SCHOOL OF MEDICINE

YEAR 2
CURRICULUM GUIDE

WAYNE STATE UNIVERSITY
SCHOOL OF MEDICINE

2015-2016

PLEASE READ THE INTRODUCTORY PAGES VERY CAREFULLY.

THEY CONTAIN IMPORTANT POLICY GUIDELINES.

Curriculum guides are subject to revision. Updated versions of the Curriculum Guide will be posted on the School of Medicine website:

Revised September 11, 2015
Wayne State University, School of Medicine
Medical Student Competencies and Institutional Learning Objectives

The Wayne State University School of Medicine has established a comprehensive set of competencies and institutional objectives to prepare students for practicing medicine in the 21st century. The following table summarizes the general competencies and institutional learning objectives. The first row defines the general competency. The second row refers to the specific learning objective associated with each competency and the cognitive domain (knowledge, skill, attitude/behavior) being evaluated for each objective.

The six general clinical competencies for medical students (identical to the general competencies of postgraduate training) include:

- Integration of the Basic Sciences in Medicine
- Integration of Clinical Knowledge and Skills to Patient Care
- Interpersonal and Communication Skills
- Professionalism
- Organization and Systems-Based Approach to Medicine
- Life Long Learning and Self-Improvement

As you progress through the basic science curriculum of medical school, periodically review these competencies and educational objectives. They provide valuable guides to the organization of the knowledge, skills and attitudes you will learn during this phase of your professional growth.
Wayne State University, School of Medicine  
Medical Student Competencies and Institutional Learning Objectives

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<table>
<thead>
<tr>
<th>Competency</th>
<th>Institutional Learning Objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive Domain:</strong></td>
<td></td>
</tr>
<tr>
<td>K=Knowledge S=Skill AB=Attitude/Behavior</td>
<td></td>
</tr>
<tr>
<td>K1</td>
<td>Knowledge of the normal structure of the human body (cell tissues and organs).</td>
</tr>
<tr>
<td>K2</td>
<td>Knowledge of the normal function of the human body (cell tissues and organs).</td>
</tr>
<tr>
<td>K3</td>
<td>Knowledge of the nature of agents and mechanisms that produce alterations in structure and function of the body.</td>
</tr>
<tr>
<td>K4</td>
<td>Knowledge of the nature and course of alterations in function produced by etiological agents and mechanisms (Pathophysiology) of the body.</td>
</tr>
<tr>
<td>K5</td>
<td>Knowledge of the nature and course of alterations in structure produced by etiological agents and mechanisms (Pathological Anatomy) of the body.</td>
</tr>
<tr>
<td>K6</td>
<td>Knowledge of the appropriate use of laboratory techniques in identifying diseases or health problems.</td>
</tr>
<tr>
<td>K7</td>
<td>Knowledge of the action, metabolism, and toxic effects of drugs.</td>
</tr>
<tr>
<td>K8</td>
<td>Knowledge of the therapeutic use of drugs.</td>
</tr>
<tr>
<td>K9</td>
<td>Knowledge of normal growth and development.</td>
</tr>
<tr>
<td>K10</td>
<td>Knowledge of the principles and concepts underlying normal behavior and mental illness.</td>
</tr>
<tr>
<td>K11</td>
<td>Knowledge of the aging process.</td>
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### Competency

**Integration of Clinical Knowledge and Skills to Patient Care**

<table>
<thead>
<tr>
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</table>

| S1 | The ability to perform a satisfactory physical exam. |
| S2 | The ability to take a satisfactory medical history including psychosocial, nutritional, occupational and sexual dimensions. |
| S3 | The ability to utilize data from the history, physical exam and laboratory evaluations to identify the health problem. |
| S4 | The ability to formulate an appropriate differential diagnosis. |
| S5 | The ability to formulate effective management plans (diagnostic, treatment, and prevention strategies) for diseases and other health problems. |
| S6 | The ability to monitor the course of illnesses and to appropriately revise the management plan. |
| S7 | The ability to perform routine technical procedures specified by the medical school and clerkship. |
| S8 | The ability to document the clinical encounter. |
| S9 | The ability to apply the principles and concepts underlying normal behavior and mental illness. |
| S10 | The ability to diagnose and participate in the management of mental illnesses. |
| S11 | The ability to apply the therapeutic use of drugs in patient care. |
| S12 | The ability to recognize normal growth and development. |
| S13 | The ability to recognize the relationship between health and illness, the patient and the patient’s environment. |
| S14 | The ability to apply psychosocial principles and concepts in the delivery of health care. |
| S15 | The ability to apply preventive and health maintenance principles and techniques in the delivery of health care. |
| S16 | The ability to apply the appropriate use of laboratory methods in identifying diseases or health problems. |
| S17 | The ability to recognize patients with immediately life threatening conditions. |
| K12 | Knowledge about relieving pain and ameliorating the suffering of patients. |
| S18 | The ability to apply Translational Medicine principles to clinical decision making. |
### Competency
#### Interpersonal and Communication Skills

