Please Note: At MSUCOM, we are constantly working to improve our curriculum and to meet new AOA accreditation guidelines. We need to meet the challenges of modern medicine that force us to innovate. While major changes will generally be instituted at the beginning of the school year, most minor changes may be implemented semester to semester.

Please be mindful of the need to read your syllabi before beginning your core rotations.
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Introduction

No greater opportunity, responsibility, or obligation can fall to the lot of a human being than to become a physician. In the care of the suffering he needs technical skill, scientific knowledge, and human understanding. He who uses these with courage, with humility, and with wisdom will provide a unique service for his fellow man, and will build an enduring edifice of character within himself. The physician should ask of his destiny no more than this; he should be content with no less. T.R. Harrison

These words, written by Harrison in the first edition of his *Principles of Internal Medicine*, characterize the challenges and rewards of medicine. As you enter the world of internal medicine, although changed dramatically since Harrison’s time, his advice to physicians should remain your guide throughout your career.

The art and science of internal medicine remain a source of excitement and wonder to those who have chosen to become “diagnosticians”, the early name for internists. We hope you will share in this excitement during your IM clerkship.

As medical students in your third and fourth years, you are developing the knowledge, skills, and attitudes required to evaluate and treat patients. Often the internist serves as the coordinator of care for hospitalized patients. This is an opportunity for you to learn to utilize the expertise of other specialists, assimilate their recommendations, and help the patient make informed decisions about their care.

With guidance from your internal medicine preceptor and other members of your team, you should embrace the opportunity to independently evaluate patients, practice clinical problem solving, and share your discoveries and ideas with the others, and ultimately with the patient. One of your primary goals should be to learn to be an educator, to share your knowledge with others, especially the patients, in order that they may understand their problems and become active participants in their health care.

Throughout the internal medicine clerkship, osteopathic principles should be incorporated. It should be emphasized that osteopathic internal medicine regards the patient as a whole person, promotes disease prevention, and recognizes the body’s ability to be self-regulating to the extent allowed by the patient’s physiology and immune system competence. In addition, osteopathic medicine acknowledges structure-function interrelationships and endorses the use of manipulative treatment, when appropriate, in both the inpatient and office settings.

The IM clerkship totals 12 weeks: two rotations, each 4 weeks, with a hospital-based internist or internal medicine teaching service, and 4 weeks of office-based internal medicine (part of the Primary Care Ambulatory Clerkship).
Rotation Requirements

TO SUCCESSFULLY COMPLETE THIS ROTATION YOU MUST COMPLETE ALL OF THE FOLLOWING:

At the Hospital:

A. Meet with the attending physician or senior house staff to discuss the hospital specific rules and responsibilities of the internal medicine service on the first day of the rotation. Obtain a conference schedule and discuss your work schedule.

B. Fulfill any rotation requirements that are specific to your hospital. The hospital may assign additional requirements that are not listed in this syllabus.

C. Attend all scheduled conferences as assigned.

D. Be prompt for assignments, conferences, and rounds Monday through Friday and on evenings, nights, and weekends as assigned. Any absence must be approved in advance by the attending physician and/or senior house officers. In the event of an illness or emergency, the attending must be notified as soon as possible. You may be required to make up the time according to the attending physician’s preference.

E. No vacation time may be scheduled during the internal medicine rotations. Sick time greater than one day must be made up.

F. Boards may be scheduled during this rotation. You are allowed one day off for the written exam and a three-day block to do the clinical skills exam in Philadelphia. You must provide proof of registration with your logs at the end of the rotation.

For MSUCOM Submission:

G. Complete at least one night call for each 4-week in-hospital rotation under the direction of an intern or senior student. All patients seen during night calls should be designated as such in ENCORE. We understand that certain base hospitals do not offer night call opportunities. If your base hospital was unable to provide you with a night call opportunity, please complete the “No Night Call Opportunity” sheet found in the IM 650 ANGEL course and upload the completed form to the Night Call dropbox in ANGEL.

H. When working in the hospital, keep a log of all your daily patient encounters. You must record these encounters in the online ENCORE logging system. You must record all patients you observe and attend to each day. At a minimum, students must work five shifts per week during each of the four weeks on rotation for a total of 20 shifts. Students must therefore log patient encounters for each of those 20 shifts in the online ENCORE logging system. Please refer to the ENCORE logging system protocol for details.

