3 of ForWard curriculum
Requisites: Declared in Doctor of Medicine program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, for 2 number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Demonstrate knowledge of clinical research design
Audience: Graduate

2. Conduct clinical research project
Audience: Graduate

3. Demonstrate ability to integrate clinical medicine and research investigations
Audience: Graduate

4. Apply and adapt knowledge of the research regulatory process
Audience: Graduate

5. Describe the public health needs of the community and state of Wisconsin as they relate to the clinical research project and determine the impact of the research project on those concerns
Audience: Graduate

6. Assess public opinion (community members and constituents) of clinical research
Audience: Graduate

7. Exhibit skills in the analysis of clinical research data
Audience: Graduate

8. Communicate the outcomes and impact of a clinical research project to general public
Audience: Graduate

9. Communicate the results of a clinical research project to an academic audience
Audience: Graduate

MEDICINE 903 – MSTP LONGITUDINAL CLINICAL CLERKSHIP IN GRADUATE SCHOOL
1-12 credits.

This is a required clinical elective for MSTP students during their graduate years. During PhD training, all students are required to participate in a scholarly continuity clinical experience in their fields of interest. Each student will complete and certify 10 half-day sessions or equivalent with an academic clinical mentor and present in the MSTP seminar.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2024
Learning Outcomes: 1. Take effective patient history
Audience: Graduate

2. Perform appropriate physical exam
Audience: Graduate

3. Synthesize acquired basic science knowledge and clinical skills to create differential diagnoses
Audience: Graduate

4. Generate and manage treatment plan
Audience: Graduate

5. Exhibit knowledge of disease and pathophysiology
Audience: Graduate

6. Demonstrate ability to balance medicine and research efforts
Audience: Graduate

7. Apply evidence-based medicine to clinical practice
Audience: Graduate

8. Analyze clinical/translational research literature in field of interest
Audience: Graduate

MEDICINE 905 – THE APPLIED PHYSIOLOGY OF MECHANICAL VENTILATION
2 credits.

Focus on the intersection between the physiology of the respiratory system and the mechanical engineering of ventilators, with particular attention to patient-ventilator interactions. Investigate the important physiologic trade-offs inherent in various strategies of mechanical ventilation. Apply these principles to patients with and without underlying pulmonary disease. Finally, evaluate a landmark study on tidal volume in ARDS, with particular attention to the scientific and ethical controversies that surround the trial. This course involves a modicum of physics and math.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Demonstrate knowledge of respiratory system physiology and mechanics
Audience: Graduate

2. Demonstrate familiarity with how ventilators have been engineered
Audience: Graduate

3. Compare and contrast how patients and ventilators interact with each other in a variety of modes of mechanical ventilation and in a variety of disease states
Audience: Graduate

4. Apply understanding of mechanical ventilation to appraise lessons from ARDSNet trial
Audience: Graduate

5. Describe ethical and scientific challenges in establishing an appropriate control group for a clinical trial
Audience: Graduate

MEDICINE 906 – ACE ACUTE CARE FOR ELDERLY CONSULTATION SERVICES ELECTIVE
2 credits.

Working directly as part of the inpatient consult team at the UW Hospital, an opportunity to practice and improve inpatient care skills for hospitalized elders. Learn to use basic assessment tools to diagnose and care for patients with common geriatric syndromes, such as delirium, cognitive impairment, depression, and falls. Learn to use prescription techniques better suitable for elderly patients, expand understanding of how medical decision-making capacity is assessed, and adopt multi-disciplinary strategies to manage patients' long-term care goals.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Use basic capacity evaluation and diagnostic tools to assess elders for common geriatric syndromes.
Audience: Graduate

2. Practice inpatient management of these syndromes, and strategies for improving care transitions.
Audience: Graduate

3. Recognize and address polypharmacy and learn prescribing techniques that are appropriate for the patient's age.
Audience: Graduate

4. Develop basic strategies for holding goals of care conversations, and how to structure a multi-disciplinary plan of care.
Audience: Graduate

5. Become familiar with how medical decision-making capacity is assessed and the diagnostic tools used to determine capacity.
Audience: Graduate

6. Develop skills to improve the functional trajectory of the older patient through a collaborative, interdisciplinary approach.
Audience: Graduate

MEDICINE 907 – INPATIENT ENDOCRINOLOGY/DIABETES CONSULTS ELECTIVE
2 credits.

Involves patient care in the hospital, working in the role of a consultant. Improve knowledge and inpatient care management skills of common endocrine conditions, diabetes and thyroid disorders. Discusses other, less common, endocrinopathies as they present, including pituitary, adrenal and thyroid disorders.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Improve knowledge of inpatient and diabetes management in the acute care setting.
Audience: Graduate

2. Perform a hypothesis driven history
Audience: Graduate

3. Complete a targeted exam
Audience: Graduate

4. Develop and present a weighted differential diagnosis
Audience: Graduate

5. Using clinical evidence, select a working diagnosis
Audience: Graduate

6. Present diagnostic plan including laboratory and imaging modalities
Audience: Graduate

7. Present initial patient evaluation including assessments and plans
Audience: Graduate

8. Practice communicating effectively with interprofessional team members
Audience: Graduate

MEDICINE 908 – MY STORY:TECHNIQUES FOR INTERVIEWING PATIENTS
2 credits.

Teaches students My Life, My Story interviewing and writing techniques. My Life, My Story is a novel healthcare intervention developed at the Madison VA hospital. Program staff and trained community volunteer interview Veterans about their life stories and write up a short story based on the interview. These stories are then reviewed by the veteran and (with veteran approval) added to the VA medical record to be shared with the veteran's inpatient and primary care teams. The veteran also receives printed copies of the story for his/her family. The goal of the project is to foster a closer connection between VA providers and Veterans in their care.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Demonstrate patient centered interviewing skills including nonjudgmental verbal and non-verbal communication
Audience: Graduate

2. Translate a patient story into a written summary while respecting human dignity and diversity
Audience: Graduate

3. Demonstrate efficient use of time when interviewing patients, and both writing and presenting patient stories
Audience: Graduate

MEDICINE 909 – INFECTIOUS DISEASE TRANSPLANT SERVICE ELECTIVE
2 credits.