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<thead>
<tr>
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<tr>
<td>Knowledge (K) = Knowledge (S) = Skill (AB) = Attitude/Behavior</td>
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<tr>
<td>S19</td>
<td>The ability to demonstrate effective physician-patient interaction skills.</td>
</tr>
<tr>
<td>S20</td>
<td>The ability to utilize appropriate communication skills to obtain a history, diagnosis, and deliver an effective treatment plan to patients.</td>
</tr>
<tr>
<td>S21</td>
<td>The ability to effectively communicate with peers and members of the healthcare team in the care of patients and their families.</td>
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### Competency
#### Professionalism

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</tr>
<tr>
<td>AB1</td>
<td>The ability to apply humanistic values in the delivery of health care.</td>
</tr>
<tr>
<td>AB2</td>
<td>The ability to work cooperatively with other health care workers in the delivery of health care.</td>
</tr>
<tr>
<td>AB3</td>
<td>The ability to respect the patients’ dignity, privacy, and confidentiality in the delivery of health care.</td>
</tr>
<tr>
<td>AB4</td>
<td>The ability to effectively interact with patients, peers and other healthcare workers from diverse cultural backgrounds.</td>
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### Competency
**Organization and Systems-Based Approach to Medicine**

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</tr>
<tr>
<td>S22</td>
<td>The ability to apply the concepts and principles of primary care and Family Medicine in the delivery of health care.</td>
</tr>
<tr>
<td>S23</td>
<td>The ability to apply cost containment principles and techniques in the delivery of health care.</td>
</tr>
<tr>
<td>K13</td>
<td>Knowledge of the health care delivery systems including social, economic and political dimensions.</td>
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<tr>
<td>K14</td>
<td>An understanding of the need and value of consultations and referrals in the delivery of health care.</td>
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### Competency
**Life Long Learning and Self-Improvement**

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</tr>
<tr>
<td>AB5</td>
<td>Recognize the need to engage in lifelong learning to stay abreast of relevant scientific advances.</td>
</tr>
<tr>
<td>AB6</td>
<td>The ability to recognize personal educational needs and to select and utilize appropriate learning resources.</td>
</tr>
<tr>
<td>S24</td>
<td>The ability to critically appraise the medical literature.</td>
</tr>
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Modifications to the School of Medicine competencies and educational objectives were approved by the Curriculum Committee in April, 2012.
GENERAL ORGANIZATION OF THE CURRICULUM

The Year 2 Curriculum for 2015-2016 will consist of (a) disciplinary courses, i.e., Immunology/Microbiology/Infectious Disease, Pathology, Psychiatry, Pharmacology, (b) an interdisciplinary course, Pathophysiology, with 9 units, i.e., Cardiovascular, Respiratory, Renal, Endocrinology, Connective Tissue, Dermatology, Hematology, Gastrointestinal, Neurology, and (c) Clinical Medicine II.

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<th>Name</th>
<th>Email</th>
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<td>Julie Samantray, M.D.</td>
<td><a href="mailto:jsamantr@med.wayne.edu">jsamantr@med.wayne.edu</a></td>
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<td>Marie-Claire Maroun</td>
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<td></td>
<td>Jessica Kado, M.D.</td>
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</table>
ACADEMIC PROGRAM
The Year 2 program is primarily devoted to understanding the effect of disease processes on organ structure and function and the actions of drugs. In the course of achieving this objective the curriculum is designed to help the student prepare him/herself for his/her role as a problem solver. This will involve acquiring basic information, but, more importantly, it will also involve understanding concepts and relationships. The lecture is one important method we have to help you learn. It is used to define part of what you are expected to know. It should be supplemented and reinforced by reading your assigned text, lecture notes, conferring with faculty and fellow Year 2 students, participating in the laboratories, computer assisted and problem solving sessions and increasing use of Blackboard.