Note: Remediation Assignment

If a student does not submit his/her patient log information in ENCORE for the daily log and/or night call log requirements above by the deadline, he or she will be required to write a descriptive essay on 10 Internal Medicine topics chosen by Dr. Hughes. The essay
must include definition, pathophysiology, etiology, classification, presenting symptoms, complications, diagnostic work up and treatment of each topic. This essay should be mailed to Margaret Mohr, MSUCOM, Osteopathic Medical Specialties, 909 Fee Rd., B311 West Fee Hall, East Lansing, MI 48824 within two weeks of assignment. It will then be evaluated by Dr. Hughes, who will decide if a Pass or Fail will be issued or if further remediation is required.

I. Complete the patient log requirements found in ENCORE. These requirements must be completed by the end of the second core IM 650 rotation.

J. A mid-rotation evaluation form is available for you and your attendings to fill out for tracking your progress. Although this is not a requirement, it is highly recommended that you use this form to assess your own progress. Being self-aware of performance issues early will help you become a better manager of your skills. This form is found in the appendix of this syllabus, along with an assessment rubric.

K. Complete the end-of-rotation exam on the ANGEL course website. More details on this exam can be found later in this syllabus.

L. Complete the rotation evaluation (completed by your attending about your performance) and submit it to the Department of Medical Education at your hospital. **Please be aware that you must download the evaluation form that is specific to the internal medicine rotation from ANGEL or the MSUCOM Academic Programs website.** One has been attached in the appendix section of this syllabus. Be sure to print out and show the night call and patient encounters from the ENCORE logging system (items G, H and I above) to your attending at the time of evaluation.

M. At the completion of both rotations, please fill out the end-of-rotation student evaluation that is online: [http://kobiljak.msu.edu/Evaluation/UnitIII.html](http://kobiljak.msu.edu/Evaluation/UnitIII.html)

*Your online exam will be given during the last week of the rotation.* All required evaluations, logs, etc., must be completed **no later than 14 days following the end of each rotation.** Your ENCORE patient encounters must be recorded by the deadlines established in the ENCORE logging system protocol. If you have not completed your evaluations, if your web-based exam is not completed, or if your logs are not submitted by the assigned deadline, you will have the choice to complete a remediation assignment or **receive an “N” grade for the rotation and may need to repeat the entire 4 weeks.**
Didactic Requirements

At the hospital:
The didactic requirements listed below are for both core IM rotations combined. The frequency of these encounters will vary depending on whether you are at a clinic or a hospital. During a Hospital-based or Office-based Internal Medicine rotation, students are expected to:

A. Obtain osteopathic history, perform osteopathic examination and provide appropriate manipulative therapy – At least 4 in-patients or outpatients
B. Interpret at least 5 EKGs.
C. Interpret at least 5 chest x-rays/abdominal x-rays.
D. Evaluate and care for the patients with following clinical problems with guidance from attending physicians and residents.
   1. Abdominal pain – At least 2 inpatient or outpatient
   2. Chest pain – At least 2 inpatient or outpatient
   3. Cough – At least 2 inpatient or outpatient
   4. Headache – At least 2 inpatient or outpatient
   5. Anemia – At least 2 inpatient or outpatient
   6. Chronic Obstructive lung disease/Asthma – At least 2 inpatient & 2 outpatient
   7. Congestive Heart Failure – At least 1 inpatient & 1 outpatient
   8. Coronary Artery Disease – At least 2 inpatient & 2 outpatient
   9. Diabetes Mellitus – At least 2 inpatient & 4 outpatient
  10. Dyslipidemia – At least 4 outpatient
  11. Hypertension – At least 2 inpatient & 4 outpatient
  12. Peptic Ulcer Disease/GERD – At least 2 outpatient
  13. Upper Respiratory Infection/Pneumonia – At least 2 inpatient or outpatient
  14. Urinary Tract Infection – At least 2 inpatient or outpatient
  15. Interpretation urine analysis – At least 4 inpatient or outpatient
  16. Interpretation of arterial blood gas analysis – At least 3 inpatient

Please use the ENCORE logging system to track all of your patient encounters (patient log, daily log and night call). Your patient log (or “General Medicine Report” in ENCORE) must be completed by the end of your second core IM 650 rotation. Your daily log and night call must be completed at the end of each IM 650 rotation. The daily log must account for a minimum of 20 shifts (including night call). If your facility does not have a night call opportunity, please fill out the “No Night Call Available” form which you will find on the course Angel site. Once completed, please submit it in the drop box provided.
Summary of Goals and Objectives

Goals:

At the completion of the Internal Medicine Clerkship, students will acquire clinical skills, knowledge and attitudes necessary to:

- Evaluate and provide medical care for adult patients in outpatient, as well as inpatient, settings.
- Demonstrate clinical independence and responsibility towards patients under careful and consistent supervision from residents and attending physicians.