Infectious disease management skills with a focus on transplant patients. Interaction occurs on the inpatient infectious disease transplant consult service at UW Hospital. In addition to extensive knowledge of infectious diseases in transplant patients, there is also an emphasis on major toxicities and drug interactions between antimicrobial agents, understanding the "net state of immunosuppression," and honing skills as a consultant in the hospital.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Develop and apply knowledge and skills in the practice of inpatient clinical infectious disease management with a focus on transplant patients.
Audience: Graduate

2. Discuss the “net state of immunosuppression.”
Audience: Graduate

3. Recognize major toxicities and drug interactions between antimicrobial agents.
Audience: Graduate

4. Demonstrate understanding of the role of consultants in the hospital.
Audience: Graduate

5. Perform a hypothesis driven history.
Audience: Graduate

6. Complete a targeted exam.
Audience: Graduate

7. Develop and present a weighted differential diagnosis.
Audience: Graduate

8. Using clinical evidence, select a working diagnosis.
Audience: Graduate

9. Present diagnostic plan including laboratory and imaging modalities.
Audience: Graduate

10. Interpret imaging and laboratory findings in the context of patient presentation.
Audience: Graduate

MEDICINE 910 – PHASE 3 INDEPENDENT READING AND RESEARCH IN MEDICINE
2-8 credits.

Independent research under the direct supervision of Medicine faculty. Each student's research project is individualized to meet student research goals within the context of faculty research needs.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Engage in clinical research through an apprenticeship-style learning experience with a physician-scientist mentor.

Audience: Graduate

2. Understand clinical research design by writing or contributing to a research proposal.
Audience: Graduate

3. Develop skills in the analysis of clinical research data.
Audience: Graduate

4. Develop a plan for communicating the results of the clinical research project.
Audience: Graduate

5. Improve verbal and written communication skills by preparing findings to be able to present clinical research experience and results.
Audience: Graduate

6. Formulate a hypothesis or specific objective if study does not involve hypothesis generating research.
Audience: Graduate

7. Conduct a thorough literature review of the specific research question.
Audience: Graduate

8. Select and apply statistical methodologies appropriate for the proposed analyses.
Audience: Graduate

9. Interpret results correctly and in context of previous findings from literature review.
Audience: Graduate

MEDICINE 911 – ADVANCED APPLIED CLINICAL INFORMATICS (APPLIED CLINICAL INFORMATICS PRACTICUM)
2 credits.

Clinical Informatics and the role of informaticians. Hands-on experience in Clinical Informatics within UW Health's Information Services and Physician Informatics infrastructure. Population health informatics. The principles of usability, human-computer interaction, and the Five Rights of clinical decision support. The components of implementing novel informatics tools in a large health system. The usability and impact of new Electronic Health Records (EHR) features on various users and populations and the various factors involved in decisions to approve or deny EHR requests.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Describe the field of Clinical Informatics and the skills of an informatician.
Audience: Graduate

2. Appraise new EHR features for their usability and impact on patients, providers, the health system, and entire population.
Audience: Graduate

3. Define population health informatics.
Audience: Graduate

4. Explain to non-informaticist colleagues why certain EHR requests may get approved or denied based on workload, budget, operational considerations, and technical feasibility.
Audience: Graduate

5. Interpret and evaluate clinical informatics literature.
Audience: Graduate

6. Apply principles of usability, human computer interaction, and the “Five Rights” of clinical decision support to promote or refute new EHR requests or features.
Audience: Graduate

7. Discuss the necessary components for implementing novel informatics tools in a large health system.
Audience: Graduate

8. Demonstrate professionalism in evaluating and discussing Clinical Informatics topics and technology.
Audience: Graduate

MEDICINE 912 – TRANSPLANTATION, IMMUNOLOGY AND NEPHROLOGY ELECTIVE
2-4 credits.

Evaluate and treat patients on inpatient and outpatient transplant nephrology services. Common conditions include evaluation of transplant patients with AKI and immunology related problems. Learn the basic principles of immunosuppressant management and rejection management. Review biopsies daily with a pathologist and attend surgical transplant Grand Rounds.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Develop a differential diagnosis for native and transplanted kidney acute kidney injury (AKI).
Audience: Graduate

2. Describe the renal pathology in a transplanted kidney.
Audience: Graduate

3. Perform a hypothesis driven history.
Audience: Graduate

4. Complete a targeted exam.
Audience: Graduate

5. Develop and present a weighted differential diagnosis.
Audience: Graduate

6. Using clinical evidence, select a working diagnosis.
Audience: Graduate

7. Interpret imaging and laboratory findings in the context of patient presentation.
Audience: Graduate

8. Present current literature to support patient care.
Audience: Graduate

9. Communicate effectively with interprofessional team members.
Audience: Graduate

10. Write daily progress notes including assessments and plans using standard format.
Audience: Graduate

11. Present initial and follow up patient evaluations including assessments and plans.
Audience: Graduate

MEDICINE 913 – THE SCIENCE OF CLINICAL THERAPEUTICS
2 credits.

Enhance understanding of clinical therapies and evidence-based best practice in the acute care setting. Apply this knowledge to understand clinical interventions for diseases that are seen commonly in residency: Describe the multiple common diseases and conditions; discuss their molecular biology, physiology, pathophysiology, and pharmacology; choose appropriate pharmacologic and non-pharmacologic therapies; and apply molecular biology, physiology, pathophysiology, and pharmacology to decisions about therapeutic treatment. Appraise published basic science literature and clinical guidelines, and apply knowledge to clinical case scenarios.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Describe multiple common diseases and conditions
Audience: Graduate

2. Discuss molecular biology, physiology, pathophysiology and pharmacology of these diseases
Audience: Graduate

3. Choose appropriate pharmacologic and non-pharmacologic therapies for these diseases
Audience: Graduate

4. Apply molecular biology, physiology, pathophysiology and pharmacology to decisions about therapeutic treatment of these diseases
Audience: Graduate

5. Appraise published basic science literature and clinical guidelines
Audience: Graduate

6. Apply knowledge to clinical case scenarios
Audience: Graduate

MEDICINE 914 – DATA ANALYTICS FOR POPULATION HEALTH
2 credits.