ACADEMIC COMMUNICATION
Official Student Notices, Curricular Updates and Other Communications
The E-mail provided by the University for every student is a powerful communications tool. As described below, each class has a Class Listserve established to allow students to communicate with their class members, for faculty to provide course information to the class, and for administration to communicate with the class. Please check your E-mail on a regular basis.

Information which Academic and Student Programs and which the Office of Student Affairs need to communicate to the class will be provided through the Class Listserve to all members of the class and inside the Student Affairs Office. Such communications will include the testing logistics memos, official schedule changes and information regarding meetings among others. Immediate, critical information will continue to be communicated to the class with a paper memo in students’ mailboxes in addition to the Listserve communication.

In addition to the listserv, students will be assigned membership in a group address in the medical school’s Outlook directory. This address can be used for announcements regarding student organizational activities and other student-based projects. Anyone who is listed in the SOM Outlook directory has access to these group addresses.

UNIVERSITY CLOSURE
In the event that Wayne State University closes due to severe weather then the School of Medicine will be closed. All classes, small group activities, and exams schedule during the closure will be cancelled. A revised schedule will be sent out via the list-serve.
Sign up for WSU broadcast messages here: http://computing.wayne.edu/broadcast/

E-Mail Address and Class Listservs
Faculty and Academic staff use a variety of methods to communicate with students. One of these methods is electronic mail (e-mail). All incoming medical students will be issued two e-mail addresses. The primary address, created and supported by the school of medicine will be issued during registration. The University will also issue an address that will allow you free access to the internet and other on-line University services including the University Pipeline. Students who were undergraduates at Wayne State will continue to use their undergraduate addresses and will not receive new e-mail accounts or passwords.

A class listserv will be created for students, faculty and academic administration to communicate general announcements to the class. Students should read their e-mail daily for important curriculum information. If you have any question regarding your e-mail address or the listserv contact the Conjoint Teaching Office, room 2361.
HONOR CODE
Wayne State University School of Medicine has an Honor Code expressed in the Oath of Academic Integrity presented to and signed by the Year 1 students during Orientation. Students, faculty and administration believe that academic and professional integrity is an important component in the training and practice of medicine.

Oath of Integrity

As a part of a community of medical students, I know that my instructors and fellow students have placed their trust in my academic and professional integrity. I recognize the importance of helping each other as we struggle. Dishonesty within a medical school, however, affects not only the student, but also the reputation of the institution, and potentially our future patients.

In view of this, I hereby vow to pursue my studies with integrity and conscience. I will not accept dishonesty among my peers and pledge to honor that trust that my instructors and fellow classmates have placed in me.

As a future physician, my patients and colleagues will entrust to me matters of a sensitive and confidential nature. In some circumstances, their very lives will depend upon my integrity. I will respect their faith in me and will maintain the level of dignity and honesty that medicine demands. From this day forward, I will keep honor in this profession.

ATTENDANCE
Participation in instructional activities reveals a student's attitude toward his/her professional preparation. Consequently, attendance is expected for lectures. Attendance is mandatory for laboratories, Clinical Medicine small groups, conferences, case studies, demonstrations, patient panels and clinic days. Attendance will be monitored using OneCard readers or sign-in sheets for off-campus activities.

MISSING ASSIGNMENTS Failure to complete all assignment, including make-up assignments for missed activities, by the end of a course could result in any of the following consequences:

- Being excluded from participation in any scheduling processes for the following year
- Being prevented from registering for the following year
- Having registration for the following year cancelled

LECTURE HALL ETIQUETTE
The following items highlight elements of common courtesy expected of all medical students who attend lectures:

- Silence all cell phones and pages in the lecture hall.
- If you attend lectures, plan to stay. Sit close to an exit if you think you may have to leave a lecture early.
- Do not engage in activities during lecture that have nothing to do with the class (e.g. reading the newspaper).
- Keep whispering to a minimum.