Objectives:

A. Clinical Skills

Given a clinical inpatient or outpatient setting, under supervision of attending physicians and residents, be able to:

1. Demonstrate the ability to obtain and record, in verbal and written format, an accurate problem-oriented medical history appropriate to clinical setting.
2. Perform and record problem/system focused physical examination appropriate to clinical setting.
3. Obtain and record, in verbal and written format, a problem-focused progress assessment and plan of management.
4. Demonstrate appropriate technique for performing routine bedside procedures including: venipuncture, inserting Foley catheter, obtaining blood and wound cultures. Please log all procedures on your Patient Log by adding these items under the “Additional Patients/Procedures” section of the log sheet.
5. Demonstrate ability to effectively communicate with patients, families, and healthcare colleagues necessary for the coordination of patient care.
6. Demonstrate and apply osteopathic principles and practices into patient encounters by eliciting detailed history concerning musculoskeletal complaints, performing a complete osteopathic examination, and providing appropriate manipulative therapy when indicated. Please log all structural exams and OMT treatment provided by adding these items under the “Additional Patients/Procedures” section of the Patient Log sheet.

B. Knowledge

Given patient cases and clinical scenarios, be able to:

1. Demonstrate knowledge of and diagnose basic diseases commonly seen in Internal Medicine as included in the following diagnostic groups: Cardiology, Pulmonology, Nephrology, Neurology, Infectious Disease, Gastroenterology, Rheumatology, Endocrinology, and Hematology/Oncology.
2. Identify clinical features, differential diagnosis, evaluation and management of these diseases.
3. Demonstrate the basic approach to interpretation of EKG.
4. Explain the indications and interpretation of commonly used imaging procedures in Radiology.
5. Explain the indications and interpretation of routine laboratory tests and procedures.
6. Demonstrate basic understanding of clinical ethics and their application to patient care.

7. Demonstrate an understanding of osteopathic philosophy with emphasis on the interrelationship between structure and function of the body as a single unit with an inherent capacity for natural healing.

C. Attitudes
Given a clinical inpatient or outpatient setting, under supervision of attending physicians and residents, be able to:

1. Demonstrate effective communication skills and professional attitudes with a diverse array of patients, physicians and other health care providers.
2. Demonstrate basic understanding of effects of age, gender, race, and culture and socioeconomic background in patient management.

Recommended Textbooks


List of Objectives

GASTROENTEROLOGY AND HEPATOLOGY

A. Abdominal pain
   1. Describe common causes of abdominal pain in outpatient as well as inpatient setting and identify the most likely cause of abdominal pain in a specific patient.
   2. Recognize symptoms and signs indicative of an acute/surgical abdomen.
   3. Assess the indications and interpret specific diagnostic tests and procedures commonly used to evaluate patients with abdominal pain.
   4. Develop basic initial management plan for the various causes of abdominal pain.

B. Acute and Chronic Diarrhea
   1. Identify common causes of acute and chronic diarrhea including secretory, osmotic, inflammatory and infectious diarrhea.
   2. Recognize commonly used medications/antibiotics associated with diarrhea.
   3. Describe various diagnostic tests in the evaluation of acute and chronic diarrhea.
   4. Recognize the indications of hospitalization and antibiotic treatment.

C. Gastrointestinal bleeding
   1. Describe etiology of upper and lower gastrointestinal bleeding.
   2. Perform initial evaluation and management of patients with gastrointestinal bleeding.
   3. Assess the indications of upper and lower GI endoscopies in the diagnosis and management of gastrointestinal bleeding.

D. Gastroesophageal Reflux Disease (GERD)
   1. Describe presenting symptoms and different modes of presentation of GERD.
   2. Describe differential diagnosis of GERD.
   3. Recognize alarming symptoms and complications of GERD.
   4. Assess the role and indications of upper GI endoscopy in patients with GERD.
   5. Explain the evaluation and management.

E. Peptic Ulcer disease (PUD)
   1. Demonstrate differential diagnosis, evaluation and management of PUD.
   2. Analyze complications of PUD.
F. Acute and Chronic Pancreatitis
   1. Analyze the presenting symptoms, initial evaluation and management of patients with pancreatitis.
   2. Describe different causes and differential diagnosis.
   3. Describe clinical and laboratory criteria to predict mortality.

G. Inflammatory Bowel Disease (IBD)
   1. Evaluate and describe the signs and symptoms of inflammatory bowel disease.
   2. Describe differential diagnosis and diagnostic tests.
   3. Explain the complications of IBD and indications for colonoscopy.

H. Biliary Tract Disease
   1. Identify different biliary tract diseases and their presenting symptoms and signs.
   2. Describe initial evaluation including laboratory and radiological tests and management.
   3. Develop the ability to interpret liver function tests.
   4. Evaluate the indications of surgery in a patient with gall bladder disease.