The main concepts and challenges in medical data gathering and analysis. Identification of aspects of data gathering and measurement, including emerging data sources. Informatics concepts used in population health. Use of a self-reporting tools in an electronic health record to answer population health questions, including those surrounding health equity. Formulation of a population medicine-based clinical question, and development of a reporting strategy to answer the question. Communication of a population medicine issue, including a potential path for improvement and a description of the measurement of any impact of proposed change.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Describe the main concepts and challenges in data gathering and analysis.
Audience: Graduate

2. Identify aspects of data gathering and measurement, including emerging data sources.
Audience: Graduate

3. Understand the informatics concepts used in population health.
Audience: Graduate

4. Learn to use self-reporting tools in an electronic health record to answer population health questions, including those surrounding health equity.
Audience: Graduate

5. Formulate a population medicine based clinical question and develop a reporting strategy to answer the question.
Audience: Graduate

6. Communicate a population medicine issue, propose a potential path for improvement, and describe how any impact of change could be measured.
Audience: Graduate

MEDICINE 916 – PALLIATIVE CARE ELECTIVE
2 credits.

Participating with the care of patients in the Palliative Care Unit, on the Palliative Care Consult Service, and through home visits or outpatient care opportunities, experience and understanding will be gained of fundamental palliative care concepts. Management of common symptoms, such as pain, dyspnea, and anxiety, while practicing and improving specificcommunication skills, such as delivering bad news, determining goals of care, or running a family meeting. Expand understanding of goals of care and decision-making for patients with serious illness, DNR orders, medical decision-making capacity, surrogate-decision-making, care of the patient at end of life, as well as psychosocial issues related to loss, grief, and bereavement.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Demonstrate understanding of palliative medicine/hospice approach toward patients with serious or life-threatening illness.
Audience: Graduate

2. Experience the consultative and inpatient practice of palliative care and home hospice
Audience: Graduate

3. Improve confidence and skill in the appropriate delivery of bad news and discussing end-of-life issues with patients and families
Audience: Graduate

4. Practice working with interdisciplinary team (physician, nurse, social worker, chaplain) management of patients with serious illness
Audience: Graduate

5. Describe best practice in the appropriate use of opioids and other medical treatment to improve quality of life for palliative care patients
Audience: Graduate

MEDICINE 917 – SMOKING CESSATION: PUTTING EVIDENCE INTO PRACTICE ELECTIVE
2 credits.

Training in use of evidence-based smoking cessation treatments and application of smoking cessation research in order to be able to interpret such evidence throughout your career. A special emphasis will be placed on working with underserved and specific subgroups of smokers (e.g., low-income, racial minorities, mental health status) through specific treatment plans, pharmacotherapy, counseling, including motivational interviewing, and community-based interventions such as quit lines. We will also look at how to use health systems, such as electronic health records in conducting community-participatory research in subpopulations of smokers.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Attain proficiency in selecting and delivering evidence-based smoking cessation treatments.
Audience: Graduate

2. Examine the evidence-base for the 2008 Public Health Service recommendations for treating tobacco dependence.
Audience: Graduate

3. Develop an in-depth understanding of tobacco and tobacco dependence treatment in specific sub-populations (e.g., low-income, racial minorities, mental health status).
Audience: Graduate

4. Explore how systems-level changes, such as changes to electronic health records or accreditation standards, can influence health care and delivery of tobacco dependence treatment.
Audience: Graduate

5. Describe strategies for engagement in community participatory research.
Audience: Graduate

MEDICINE/B M I 918 – HEALTH INFORMATICS FOR MEDICAL STUDENTS ELECTIVE
2 credits.

Biomedical Informatics is an interdisciplinary field that combines knowledge of information sciences and medical sciences to optimize the use and application of biomedical data across the spectrum from molecules to individuals to populations. Offers an overview of the field of health informatics by providing students with the fundamental knowledge of the concepts of health informatics and how technology can be used in the delivery of health care.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Describe main concepts and challenges in health informatics.
Audience: Graduate

2. Identify the different aspects of electronic health records.
Audience: Graduate

3. Recognize medical safety issues related to chart maintenance and poor systems.
Audience: Graduate

4. Instruct patients in proper use of a personal health record (PHR).
Audience: Graduate

5. Compare and contrast the concept of learning health systems that is patient-centered, population-based, and promotes learning from data.
Audience: Graduate

6. Define population-based care and the informatics underlying it.
Audience: Graduate

7. Recognize different types of clinical decision support.
Audience: Graduate

8. Describe the area of quality measurement and improvement.
Audience: Graduate

9. Formulate how the area of quality measurement and improvement applies to clinical practice.
Audience: Graduate

10. Recognize the types and limitations of different types of quality measures.
Audience: Graduate

11. Formulate a clinical question as an answerable one, and then be able to select the appropriate resource and make optional use of it.
Audience: Graduate

12. Recognize growing role of genomics and personalized medicine in care.

Audience: Graduate

13. Describe and manage ethical issues in privacy and security.
Audience: Graduate

MEDICINE 919 – INDIVIDUALIZED PHASE 3 CLINICAL ELECTIVE IN MEDICINE
2-4 credits.

Care for hospitalized patients on general medicine or hospital medicine services. Admit new patients, round on previously admitted patients, participate in multidisciplinary rounds, and work to transition patients to the next level of care. Evaluate and manage both patients with common inpatient conditions and medically complex patients requiring collaboration with consulting specialties. Complete other patient care related learning activities as assigned by instructors (e.g., literature reviews, presentations on specific topics); these are dependent on the individual student, attending physician, and clinical site.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Perform a hypothesis driven history and complete a targeted exam.
Audience: Graduate

2. Develop and present a weighted differential diagnosis, diagnostic and treatment plans.
Audience: Graduate

3. Complete written documentation in a comprehensive, concise, accurate and timely manner.
Audience: Graduate

4. Review, interpret and present current literature to support patient care.
Audience: Graduate

5. Develop clinically relevant questions to advance learning.
Audience: Graduate

6. Communicate effectively with patients, families, physicians and non-physician team members.
Audience: Graduate

7. Engage patients in shared decision making regarding tests, orders and procedures.
Audience: Graduate

MEDICINE 920 – ADVANCED INPATIENT GENERAL MEDICINE ELECTIVE
2-4 credits.

Direct patient care involving a spectrum of acute medical conditions on inpatient hospital units with appropriate supervision from residents and attendings. Generate a weighted differential diagnosis, initial work-up and management for acute medical conditions. Review, interpret, and present current literature pertinent on patient care in primary care setting.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Improve acute inpatient care skills for taking care of adult patients on hospital units.
Audience: Graduate

2. Develop and present a weighted differential diagnosis
Audience: Graduate

3. Review, interpret clinical evidence, and justify the working diagnosis
Audience: Graduate

4. Complete written documentation in a comprehensive, concise, accurate and timely manner
Audience: Graduate

5. Demonstrate techniques of shared decision making with patients about acute medical problems and underlying chronic medical conditions, including possible lifestyle changes to promote improved health.
Audience: Graduate

6. Learn the principles of transitions of care to safely return patients to nursing home or outpatient clinics.
Audience: Graduate

7. Develop clinically relevant questions to advance learning
Audience: Graduate

MEDICINE 921 – AMBULATORY MEDICINE ELECTIVE-STUDENT HEALTH
2-4 credits.