Your compliance with these issues is an indicator of professionalism and will be greatly appreciated by the School of Medicine faculty and your fellow student/peers.
STUDENT DISABILITIES
Services for students with disabilities are coordinated by the Student Disability Services (SDS) Office located on the first floor of the David Adamany Undergraduate Library at 5155 Gullen Mall. Detailed information about SDS, the Americans with Disability Act (ADA), SDS policies and procedures, documentation guidelines, and types of accommodations can be found on the SDS website http://studentdisability.wayne.edu/index.php. The medical school encourages you to refer to the SDS website if you have a documented disability or suspect you have a disability that will impact your medical school performance. The SDS office can be contacted at 313-577-1851. Office hours are Monday-Friday 8:30-5:00 with extended evening hours on Monday and Thursday evenings until 7:00 during the fall and winter. For further information on the Student Disability Services, please refer to the Policy and Procedures Manual.

COURSE EXAMINATIONS
There will be two types of examinations, promotional and non-promotional. The purpose of promotional examinations is to determine whether students have acquired the necessary knowledge and skills. Faculty can also administer non-promotional examinations to assess their grasp of the material. Promotional examinations will NOT be returned to the students. Academic and Student Programs has instituted a Protected Examination Policy. Students are permitted, and strongly encouraged to use the Examination Question Citation process. Details of the Question Citation process will be presented to students at a separate Testing and Evaluation meeting prior to the first scheduled examination. For further information on the course examination process, please refer to the Policy and Procedures Manual.

A comparable examination will be administered for students who have an excused absence (see policy regarding excused absences). It will be comparable in content to the original examination and it will have the same pass-fail level. The exam will not be retained by the student. Students cannot cite questions on a makeup examination. Make up exams will be administered every month during the academic term. Students who receive excused absences will be automatically scheduled for an exam at the next available make-up date. Exam schedules may be found in the online class calendar.

GRADING POLICIES
When the process for determining the student’s final grades for courses, clerkships, electives or years is completed, one of the following grades will be placed on the student's transcript, i.e., I = Incomplete, U = Unsatisfactory, S = Satisfactory, and H = Honors for each course, clerkship, elective or year. Students that feel their grade is incorrect have the right to appeal the grade. For further information on the Grading Policy, please refer to the Policy and Procedures Manual.

PROMOTION
The Promotions Committee is the medical school decision-making body with regard to the promotions process and has the prerogative of determining the student’s fitness and suitability for the study and practice of medicine. The Promotions Committee makes decisions relative to the retention, promotion, and readmission of students. It also has the responsibility of assuring that the rules of the School and rights of the individuals involved have been fairly met. The Promotions Committee will formally provide instructions for the exit interview with students who have been dismissed. For further information on the promotion process, please refer to the Policy and Procedures Manual.
ACADEMIC STANDING
Enrolled students are designated to be in good academic standing unless they are officially placed on probation or are suspended. For further information on the Academic Standing, please refer to the Policy and Procedures Manual.

MANDATORY DIRECTED STUDY FOR YEAR 1 AND YEAR 2 STUDENTS REPEATING COURSEWORK
Students who are repeating coursework in Years 1 or 2 must also enroll in and complete a directed study course. This is a mandatory requirement of the Promotions Committee designed to enhance a student’s study and test-taking skills with the goal of successful completion of remediation and to provide an educational foundation for advancement to the next level of training. For further information on the Directed Study Program, please refer to the Policy and Procedures Manual.

LEAVE OF ABSENCES
Students are expected to complete assignments as scheduled and pursue the course of study in the prescribed medical school sequence. On occasion a student’s normal progression may be interrupted by – illness, pursuance of another course of study or research, or personal reasons. All requests for a leave of absence from the School of Medicine must be made in writing to the Assistant Dean for Student Affairs. Leaves should be discussed with the student’s counselor and the Student Affairs Dean, prior to submitting a formal written request. For further information on requesting a Leave of Absence, please refer to the Policy and Procedures Manual.

POLICY REGARDING EXCUSED ABSENCES
The School of Medicine’s policy for absences from scheduled course/clerkship examinations is as follows:
- If you are ill on the day of a scheduled examination or have an unavoidable emergency and need to defer taking the examination to a later date, you are required to contact the Office of Student Affairs (313-577-1463) to report the nature of your medical emergency and request permission to defer taking the examination to a later date.

For further information on the Excused Absence Policy, please refer to the Policy and Procedures Manual.

ACADEMIC SUCCESS
To help students succeed a series of academic success programs have been developed through the Office of Academic and Student Programs, Academic Support Services. The programs are open to all students, some or all of these programs may be required for students in remediation. Students will be required to attend these sessions in person. For further information on the Academic Success Program, please refer to the Policy and Procedures Manual.