I. Hepatitis and Cirrhosis
   1. Describe causes of acute and chronic hepatitis.
   2. Interpret serologic tests for viral hepatitis.
   3. Describe presenting symptoms and physical examination findings in a patient with cirrhosis.
   5. Identify commonly used medications causing liver injury.

J. Ischemic Bowel Disease
   1. Identify the risk factors for ischemic bowel disease.
   2. Describe presenting symptoms and physical findings.
   3. Discuss the complications and management of ischemic bowel disease.
CARDIOLOGY

A. Chest Pain
   1. Describe common causes of cardiac and extra cardiac chest pain in inpatient as well as outpatient settings.
   2. Identify life-threatening causes of chest pain that you shouldn’t miss.
   3. Develop the skills to obtain focused history and perform physical examination.
   4. Discuss initial diagnostic test and management of patient with chest pain.
   5. Identify the criteria for hospitalization.

B. Acute Coronary Syndromes
   1. Explain the Pathophysiology and EKG findings of acute coronary syndromes.
   2. Identify the risk factors for acute coronary syndromes.
   3. Examine and discuss the presenting symptoms and physical findings.
   4. Describe non-invasive tests available for diagnosis and risk stratification.
   5. Assess the indications of stress test and coronary angiography.
   6. Explain the treatment of stable and unstable angina and acute MI.
   7. Identify the standard medications for the post-MI patients.

C. Heart Failure
   1. Identify the common causes of heart failure.
   2. Explain the classification of heart failure: systolic, diastolic, right- and left-sided heart failure.
   3. Describe NYHA classification.
   4. Discuss presenting symptoms and physical findings in a patient with heart failure.
   5. Describe diagnostic tests and management of heart failure.
   6. Analyze the complications and measures to prevent them in a patient with heart failure.

D. Arrhythmias
   1. Understand the pathophysiology of arrhythmias.
   2. Identify the causes of tachyarrhythmia and bradycardia.
   3. Assess presenting symptoms and risk factors.
   4. Develop the ability to identify the rhythm on EKG or rhythm strip.
   5. Understand the initial evaluation and management of atrial fibrillation, sinus bradycardia and ventricular tachycardia.

E. Pericarditis
   1. Explain common causes of pericarditis.
   2. Assess and discuss the presenting symptoms and physical findings.
   3. Discuss EKG findings and management of pericarditis.
F. Hypertension
   1. Explain classification and common causes of hypertension.
   2. Perform the initial evaluation and indications of treatment in a patient with newly diagnosed hypertension.
   3. Discuss different antihypertensive medications, their indications in different clinical scenarios and adverse reactions.
   4. Explain further evaluation of possible secondary hypertension.
   5. Define and manage hypertensive urgency and emergency.

G. EKG interpretation
   1. Develop the skills to read the EKGs of common clinical problems.
   2. Identify EKGs of life threatening clinical situations eg acute MI, angina, Pericarditis, arrhythmia.
   3. Interpret EKG findings of electrolyte imbalance.

PULMONOLOGY

A. Cough
   1. Identify most common causes of cough routinely seen in clinical practice.
   2. Interpret alarming symptoms in patients presenting with cough.
   3. Describe important history and examination findings.
   4. Describe different diagnostic tests available and their indications in evaluation of cough.
   5. Discuss different symptomatic treatments available for cough.

B. Dyspnea
   1. Discuss common causes of acute and chronic dyspnea.
   2. Analyze important history and physical examination findings.
   3. Discuss available tests in evaluation of the patient with dyspnea.
   4. Recognize the indications of hospitalization.

C. Upper Respiratory Infection
   1. Discuss differentiating features of viral and bacterial upper respiratory infections.
   2. Assess and describe the indications of antibiotic treatment in patients with upper respiratory infection.

D. Obstructive Lung Disease: COPD/Asthma
   1. Define COPD and common causes of exacerbation of COPD.
   2. Discuss presenting symptoms and physical examination findings.
   3. Identify different pharmacologic and nonpharmacologic therapies available for treatment of COPD.
   4. Discuss indications of oxygen therapy.
   5. Identify indications of intubation in patients with COPD exacerbation.
E. Pulmonary Embolism (PE)
   1. Discuss causes of pulmonary embolism.
   2. Recognize presenting symptoms of pulmonary embolism.
   3. Describe initial diagnostic tests in the evaluation of PE.
   4. Explain the likelihood of PE based on clinical suspicion and V/Q scan or CT scan result.
   5. Describe indication of pulmonary angiogram.
   6. Discuss the different treatment options for pulmonary embolism.