Learn to care for young adults with general medicine problems on the university campus during the academic year. Participate in history taking, diagnosis and treatment plans for patients. Direct supervision by house staff and attending physicians. Attend regularly scheduled supervisor-student meetings, which involve some or all of the following: participating in scheduled procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions, completing problem sets, and preparing for direct patient care as needed. Complete other patient care related learning activities as assigned by instructors (e.g., literature reviews, presentations on specific topics); these are dependent on the individual student, the patients under the student's care, and the location.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2022
Learning Outcomes: 1. Manage common ambulatory illnesses and injuries among adolescents and young adults.
Audience: Graduate

2. Apply principles of preventive medicine to clinical services in primary care.
Audience: Graduate

3. Integrate developmental and behavioral stages while assessing and managing health risks.
Audience: Graduate

4. Participate collaboratively in a multidisciplinary primary health care system.
Audience: Graduate

MEDICINE 922 – AMBULATORY GENERAL INTERNAL MEDICINE ADVANCED ELECTIVE
2-4 credits.

Focuses on fundamental aspects of adult patient health important to all physicians in internal medicine. Work with academic faculty in adult patient health in the ambulatory setting to refine clinical knowledge and skills essential for providing excellent health care. Will have the opportunity to provide supervised preventative care to adults of all ages, and includes common diseases such as asthma, migraine headache, dyslipidemia, diabetes mellitus, musculoskeletal concerns and heart disease.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Improve ambulatory care skills for taking care of adult patients.
Audience: Graduate

2. Identify and address comment adult health problems and concerns.
Audience: Graduate

3. Build skills as an outpatient practitioner.
Audience: Graduate

4. Develop and present a weighted differential diagnosis.
Audience: Graduate

5. Using clinical evidence, adapt and justify the working diagnosis.
Audience: Graduate

6. Complete written documentation in a comprehensive, concise, accurate and timely manner.
Audience: Graduate

7. Review, interpret and present current literature to support patient care.
Audience: Graduate

8. Develop clinically relevant questions to advance learning.
Audience: Graduate

MEDICINE 923 – APPLICATIONS OF EPISTEMIC PRINCIPLES IN MEDICAL SCIENCE
2 credits.

Explore the intellectual framework upon which medical science is built. Epistemology is the science and theory of knowing. It asks, "When is belief justified?" Gain an understanding of the foundational principles of epistemology, including rationalism and empiricism, and apply them to the development of medical knowledge. Assess the validity of claims, including the relative value of competing claims in the context of medical controversies. Uncover the epistemic blunders that led to mistaken beliefs in the medical profession and develop habits to resist repeating such mistakes in the present and future. Consider how our epistemological beliefs affected our responses to the Covid-19 pandemic.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Compare and contrast the promises and pitfalls of empiricism and rationalism in the context of medical science.
Audience: Graduate

2. Describe how the Evidence-Based Medicine movement fits in a historical context.
Audience: Graduate

3. Evaluate studies on the grounds of internal and external validity.
Audience: Graduate

4. Judge the validity of competing claims in a scientific controversy.
Audience: Graduate

5. Identify early warning signs of epistemic blunders and build mental habits to protect against them.
Audience: Graduate

6. Anticipate the epistemic challenges posed by novel or rapidly changing circumstances.
Audience: Graduate

MEDICINE 930 – WOMEN'S HEALTH IN PRIMARY CARE ELECTIVE
2-4 credits.

Focuses on fundamental aspects of women's health important to all physicians in internal medicine. Work with academic faculty in women's health in the ambulatory setting to refine clinical knowledge and skills essential for providing excellent health care to women. Will have the opportunity to provide supervised preventative care to women of all ages, and includes common diseases such as asthma, migraine headache, dyslipidemia, diabetes mellitus, and heart disease - many have manifestations, risk factors or interventions which are different in women.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2019
Learning Outcomes: 1. Improve ambulatory care skills for taking care of women patients.
Audience: Graduate

2. Identify and address comment women health problems and concerns.
Audience: Graduate

3. Build skills as an outpatient practitioner.
Audience: Graduate

4. Develop and present a weighted differential diagnosis.
Audience: Graduate

5. Using clinical evidence, adapt and justify the working diagnosis.
Audience: Graduate

6. Complete written documentation in a comprehensive, concise, accurate and timely manner.
Audience: Graduate

7. Review, interpret and present current literature to support patient care.
Audience: Graduate

8. Develop clinically relevant questions to advance learning.
Audience: Graduate

MEDICINE 932 – BIOLOGY OF AGING AND AGE-RELATED DISEASES
2 credits.

Examine the biology of aging and related clinical aspects in geriatric care. Designed for medical students interested in understanding the biology of aging and how it relates to translational biomedical and clinical research as well as clinical practice. Aging and age-related diseases are examined via the combined expertise of basic scientists and clinicians in blocks of two lectures. Case studies and clinical research study design workshops provide the means to integrate didactic content in real world application. Additional materials include video vignettes focused on aging biology and on pharmacological interventions for the most common geriatric conditions.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Demonstrate understanding of biology of aging and age-related diseases and disorders (KP1)
Audience: Graduate

2. Integrate scientific evidence into clinical practice concepts (KP1, KP2)
Audience: Graduate

3. Effectively communicate basic science concepts related to aging and age-related diseases and disorders (PL3, IC3)
Audience: Graduate

4. Demonstrate the ability to critically evaluate both basic science and clinical literature and use them to make decisions (KP2, PL1)
Audience: Graduate

5. Develop basic clinical research design plans utilizing integrated knowledge from modules and scientific literature
Audience: Graduate

6. Demonstrate conceptual proficiency in fundamental biology of aging with translational focus
Audience: Graduate

7. Demonstrate conceptual proficiency in mechanisms of disease or therapeutics in geriatric diseases and disorders
Audience: Graduate

8. Demonstrate basic clinical research design proficiency
Audience: Graduate

9. Show development of critical thinking skills including critical appraisal of medical literature
Audience: Graduate

10. Demonstrate understanding of evolution of clinical medicine with regard to incorporation of aging biology concepts into diagnosis and treatment in a geriatric setting
Audience: Graduate

MEDICINE 933 – GERIATRIC ELECTIVE
2-4 credits.