POLICY FOR ONE YEAR CLOCK TO PASS STEP 1
School of Medicine policy is that students have one year following the completion of their sophomore coursework to report a passing score for Step 1 USMLE. The one year clock will begin on July 1 of the sophomore academic calendar. Students have one year to post a passing score for Step 1 USMLE or face dismissal from the Medical School. Students who have failed Step I re-examinations (including those opting for a leave of absence) are not permitted to participate in Student Senate, serve as class officers, sit on medical school committees, hold leadership roles in student organizations, or participate in extra-
curricular international travel projects or programs. For further information on the Step 1 policy, please refer to the Policy and Procedures Manual.

SPECIAL MATRICULATION
Students who fail USMLE Step 1 are designated as Special Matriculation Students. At the beginning of Special Matriculation, if the student is enrolled in a clerkship, he or she has the option of immediately stopping the clerkship he or she is taking. Students may enroll in a school-approved USMLE Step 1 review course in order to prepare for the examination. If a student chooses to remain in a clerkship after receiving a failing score on Step 1, he/she will be required to complete all clinical components of that clerkship by the time the clerkship ends. For further information on the Special Matriculation Program, please refer to the Policy and Procedures Manual.

ENTRY POINTS FOR BEGINNING YEAR III COURSE WORK
Only three entry points are permitted for students to begin Year III course work. These are:
- At the beginning of Period 1 (the beginning of July)
- At the beginning of Period 3 (late August/beginning of September)
- At the beginning of Period 7 (the beginning of January)

UNITED STATES MEDICAL LICENSING EXAMINATIONS
Wayne State University School of Medicine students are required to take USMLE, Step 1 and 2, at designated times prior to graduation. Students must pass Step 1 with a minimum score designated by NBME in order to be promoted to Year III. If a student chooses to remain in a clerkship after receiving a failing score on Step 1, he/she will be required to complete all clinical components of that clerkship by the time the clerkship ends. He/she must take the clerkship examination on the normal date at the end of the clerkship. If the student fails to do this, credit will be denied for the clerkship and it will have to be repeated after the student passes Step 1.

STUDENT EVALUATION OF THE CURRICULUM
Evaluation is considered a course requirement. Students have input into the evaluation of the curriculum through two different processes.

- Wayne State University requires that all students evaluate all faculty using a standard question form. This is both a privilege and a responsibility for you as a WSU student. Students who have not turned in their evaluation for a course will not have their course grade posted. It is recognized that not all students attend all lectures (or have the comparable experience of viewing the streaming video or listening to audiotape of the session)! However, all students are required to evaluate each course, and to evaluate the appropriate items for all faculty regardless of attendance. For example, students can evaluate the quality of the lecture notes whether or not they listened to, or viewed (in person or through streaming video), the lecturer.

- The School of Medicine provides students a unique opportunity to give constructive feedback to faculty. Students participating in the Co-Curricular Medical Education Evaluation program will conduct focus groups. The focus groups leaders present a summary of their evaluation and suggested changes to the Course Director and the Assistant Deans of Evaluations and Basic Science Education. This is an opportunity for students and faculty to engage in meaningful dialog.
REGISTRATION GUIDELINE & YEAR III ORIENTATION
Students who are scheduled to return to regular academic status after an absence for any reason of 1 year or more following completion of second year coursework are required to attend a one month clinical refresher before starting or continuing third year clerkship rotations. All Year II students will be required to register for Year III as scheduled by the Office of Records and Registration. The tentative time for registration is immediately after the final exam for the year. In addition, regardless of the date you plan to begin Year III clerkships, you will be required to attend the Year III Orientation as scheduled by the Assistant Dean, Clinical Science for the first week in July.

INJURIES, NEEDLESTICKS AND EXPOSURES TO BODY FLUIDS
During the course of a medical student’s education, he or she will come into contact with occupational hazards as a natural consequence of certain laboratory exercises. Medical students are at particular risk for needlestick injuries and other sharp injuries, since because they are in training they may not be skilled in specific procedures being performed. At all times, if a student is uncomfortable performing an assigned procedure because of the perception that his or her skills are inadequate or that supervision will not be adequate, then that student MUST refrain from doing the procedure and report to the instructor.

It is the obligation of the School of Medicine to formally educate its students regarding the prevention of occupational injuries. In addition, the school has developed programs by which students who are injured or exposed in the course of their training have the knowledge to properly seek care. Such programs are formally presented to students in the first, second and third years of the medical school curriculum.