F. Pneumonia
   2. Describe respiratory examination findings and time lapse in a patient with pneumonia.
   3. Interpret diagnostic tests in the evaluation of pneumonia and interpret sputum gram stain and cultures.
   4. Discuss empiric treatment of pneumonia depending on the risk factors and suspected organisms.
   5. Explain the criteria for hospital admission in patients with pneumonia.
   6. Explain the PORT score and its use for risk stratification.

G. Pleural Effusion
   1. Describe the common causes of pleural effusion.
   2. Discuss history and physical examination findings.
   3. Discuss indications and complications of thoracentesis.
   4. Describe the tests need to be ordered on the pleural fluid and interpret the results.

RHEUMATOLOGY

A. Osteoarthritis
   1. Describe the common causes of joint pain.
   2. Define osteoarthritis and describe joints commonly affected by it.
   3. Describe the key points on the physical examination, when evaluating joint pain.
   4. Interpret indication of different radiological tests in the evaluation of joint pain.
   5. Discuss management of osteoarthritis.
B. Rheumatoid Arthritis
   1. Define rheumatoid arthritis and describe presenting symptoms and examination findings.
   2. Diagnose rheumatoid arthritis based on clinical criteria and diagnostic tests.
   3. Discuss the management of rheumatoid arthritis.
   4. Discuss common side effects of DMARDs (disease-modifying antirheumatic drugs)

C. Infectious/Septic Arthritis
   1. Recognize septic arthritis in a patient presenting with joint pain.
   2. Identify common infectious agents in septic arthritis.
   3. Interpret different tests ordered on joint fluid.
   4. Discuss the indications of surgical referral.

D. SLE (Systemic Lupus Erythematosus)
   1. Define SLE and discuss diagnostic criteria for SLE.
   2. Discuss the clinical manifestations of lupus.
   3. Recognize drug-induced lupus and identify differentiating features.
   4. Discuss complications and management of SLE.

E. Gout
   1. Identify the risk factors/triggers for a gouty arthritis.
   2. Describe the mechanism of elevated uric acid in gout and apply that knowledge in the treatment.
   3. Describe the typical presentation of acute gouty arthritis.
   4. Discuss diagnosis and management of patient with gout.
   5. Analyze the indications of and current medications available for chronic treatment to prevent gouty attack.

ENDOCRINOLOGY

A. Diabetes Mellitus (DM)
   1. Define/diagnose diabetes mellitus and differentiate type 1 Diabetes from type 2 Diabetes.
   2. Recognize the risk factors for DM.
   3. Define DKA (Diabetic Ketoacidosis) and hyperglycemic hyperosmolar coma.
   4. Discuss presenting symptoms in a patient with Diabetes.
   5. Discuss periodic health maintenance (physical exam, blood tests, appropriate referrals) in a diabetic patient.
   6. Discuss indications, contraindications and side effects of oral hypoglycemic agents commonly used in clinical practice.
8. Discuss indications of insulin treatment and decide the type and dose of insulin you would like to start.
9. Recognize the symptoms of hypoglycemia and its treatment depending on clinical scenario.
10. Discuss important steps in the treatment of DKA and hyperosmolar coma.
11. Understand the management of Diabetes in a) pregnant females and b) hospitalized patients.

B. Diabetes Insipidus
   1. Define and classify diabetes Insipidus.
   2. Analyze the different causes and diagnostic evaluation of diabetes Insipidus.
   3. Discuss treatment of diabetes Insipidus.
   4. Understand the development of diabetes insipidus as a paraneoplastic syndrome.

C. Thyroid Disorder
   1. Describe common causes of hyperthyroidism and hypothyroidism.
   2. Evaluate the causes of thyroid nodules.
   3. Describe presenting symptoms of hyperthyroidism, hypothyroidism and thyroid storm.
   4. Describe physical examination findings in a patient with thyroid disorder.
   5. Interpret thyroid function tests and understand indications of different blood tests (other than thyroid function tests) available in evaluation of hyperthyroidism and hypothyroidism.
   6. Differentiate between a malignant and benign thyroid nodule.
   7. Interpret the indications of thyroid ultrasound and thyroid scans.
   8. Discuss treatment of hyperthyroidism, hypothyroidism and thyroid storm.

PREVENTIVE MEDICINE

A. Smoking
   1. List hazards of smoking on health.
   2. Discuss different methods for smoking cessation.
   3. Discuss side effects of smoking cessation.

B. Substance Abuse
   1. Define substance use, abuse and addiction.
   2. Recognize important history findings and screening tools (eg CAGE questionnaire) for drug abuse.
   5. List clinical effects of cocaine intoxication.
C. Obesity
   1. Define and classify BMI (Body Mass Index).
   2. List comorbidities and complications of obesity.
   3. List different treatment options available for weight reduction.
   4. List indications of bariatric surgery.