Exposure to patients in outpatient clinic and on the inpatient consult service. Other exposure to patients may occur in a nursing home setting. Learn diagnostic tools to assess elders for common geriatric syndromes including cognitive impairment, depression, and falls. Gain knowledge to recognize and address poly-pharmacy, learn prescribing techniques that are appropriate for the patient's age, and recommend age-appropriate treatment plans. Active role on the inpatient consult team focusing on the care of hospitalized elders.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Improve ambulatory care skills for taking care of older adults.
Audience: Graduate

2. Identify and address commons problems for hospitalized elders.
Audience: Graduate

3. Build skill as an inpatient consultant
Audience: Graduate

4. Develop skills to care for older adults in long-term care settings, such as nursing homes.
Audience: Graduate

MEDICINE 935 – HEMATOLOGY/ONCOLOGY ELECTIVE
2-4 credits.

Exposure to patients in outpatient hematology and oncology clinics and on the inpatient consultation service. Oncology-focused rotation topics include staging and prognosis of different malignancies, basics of chemotherapy classes, and indications for chemotherapy. Hematology content includes the diagnostic approach to clotting disorders, anemia, and/or abnormal blood counts. Different chemotherapy treatments for hematologic malignancy may be included in this course. Independent reading is expected; didactic conferences are site-specific.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Develop a diagnostic and therapeutic approach to patients with solid tumors and hematologic disorders.
Audience: Graduate

2. Perform a hypothesis driven history and complete a targeted exam.
Audience: Graduate

3. Develop and present a weighted differential diagnosis.
Audience: Graduate

4. Using clinical evidence, adapt and justify the working diagnosis.
Audience: Graduate

5. Present a diagnostic plan including laboratory and imaging modalities.
Audience: Graduate

6. Correctly interpret imaging and laboratory findings and communicate results to patients and team members.
Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner.
Audience: Graduate

8. Review, interpret and present current literature to support patient care.
Audience: Graduate

9. Develop clinically relevant questions to advance learning.
Audience: Graduate

10. Communicate effectively with patients, families, physicians and non-physician team members.
Audience: Graduate

11. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care.
Audience: Graduate

12. Engage patients in shared decision making regarding tests, orders and procedures.
Audience: Graduate

13. Avoid medical jargon when communicating with patients and families.
Audience: Graduate

14. Recognize limitations and seek assistance as appropriate.
Audience: Graduate

MEDICINE 938 – INPATIENT ACTING INTERNSHIP-INTERNAL MEDICINE
4 credits.

As an inpatient medicine acting intern (AI), you will have primary responsibility for patients actionable in four domains: 1. Management: As an AI, you will develop actionable management and treatment plans based on your history, physical exam and targeted data. 2. Communication: AIs will communicate with colleagues, primary care providers and consultants. AIs will demonstrate thorough patient hand-offs and write concise discharge summaries that will be integral to patient care. 3. Learning: Patient care issues will be the central guide for learning, directing reading, consultation and research. AIs will formulate questions based upon clinical dilemmas, research the appropriate literature and databases to find the answers, and apply findings to the care of individual patients. 4. Organization: As the primary inpatient provider for patients, AIs will develop efficiency in accomplishing the day to day tasks necessary for the coordination and management of patient care.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Perform a hypothesis driven history
Audience: Graduate

2. Complete a targeted exam
Audience: Graduate

3. Develop and present a weighted differential diagnosis (EPA 2)
Audience: Graduate

4. Using clinical evidence, select a working diagnosis (EPA 2)
Audience: Graduate

5. Present diagnostic plan including laboratory and imaging modalities
Audience: Graduate

6. Interpret imaging and laboratory findings in the context of patient presentation
Audience: Graduate

7. Write admitting and daily orders (EPA 4)
Audience: Graduate

8. Justify orders based upon working diagnosis and cost-effectiveness (EPA 4)
Audience: Graduate

9. Complete written patient evaluation using standard format
Audience: Graduate

10. Write daily progress notes including assessments and plans using standard format
Audience: Graduate

11. Present initial patient evaluation including assessments and plans
Audience: Graduate

12. Based on case load, develop clinically relevant questions to further individual and team learning
Audience: Graduate

13. Give and receive patient handovers (EPA 8)
Audience: Graduate

MEDICINE 940 – ALLERGY AND CLINICAL IMMUNOLOGY ELECTIVE
2-4 credits.

Exposure to patients in an outpatient clinic setting with an attending physician and staff, to learn how to address common allergic disorders, such as allergic rhinitis, asthma, urticaria, drug and insect allergy. Focuses on skills in allergy-related history-taking, procedures used in the evaluation of allergy, and the importance of patient education and preventive management of allergic conditions.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Improve knowledge of diagnosis and management of allergic and immunologic disorders.
Audience: Graduate

2. Apply basic science knowledge in the clinical setting.
Audience: Graduate

3. Obtain patient's allergy history.
Audience: Graduate

4. Demonstrate understanding of procedures used in the evaluation of allergy.
Audience: Graduate

5. Provide appropriate patient education and preventive management.
Audience: Graduate

MEDICINE 942 – CLINICAL ELECTROPHYSIOLOGY ELECTIVE
4 credits.

Develop skills in basic electrocardiogram (EKG) and arrhythmia interpretation, pharmacologic management of arrhythmia, cardiac anatomy and use of electrophysiologic testing. Participate in the evaluation of patients referred for electrophysiology studies, focusing on the diagnosis and management of cardiac rhythm disturbances.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Develop skills in basic electrocardiogram (EKG) and arrhythmia interpretation.
Audience: Graduate

2. Become familiar with pharmacologic management of arrhythmia, cardiac anatomy.
Audience: Graduate

3. Use electrophysiologic testing to diagnose and manage cardiac rhythm disturbances.
Audience: Graduate

MEDICINE 943 – CARDIOLOGY CONSULTATION SERVICE ELECTIVE
2-4 credits.