In the event that a student is injured, stuck with a needle or other sharp instrument, or sustains exposure to a body fluid on mucus membranes or non-intact skin while engaged in coursework the student must report the incident to the instructor immediately. A written report must be completed detailing the circumstances of the exposure. The student should also notify his or her counselor of the reported incident.

A student who sustains an injury or exposure to blood and/or body fluids while participating in medical school coursework must go to the Occupational Health Services Section at UHC-4K if the event of a non-emergency injury and if the injury occurs between 8:00 am and 4:00 pm Monday-Friday. In the event of an emergency or if the injury occurs after hours or on a weekend, the student must go to the DRH emergency room. If medical treatment is required, the students’ medical insurance co-payments or deductibles will be waived for the first treatment. Follow-up medical appointment(s), if necessary, will be the responsibility of the student.

*For further information on the Injuries, needlestick and exposure policy, please refer to the Policy and Procedures Manual.*

YEAR 2 GENERAL INSTRUCTIONS AND LABORATORY RULES
During this year, you will be working with pathogenic micro-organisms which are capable of causing infections in yourself and others. There is no danger if you learn to carry out the laboratory techniques carefully; however, careless procedures on your part will endanger yourself and others. For the protection of all individuals working in the laboratory, the following rules must be strictly observed:

- Always wear a knee length laboratory coat when working in the laboratory.
• No food or drink should be consumed in the laboratory. Food should be stored only in the refrigerators labeled "Food Only" (one is provided in each inner lab). Students are responsible for keeping this refrigerator clean.

• Students must refrain from eating, smoking, or putting anything in their mouths. No mouth pipetting is permitted. Pipettors will be provided.

• Before beginning any work in the laboratory, wipe the bench top with a sponge which has been moistened with a disinfectant solution.

• At the end of the laboratory period, the sink must be cleared of all debris. All equipment must be removed from the top of the work bench and the area wiped with disinfectant solution.

• Before leaving the laboratory, during or after an experimental session, students must wash their hands thoroughly with soap and water. An antibacterial soap is provided at the sink in each inner laboratory.

• The inoculating loops and needles must be placed in the small tabletop discard bucket provided. DO NOT put used inoculating loops or needles on the tabletop.

• Any spilled or broken infectious material should be thoroughly wet down with a disinfectant and then brought to the attention of an instructor.

• Report any situation which might be hazardous to you or your fellow students to your laboratory instructor.

• In case of any accident, report first to your laboratory instructor and to Conjoint Teaching Services.

• Store any materials to be used or observed at a later class period in a drawer in the inner lab, one of the Year 2 incubators, or the Year 2 refrigerator labeled “Lab Supplies” as required.

• Laboratory supplies and materials will be clearly indicated for your use. DO NOT use any materials not specifically marked for your use. Additional supplies can be picked-up during the lab exercise from Conjoint Teaching Services.

DISCARDS

• Discard all disposable materials such as tubes, petri dishes, etc., and any material contaminated with blood or serum in the cans marked "Microbiological Discards". These materials will be picked up and sterilized once a week.

• When you are finished observing or working with cultures, discard them. DO NOT leave them in the incubators, refrigerators, or drawers.
• Small items such as slides, Pasteur pipettes, berel pipettes, etc. should be discarded in the small white containers on the bench top.

• All syringes and needles must be discarded in the containers labeled “SHARPS.”

• NEVER discard materials used in the laboratory experiments in the WHITE CANS labeled “PAPER ONLY”.

DRESS CODE
We do not have a dress code, but we expect you to have an appearance that inspires confidence in you and your school when working with patients and dealing with the public.

STUDENT COUNCIL
The Student Council is asked to appoint a representative from each class to the Curriculum Committee and the Promotions Committee. It is through these committees as well as through discussions with the individual faculty members, Course Directors, the Director of Curricular Management, and the Dean of Curricular Affairs, that your perspective can be presented effectively and our program can be improved. Students also play an important role in evaluating each course.

THE VERA P. SHIFFMAN MEDICAL LIBRARY
The Vera P. Shiffman Medical Library welcomes WSU School of Medicine students, faculty and staff to its newly renovated permanent location in the Mazurek Medical Education Commons. The hours of service are: 8:00 a.m. – midnight, Monday – Thursday; 8:00 a.m. - 8:00 p.m. Friday, noon-8 p.m. Saturday and noon – midnight Sunday. In addition to open reading areas study rooms are available and can be reserved during the library’s service hours. When not in use other Mazurek classrooms are available for study purposes when the library is closed. Your WSU One Card provides you with access to the library and should be presented on entry.