D. Immunization
   1. List suggested routine immunization for adults.
   2. List indications of pneumococcal, shingles, TdaP and influenza vaccines.

GERIATRICS

A. Falls
   1. List complications of falls in elderly.
   2. Discuss preventive strategies for falls and for complications of falls.

B. Dementia
   1. List common causes of dementia in elderly patients.
   2. List most common causes of “reversible dementia”.
   3. Diagnose dementia.
   4. Discuss basic management approaches to patients with dementia.

C. BPH & Urinary incontinence
   1. Define and diagnose BPH.
   2. Discuss medical treatment of BPH.
   3. List and differentiate basic categories of urinary incontinence.
   4. Discuss common treatment options for urinary incontinence.

DERMATOLOGIC DISORDERS

A. Pruritus
   1. List common causes of Pruritus.

B. Maculopapular Rash (drug reactions, viral infections, scabies)
   1. List most common causes of erythematous macules or papules in adults.
   2. Discuss distinguishing features and treatment of Maculopapular rash.

C. Scaling Rash (Psoriasis, Tinea, pityriasis rosea, seborrheic dermatitis)
   1. Discuss the basic treatment of scaling rashes.
   2. List common causes of scaling rashes in adults.
D. Skin Cancers
   1. List different types of skin cancers.
   2. Discuss examination findings/concerning features for malignant melanoma.
   3. Evaluate suspicious skin lesions and moles.

E. Vesicular skin lesions
   1. List common causes of vesicular skin lesions.
   2. Discuss the treatment of herpes zoster, herpes simplex and postherpetic neuralgia.

ENT AND EYE DISORDERS

A. Discuss differentiating features of Otitis externa and Otitis media.

B. Discuss treatment of Otitis externa and Otitis media.
   C. Evaluate and treat a patient with Epistaxis.
   D. Evaluate and treat a patient with Acute and Chronic sinusitis.

E. List causes of red eye and identify concerning features that can lead to blindness.

WOMEN’S HEALTH

A. Osteoporosis
   1. Define osteoporosis and identify the risk factors of osteoporosis.
   2. Interpret DEXA scan results.
   3. Discuss risks and benefits of hormone replacement therapy and bisphosphonates.
   4. Discuss prevention and treatment of osteoporosis.
   5. Discuss vitamin D deficiency screening and treatment.

B. Menopause
   1. Define menopause and perimenopause.
   2. Describe presenting symptoms of menopause.
   3. Discuss treatment of menopausal symptoms (eg hot flashes).

PSYCHIATRY

A. Depression/Bipolar disorder
   1. Describe causes and diagnostic criteria for depression.
   2. Discuss medical management of bipolar disorder/major depression.
B. Anxiety/Panic attacks.
   1. Describe symptoms of panic attack.
   2. Discuss the treatment of panic attack and anxiety.

C. Eating disorders
   1. Describe clinical features of anorexia nervosa and bulimia nervosa.
   2. Discuss complication and treatment of eating disorders.

D. Obsessive Compulsive disorder
   1. Diagnose and treat obsessive-compulsive disorder.

HEMATOLOGY AND ONCOLOGY

A. Anemia
   1. Define and discuss different causes of anemia.
   2. Describe presenting symptoms and examination findings of anemia.
   3. Analyze CBC and peripheral smear in the evaluation of anemia.
   4. Differentiate and treat various types of anemia.

B. Thrombocytopenia
   1. List common causes and examination findings of thrombocytopenia.
   2. Define HIT (heparin induced thrombocytopenia).
   3. Analyze CBC and peripheral smear in the evaluation of thrombocytopenia.

C. Sickle cell disorders
   1. Describe clinical manifestations of sickle cell disease.
   2. Treat acute chest syndrome in a patient with sickle cell disease.
   3. Describe specific treatment of sickle cell disease.

D. Leukemias
   1. List various types of Leukemias.
   2. Discuss common symptoms and complications of Leukemia.
   3. Describe different tests available to diagnose leukemia.

E. Transfusion reactions
   1. List different immunologic blood transfusion reactions.
   2. Define acute and chronic hemolytic transfusion reaction.

F. Breast Cancer
   1. List the risk factors for breast cancer.
   2. Discuss diagnostic work up of a suspicious breast lesion.
G. Colorectal Cancer
1. Discuss various screening tests available for colorectal cancer.
2. Identify the risk factors for colon cancer.
3. Describe presenting symptoms in a patient with colorectal cancer.
4. Understand the basic treatment of colorectal cancer.

H. Lung Cancer
1. Discuss classification/various types of lung cancers.
3. Evaluate a single nodule on chest x-ray.
4. Understand the basic approach in the work up of possible lung cancer.
5. Describe the common neoplastic syndromes associated with various lung cancers.