Opportunities to learn the process involving the evaluation and management of a full spectrum of acute and chronic cardiovascular diseases, as well as preoperative consultation for hospitalized adult patients. Become familiar with the principles of effective consultation and how to operationalize this role, through evaluating patients, presenting relevant data, providing effective cardiac consultation as an integral member of a fast-paced inpatient team. Essential skills are taught, including: interpreting 12-lead electrocardiograms (ECGs) and cardiac rhythm data from telemetry with assistance, observing select cardiac diagnostic tests and reading studies with faculty or fellows. Attendance at weekly Cardiovascular Medicine Grand Rounds is required.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Become familiar with the evaluation and management of acute and chronic, often complex, cardiovascular conditions such as arrhythmias, MI, heart failure, valvular disease and shock that occur in adult patients hospitalized for other illnesses, traumatic injuries or surgery.
Audience: Graduate

2. Assess preoperative risk for non-cardiac surgery.
Audience: Graduate

3. Learn the indications for and data provided by common cardiac diagnostic tests including electrocardiogram (ECG), echo, stress tests, and coronary angiography.
Audience: Graduate

4. Learn the principles of consultation and how to function effectively in this role.
Audience: Graduate

5. Demonstrate competency in the performance of cardiovascular history and physical examinations.
Audience: Graduate

6. Accurately read and interpret normal ECGs with common abnormalities.

Audience: Graduate

7. Correlate cardiac laboratory information, such as: diagnostic coronary angiography, hemodynamic monitoring, and results in electrophysiological testing.
Audience: Graduate

8. Recognize the major signs and symptoms of cardiac disease.
Audience: Graduate

9. Evaluate and recommend appropriate diagnostic testing for common cardiovascular conditions.
Audience: Graduate

10. Witness cardiac catheterizations, various types of stress testing, and echocardiograms.
Audience: Graduate

11. Accurately interpret the results of various cardiovascular diagnostic tools.
Audience: Graduate

MEDICINE 945 – INPATIENT CARDIOLOGY
2-4 credits.

Supervised by house staff and attending physicians activities include: rounding on service patients, participating in scheduled procedures, presenting cases and teaching topics, and discussing patient cases. On an inpatient cardiology rotation, evaluate and manage a full spectrum of patients with acute and chronic cardiovascular problems and may provide perioperative consultations for hospitalized adult patients. Care for patients with chest pain, arrhythmias, MI, heart failure, valvular disease and shock. Learn the indications for and data provided by common cardiac diagnostic tests including ECG, echo, stress tests, bedside ultrasound and coronary angiography.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Perform a hypothesis driven history and complete a targeted exam.
Audience: Graduate

2. Develop and present a weighted differential diagnosis.
Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis.
Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities.
Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members.
Audience: Graduate

6. Complete written documentation in a comprehensive, concise, accurate and timely manner.
Audience: Graduate

7. Review, interpret and present current literature to support patient care.
Audience: Graduate

8. Develop clinically relevant questions to advance learning.
Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members.
Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care.
Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders and procedures.
Audience: Graduate

12. Avoid medical jargon when communicating with patients and families.
Audience: Graduate

13. Recognize limitations and seek assistance as appropriate.
Audience: Graduate

MEDICINE 949 – ADULT INPATIENT/OUTPATIENT CARDIOVASCULAR DISEASES ELECTIVE
2-4 credits.

Exposure to both outpatient and inpatient settings, such as ward rounds, cardiac catheterization and electrophysiology labs, as well as operating rooms, to learn how to obtain an accurate history, perform a thorough cardiovascular examination, interpret patient's treadmill, nuclear, cardiology and echocardiogram performance, formulate an assessment and plan for further evaluation and treatment. Participate in the writing of orders and progress notes on in-patients for whom they are responsible and perform appropriate procedures under the direct supervision of staff. Submit input on patients' management plans, which will be closely supervised by an attending cardiologist.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Develop skills in diagnosis and management of cardiac patients with congenital and acquired cardiac disorders.
Audience: Graduate

2. Develop skills in the combined medical and surgical approach to cardiovascular disease.
Audience: Graduate

3. Use the appropriate technology and laboratory in the evaluation of patients with known or suspected cardiac disease.
Audience: Graduate

MEDICINE 951 – AMBULATORY CARDIOLOGY ELECTIVE
2-4 credits.

Provide a broad introduction to the cardiovascular syndromes and diseases that constitute a large part of the practice of adult medicine. This experience has been particularly useful for three groups: those who plan to enter an adult primary care discipline, those entering residency in emergency medicine, and those with an interest in adult cardiology.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Refine skills in obtaining and interpreting the history provided by patients with chest pain, syncope, heart failure, and palpitations.
Audience: Graduate

2. Perform and interpret the cardiovascular physical exam.
Audience: Graduate

3. Improve ability to define, diagnose and begin the initial management of heart failure, acute coronary syndromes, stable ischemic heart disease, resistant hypertension, atrial fibrillation, and hyperlipidemia.
Audience: Graduate

4. Become familiar with resources for self-study for chest X-ray and electrocardiogram (EKG) interpretation.
Audience: Graduate

5. Develop expertise in the prediction of an individual patient's cardiovascular risk as well as guideline directed mitigation of that risk.
Audience: Graduate

6. Become familiar with the use of Baye's Theorem.
Audience: Graduate

MEDICINE 955 – HEPATOLOGY ELECTIVE
2 credits.

Exposure to inpatient and outpatient hepatology practice, focusing on functioning effectively as a consultant. The majority time is spent evaluating new and follow-up consultations in the outpatient and inpatient settings. Oral presentations and effective communication with the patient and the primary service are an essential part of this rotation.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Identify the most common causes of chronic hepatitis and cirrhosis seen in the outpatient clinic.
Audience: Graduate

2. List a differential diagnosis, diagnostic and management plans for both new onset liver and decompensated end-liver stage disease.
Audience: Graduate

3. Perform effective and comprehensive evaluation of a patient with liver disease in clinic and the inpatient setting.
Audience: Graduate

4. Perform portions of the role of consulting MD in the inpatient and outpatient settings.
Audience: Graduate

MEDICINE 962 – ENDOCRINOLOGY ELECTIVE
2-4 credits.