I. Prostate Cancer
1. Describe basic work up in a patient with suspicion for prostate cancer.

INFECTIONOUS DISEASE

A. Infective Endocarditis
1. List causes of infective endocarditis including different organisms involved.
2. Discuss presenting symptoms and diagnostic criteria of endocarditis.
3. Describe basic treatment of endocarditis.

B. Tuberculosis (TB)
1. List risk factors for tuberculosis.
2. Discuss presenting symptoms of pulmonary tuberculosis.
3. Discuss treatment of pulmonary tuberculosis.
4. Discuss the appropriate evaluation and treatment of a patient due to the start of Remicade or other such drugs for the treatment of Rheumatoid Arthritis to rule out latent tuberculosis, histoplasmosis, or other latent infections.

C. Meningitis
1. Define meningitis and list most common causes of meningitis.
2. Describe clinical symptoms of meningitis of various causes.
3. Discuss CSF findings with meningitis of various causes.
4. Interpret the indications of CNS imaging before lumbar puncture.
5. Discuss the treatment of viral, bacterial and fungal meningitis.

D. Urinary Tract Infection (UTI)
1. List various causes and presenting symptoms of UTI.
2. Describe treatment and complications of UTI.
E. Sexually Transmitted Diseases (STDs)
1. List microorganisms involved in various STDs.
2. Discuss diagnosis and treatment of bacterial vaginosis.
3. Discuss diagnosis and treatment of vaginal candidiasis.
4. Discuss diagnosis and treatment of trichomoniasis and herpes simplex.
5. Discuss diagnosis and treatment of Chlamydia and Gonorrhea.

F. HIV/AIDS
1. Define HIV and AIDS.
2. List opportunistic infections according to CD4 count in the natural history of HIV.
3. List risk factors and clinical symptoms of HIV.
4. Discuss indications of CD4 count and viral load.
5. Discuss various antiretroviral drugs and their side effects.

NEUROLOGY

A. Headache
1. List common causes of headache and discuss their differentiating clinical features.
2. Identify ominous signs and symptoms in a patient with headache.
3. Discuss treatment of migraine and tension headaches.
4. List indications of CNS imaging in a patient with headache.

B. Syncope & Altered mental status
1. Define syncope and list common causes of syncope.
2. Discuss various clinical findings that help distinguish peripheral from central causes of vertigo.
3. Discuss physical examination in a patient with syncope.
4. Describe various causes of altered mental status and discuss initial work up in a patient with altered mental status.
5. Define various terms used to describe level of consciousness.

C. Epilepsy
1. Define seizures and discuss classification/types of seizures.
2. Discuss initial work up in patients presenting with first seizure.
3. List commonly used antiepileptic medications and their side effects.
D. Stroke
   1. List classification of stroke according to distribution and Pathophysiology.
   2. Discuss clinical symptoms and physical examination findings in a patient presenting with acute stroke.
   3. Discuss indications and contraindications of tPA (tissue plasminogen activator).
   4. Describe risk factors and medical management of stroke.

E. Parkinson disease
   1. Discuss clinical presentation of Parkinson disease.
   2. Discuss commonly used medications and their side effects.

NEPHROLOGY

A. Urine analysis
   1. Interpret urine analysis.

B. Nephrotic/Nephritic Syndrome
   1. Define Nephrotic/Nephritic syndrome and list common causes of Nephrotic/Nephritic syndrome.
   2. Describe clinical presentation and physical examination findings.
   3. Discuss diagnosis and treatment of Nephrotic/Nephritic syndrome.

C. Acid-Base Disorders
   1. Define academia and alkalemia.
   2. List causes of metabolic acidosis and metabolic alkalosis.
   3. List causes of respiratory acidosis and respiratory alkalosis.
   4. Interpret arterial blood gas analysis (primary and compensatory processes, osmolal and anion gap).

D. Fluid and Electrolytes
   1. Discuss causes, clinical presentation, diagnosis and treatment of Hypernatremia and Hyponatremia.
   2. Discuss causes, diagnosis and treatment of SIADH.
   3. List the indications and complications of administering 3 % saline in the treatment of Hyponatremia.
   4. Discuss causes, clinical presentation, diagnosis and treatment of Hypokalemia and Hyperkalemia.
   5. Discuss causes, clinical presentation, diagnosis and treatment of Hypocalcemia and Hypercalcemia.
E. Acute Renal Failure
   1. Discuss causes or classification of acute renal failure.
   2. Discuss clinical signs and symptoms of acute renal failure.
   3. Discuss urine findings and “FeNa” in distinguishing major types of acute renal failure.
   4. Discuss indications for dialysis in acute renal failure.