Evaluation and management of inpatient and outpatient adult endocrine disorders. Common endocrine conditions include diabetes and thyroid disorders. Other endocrinopathies as they present.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Identify the historical and physical exam features of common endocrine disorders.
Audience: Graduate

2. Perform a hypothesis driven history
Audience: Graduate

3. Complete a targeted exam
Audience: Graduate

4. Develop and present a weighted differential diagnosis
Audience: Graduate

5. Using clinical evidence, select a working diagnosis
Audience: Graduate

6. Complete written patient evaluation using standard format
Audience: Graduate

7. Write daily progress notes including assessments and plans using standard format
Audience: Graduate

8. Present initial patient evaluation including assessments and plans
Audience: Graduate

9. Communicate effectively with interprofessional team members
Audience: Graduate

MEDICINE 965 – GASTROENTEROLOGY CLINICAL ELECTIVE
2-4 credits.

Observe routine and advanced therapeutic endoscopic procedures in the Ambulatory Procedure Center and potentially in the Intensive Care Unit. Participate in the outpatient gastrointestinal (GI) clinics approximately one half day a week, which will include exposure to Inflammatory Bowel Disease, functional GI disorders, hereditary GI cancers, esophageal disorders, and pancreas and biliary disorders.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Perform a focused history and exam and develop an assessment and plan for the most common disorders seen in an outpatient gastrointestinal (GI) practice: irritable bowel syndrome (IBS), inflammatory bowel disease (IBD), gastroesophageal reflux disease (GERD).
Audience: Graduate

2. Identify recommendations for colon cancer screening in patients at average risk and those with a family history of colon cancer.
Audience: Graduate

3. Identify the appearance of common gastrointestinal (GI) pathology on endoscopy.
Audience: Graduate

4. Summarize the appropriate risk stratification strategies and appropriate management of gastrointestinal (GI) hemorrhage.
Audience: Graduate

5. Develop a differential diagnosis for acute)gastrointestinal (GI) bleeding.
Audience: Graduate

MEDICINE 970 – INPATIENT-OUTPATIENT GASTROENTEROLOGY/HEPATOLOGY CONSULT SERVICE ELECTIVE
2-4 credits.

Inpatient consultative gastroenterology emphasize outpatient evaluation care of pts with gastrointestinal (GI) diseases, providing knowledge that nearly any clinical field can use. Develop the necessary problem solving skills and knowledge to efficiently safely evaluate manage common GI disorders other diseases which may also occur in pts with chronic intestinal diseases. Be able to recall the characteristic sign/symptoms test finding in the common GI syndromes. These disorders include: neoplasms of colon, stomach and esophagus; infectious diarrhea; malabsorption syndromes; viral drug-induced hepatitis; other primary secondary gastrointestinal diseases. Evaluation of inpts admissions, ambulatory outpts consults EM consults of the Sect. of GI. These include consultations in general GI hepatology, assisting in the endoscopic procedures on pts to provide a correlation between symptoms/signs endoscopic findings understanding the appropriate use of endoscopy.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Recall the characteristic signs/symptoms and test findings in the common gastrointestinal (GI) disorders of acid-peptic disease; inflammatory bowel disease; irritable bowel syndrome; neoplasms of colon, stomach, and esophagus; infectious diarrhea; malabsorption syndrome; viral and drug inducted hepatitis; and other common primary and secondary gastrointestinal diseases.
Audience: Graduate

2. Evaluate and develop a diagnostic plan for common gastrointestinal and liver diseases.
Audience: Graduate

3. Correlate symptoms with endoscopic and pathologic findings.
Audience: Graduate

4. Efficiently and safely evaluate and manage common gastrointestinal disorders.
Audience: Graduate

5. Recall the major indications, complications, and relative costs of the common gastroenterologic procedures including esophagogastroduodenscopoy, sigmoidoscopy, colonoscopy, and endoscopic retrograde cholangio-pancreatography (ERCP).
Audience: Graduate

MEDICINE 971 – INFECTIOUS DISEASE ELECTIVE
2-4 credits.

Inpatient clinical infectious disease management. Diagnostic approaches to infectious presentations, appropriate use of antimicrobials for treatment and prophylaxis. Role of consultants in the hospital via participation in consult team. Common conditions include cellulitis, line infections, osteomyelitis, septic arthritis, intra-abdominal infections, HIV, neutropenic fever and other infectious conditions.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Develop diagnostic approaches to patients with common infectious presentations.
Audience: Graduate

2. Identify appropriate use of antimicrobials for treatment and prophylaxis.

Audience: Graduate

3. Identify characteristics of an effective consultant and use these through direct participation in the consult team.
Audience: Graduate

4. Perform a hypothesis driven history.
Audience: Graduate

5. Complete a targeted exam.
Audience: Graduate

6. Develop and present a weighted differential diagnosis.
Audience: Graduate

7. Using clinical evidence, select a working diagnosis.
Audience: Graduate

8. Complete written patient evaluation using standard format.
Audience: Graduate

9. Write daily progress notes including assessments and plans using standard format.
Audience: Graduate

10. Present initial patient evaluation including assessments and plans.
Audience: Graduate

11. Communicate effectively with interprofessional team members.
Audience: Graduate

MEDICINE 972 – SURGICAL INFECTIOUS DISEASE ELECTIVE
2-4 credits.

Direct patient care involving a spectrum of surgical infectious diseases on an inpatient consultation service. Applying infectious disease principles in treatment of surgical site infections. Using diagnostic tools available for surgical infectious diseases across different surgical specialties. Reviewing and applying principles of antimicrobial therapy.
Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2025
Learning Outcomes: 1. Summarize the varied spectrum of surgical infectious diseases across different surgical specialties as well as within the same specialty.
Audience: Graduate

2. Describe infectious disease principles in the context of treatment of surgical site infections.
Audience: Graduate

3. Identify preventive measures of surgical site infections.
Audience: Graduate

4. Recognize the diagnostic tools (microbiologic, radiologic) available for surgical infectious diseases.
Audience: Graduate

5. Review and summarize the principles of outpatient antimicrobial therapy.
Audience: Graduate

6. Identify the practices and values that foster belongingness in partnership with a diverse health care team and patient population (e.g., authenticity, respect, support).
Audience: Graduate

MEDICINE 976 – CLINICAL NEPHROLOGY ELECTIVE
2-4 credits.