F. Nephrolithiasis
   1. Discuss clinical presentation in a patient with nephrolithiasis.
   2. Describe initial work up and treatment of nephrolithiasis.

OPP

A. Describe the osteopathic structural exam appropriate for an internal medicine practice, and how structural findings are integrated in the overall workup of the patient.
B. Describe how somatic dysfunction may restrict physiologic functioning in the patient, and how osteopathic manipulative treatment may influence this physiological process.
C. Demonstrate clinical understanding in common internal medicine conditions, considering:
   a. Relevant anatomy and physiology
   b. Typical manifestations of somatic dysfunction
   c. Relevant sympathetic and parasympathetic innervation and influence
   d. Pain and pain behavior
   e. Venous, lymphatic, and cerebrospinal fluid pathways
   f. Biomechanical impact
   g. Supporting the body’s self healing mechanisms
   h. Psychosocial implications
   i. Prioritize the above considerations based on the individual patient
D. Describe the role of somatic dysfunction in the pathophysiology in each condition.
E. Devise an osteopathic management plan for each of the listed conditions.
   a. Address indications and contraindications for osteopathic manipulative treatment.
   b. Include rationale for osteopathic manipulative treatment in plan.
   c. Recognize the distinctive adaptation of technique necessary in this patient population.
   d. Be able to modify OMT techniques for hospitalized and post-surgical patients.
F. Apply the above objectives to the following common internal medicine conditions:
   a. Cardiovascular Medicine:
      i. congestive heart failure
      ii. peripheral vascular disease
b. Pulmonary Medicine:
   i. asthma
   ii. COPD
   iii. Pneumonia
   iv. bronchitis
   v. restrictive lung diseases
   vi. pleural effusion
Internal Medicine Online Exam Information

On Thursday of the third week of each of your core Internal Medicine rotations, you will receive an email with instructions to take an online timed exam via the Internal Medicine ANGEL course website. Please note the following guidelines pertaining to this exam:

- Exam rosters are based on your online schedule. Therefore, if you have changed your schedule and the change is not yet reflected on your online schedule, it is your responsibility to notify Margaret Mohr at 517-884-7595 / Margaret.Mohr@hc.msu.edu as soon as possible.

- You must take an online timed exam at the conclusion of each of your two core Internal Medicine rotations.

- **At the end of your first rotation**, you will be given an exam that is based on mastery learning. That is, you will have as many chances as needed to get the right answer, and therefore, everyone must pass the test with 100%. Each item will have feedback, even if you choose the wrong answer. These questions were written for you so that you can study each question and know the material.

- For the first rotation exam, we suggest that you study the objectives listed in the syllabus from pages 9 to the middle of page 15, up to “Preventative Medicine.” At the end of the first rotation, you will take a mastery exam which will help you get an idea of the types of questions that will be on the exam at the end of the second rotation, which will count.

- **At the end of your second rotation**, you will be given a different 50-question end-of-rotation exam. Students must score a 70% or higher on this exam to pass.

  For the second rotation, it is suggested that you study the rest of the objectives listed in the syllabus from the middle of page 15 to 23. In other words, you should do a review of materials everyday so that by learning half the objectives during each IM rotation, you have gone over all the objectives. You can also go back to your mastery exam and review the questions again during your second IM rotation. If you follow this regimen, you will likely be well prepared for the second rotation end-of-the rotation exam. Your goal should be to have a comprehensive review of internal medicine by the time you finish the second rotation.

Exam Logistics

- You will need to log into ANGEL (http://angel.msu.edu) and select the Internal Medicine course website to access this exam. ANGEL exams work best in the latest version of the Firefox browser.
- The exam will open at 8 a.m. on Friday, the third week of your rotation, and will be available for 1 week until the exam completion deadline of 11:00 p.m. on Sunday, the last day of your rotation.
- The exam will consist of approximately 50 multiple choice questions.

- The exam will be TIMED. You will have approximately 90 minutes to submit your answers.

- You will have as many chances as needed to get the right answer on the first exam. For the second exam, once you begin the exam, you will have only one opportunity to complete it. You cannot pause or stop the exam once you begin.

- If for some reason you experience technical difficulty accessing or completing your exam, you will be responsible for contacting Ms. Margaret Mohr at 517-884-7595 during normal office hours to notify her of the problem. After hours, please send an email to Margaret.Mohr@hc.msu.edu.

**NOTE:** Any exams not completed on the ANGEL Course Website by 11:00 p.m. on Sunday, the last day of your rotation, will receive a failing grade. A student who does not take the exam, or any student who takes but fails the exam, will be contacted by the COM Academic Programs to discuss options for remediation.