Evaluation of patients on inpatient and outpatient adult nephrology services. Common conditions include recognizing and diagnosing the cause of acute kidney injury (AKI), assessing factors that can alter the course of chronic kidney disease (CKD), and knowing the steps to hemodialysis initiation. Diagnosis and management of nephrology patients along with opportunities to see patients pre or post renal transplant.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Refine skills in obtaining and interpreting the history provided by patients with acute and chronic kidney diseases.
Audience: Graduate

2. Complete a targeted exam.
Audience: Graduate

3. Define, diagnose and begin initial management for patients with common acute and chronic kidney diseases.
Audience: Graduate

4. Develop and present a weighted differential diagnosis.
Audience: Graduate

5. Using clinical evidence, select a working diagnosis.
Audience: Graduate

6. Interpret imaging and laboratory findings in the context of patient presentation.
Audience: Graduate

7. Present current literature to support patient care.
Audience: Graduate

8. Communicate effectively with interprofessional team members.
Audience: Graduate

9. Write daily progress notes including assessments and plans using standard format.
Audience: Graduate

10. Present initial and follow up patient evaluations including assessments and plans.
Audience: Graduate

MEDICINE 981 – PULMONARY DISEASE CLINIC / CONSULTS ELECTIVE
2-4 credits.

Focuses on the evaluation and management of patients with pulmonary complaints and complex pulmonary disorders both in the inpatient and outpatient settings. Common conditions include sarcoidosis, obstructive lung disease, interstitial lung disease, pulmonary infections and pleural disease. Learn the indications for and data derived from common pulmonary tests/diagnostic procedures including, pulmonary function tests, radiographic imaging, thoracentesis and fiberopticbronchoscopy withbronchoalveolar lavage and transbronchial biopsy. Indications and management of both non-invasive and invasive mechanical ventilation will also be a focus of this rotation. Finally, learn the principles of consultation and how to function effectively in this role.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Refine skills in obtaining and interpreting the history provided by patients with acute and chronic pulmonary diseases.
Audience: Graduate

2. Complete a targeted exam.
Audience: Graduate

3. Define, diagnose and begin initial management for patients with common acute and chronic pulmonary diseases.
Audience: Graduate

4. Develop and present a weighted differential diagnosis.
Audience: Graduate

5. Using clinical evidence, select a working diagnosis.
Audience: Graduate

6. Interpret imaging, laboratory and procedure findings in the context of patient presentation.
Audience: Graduate

7. Present current literature to support patient care.
Audience: Graduate

8. Write daily progress notes including assessments and plans using standard format.
Audience: Graduate

9. Present initial and follow up patient evaluations including assessments and plans.
Audience: Graduate

10. Learn the indications for, and data derived from common pulmonary tests/diagnostic procedures.
Audience: Graduate

11. Learn the indications and management of both non-invasive and invasive mechanical ventilation.
Audience: Graduate

12. Communicate effectively with interprofessional team members.
Audience: Graduate

13. Learn the principles of consultation and how to function effectively in this role.
Audience: Graduate

MEDICINE 985 – CRITICAL CARE MEDICINE ELECTIVE
2-4 credits.

Perform direct patient care in the ICU with appropriate supervision from residents, fellows, and attendings. Independent and guided evaluation of patient will occur daily; the ability to synthesize, distill and present large amounts of information are a key skill practiced during this course. Furthermore, critical care medicine involves many medical professions; effective inter-professional teamwork is emphasized. Independent reading is expected; didactic conferences are site-specific. Topics commonly addressed in critical care medicine include pulmonary and cardiovascular physiology and pathology, ventilator support, nutritional support, renal failure, fluids and electrolytes in critical illness, and hemodynamic monitoring.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Improved knowledge of diagnostic and therapeutic approach to critically-ill patients with respiratory failure, shock, sepsis, multi-organ failure and/or other life-threatening medical conditions.
Audience: Graduate

2. Perform a hypothesis driven history.
Audience: Graduate

3. Complete a targeted exam.
Audience: Graduate

4. Develop and present a weighted differential diagnosis.
Audience: Graduate

5. Using clinical evidence, select a working diagnosis.
Audience: Graduate

6. Present diagnostic plan including laboratory and imaging modalities.
Audience: Graduate

7. Interpret imaging and laboratory findings in the context of patient presentation.
Audience: Graduate

8. Write admitting and daily orders.
Audience: Graduate

9. Write daily progress notes including assessments and plans using standard format.
Audience: Graduate

10. Present initial patient evaluation including assessments and plans.
Audience: Graduate

11. Summarize patient's hospital course during rounds and manage day to day care.
Audience: Graduate

12. Give and receive patient handovers.
Audience: Graduate

13. Write transfer notes and/or discharge summaries.
Audience: Graduate

14. Communicate effectively with interprofessional team members.
Audience: Graduate

MEDICINE 988 – CLINICAL RHEUMATOLOGY ELECTIVE
2-4 credits.

Exposure to patients in both outpatient rheumatology clinics and seeing patient as consultants in the inpatient setting. Commonly encountered rheumatologic conditions include: osteoarthritis, rheumatoid arthritis, lupus, systemic sclerosis, polyarteritis nodosa, ankylosing spondylitis, gout, pseudogout, dermatomyositis, low back pain and shoulder pain. Involves independent evaluation of patients, and then presenting to an attending. Independent reading is expected; didactic conferences are site-specific.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Improved knowledge and interpretation of clinical and laboratory presentations of rheumatic diseases, including differential diagnosis, diagnostic approach and testing, and planning appropriate therapies.
Audience: Graduate

2. Complete a targeted exam.
Audience: Graduate

3. Present diagnostic plan including laboratory and imaging modalities.
Audience: Graduate

4. Present initial patient evaluation including assessments and plans.
Audience: Graduate

5. Present current literature to support patient care.
Audience: Graduate

6. Communicate effectively with interprofessional team members.
Audience: Graduate

MEDICINE 990 – RESEARCH
1-12 credits.

Independent research under the direct supervision of Medicine faculty. Each student's research project is individualized to meet student research goals within the context of faculty research needs.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2025
Learning Outcomes: 1. Engage in clinical research through apprenticeship-style learning experience with a physician-scientist mentor

Audience: Graduate

2. Understand clinical research design by writing or contributing to a research proposal
Audience: Graduate

3. Develop skills in the analysis of clinical research data
Audience: Graduate

4. Develop a plan for communicating the results of the clinical research project
Audience: Graduate

5. Improve verbal and written communication skills by preparing findings to be able to present clinical research experience and results
Audience: Graduate

6. Formulate a hypothesis or specific objective if study does not involve hypothesis generating research
Audience: Graduate

7. Conduct a thorough literature review of the specific research question
Audience: Graduate

8. Select and apply statistical methodologies appropriate for the proposed analyses
Audience: Graduate

9. Interpret results correctly and in context of previous findings from literature review
Audience: Graduate