Library services including circulation/reserves and reference are now located on the main floor of Mazurek along with books and journals published after 1980. A collection of books and DVDs for ‘class reserve’ and some of the more popular examination review books are located behind the service desk. While reserve materials are restricted to three hours, books in the circulating collection may be signed out for one month; journals do not circulate. You may find more materials in our library catalog that can be accessed from any location. Our online catalog gives the location of library resources and links to online materials including several thousand electronic journals. The library’s web site at http://www.lib.wayne.edu/shiffman directs students to the online catalog, databases and more. Shiffman also provides One Card operated photocopiers and printers for both desktop and wireless printing.

In addition to wireless access for WSU students, faculty and staff in all areas, the library houses a ten seat computer training lab that is available to students when it is not in use. Off campus access to many library resources including electronic textbooks and examination review materials, MEDLINE, online journals and web resources will require student’s WSU Access ID (ab1234). For more details about computer labs and remote access please see www.lib.wayne.edu/shiffman or send questions or suggestions to askmed@wayne.edu
MEDICAL EDUCATION SUPPORT GROUP
The Medical Education Support Group (room 231 Mazurek Medical Education Commons) offers students support services for BlackBoard and PDA applications.

SCHOOL OF MEDICINE LEARNING RESOURCES
Two 40-seat computer labs on the third floor (rooms #325 and #324) are made available by the School of Medicine for students.
SCHOOL OF MEDICINE
YEAR 2 TEXTBOOKS

The purchase of textbooks is the responsibility of each student and should depend on one's present library and academic background. The following books are either required or recommended or both.

**Immunology/Microbiology (Required)**

**Immunology Case Studies**
Case Studies in Immunology: A Clinical Companion (Geha, Case Studies in Immunology: A Clinical Companion)
Raif Geha, Luigi Notarangelo

**Infectious Diseases Case Studies**
Cases in Medical Microbiology and Infectious Diseases
Peter H. Gilligan and Daniel S. Shapiro

**Recommended**


**Pharmacology (Recommended)**

**Basic & Clinical Pharmacology 13th Edition** by B.G. Katzung, S.B. Masters & A.J. Trevor,

**Reference text**


**Up-to-date Drug and Therapeutics Information**

The *Medical Letter* – Medical Letter, Inc. is a nonprofit organization that provided non-biased, peer-reviewed drug information and evaluation. Its biweekly publication, The Medical Letter is generally regarded as the most authoritative source of current drug information. The faculty of the Department of Pharmacology gives it our highest rating and it is now available through the WSU/Shiffman Library subscription system.

**Pathobiology (Required)**

**Psychiatry (Recommended)**


**Pathophysiology (Required)**

Respiratory Unit

Required:

Appropriate chapter sections from:

Recommended:

Cardiovascular Unit

Required

Recommended


Renal Unit

Recommended


Endocrine Unit

Recommended

Harriso n’s Te xt boo k o f Internal Medicine, (Latest edition)

Connective Tissue

Recommended:

Rheumatology:


Pathology:

Orthopaedics:

Pathology:
Vigorita, VJ, Ghelman, B., Orthopaedic Pathology.

Dermatology

Recommended
The Dermatology Pathophysiology Course Directors are recommending a book for the Year 2 - Dermatology Pathophysiology Unit.

Clinical Dermatology (Lange Medical Books) 1st Edition 2013; Carol Soutor and Maria Hordinsky.

http://www.amazon.com/Clinical-Dermatology-Lange-Medical-Books/dp/0071769153

Reference
https://www.aad.org/education/basic-dermatology-curriculum

Hematology Unit

Recommended
Companion website: www.wiley.com/go/essential/haematology
Gastrointestinal Unit

Recommended

Neuropathology Unit

Required

Syllabus and self-study materials.

Recommended


ISBN 978-1-4160-3618-0

Useful Websites or other on-line resources are included with the course syllabus.

Physical Diagnosis

Required:
Bickley, Lynn S. Bates' Guide to Physical Examination and History Taking. 10th or 11th Editions, Lippincott Williams and Wilkins C., 2009
Discipline: Immunology/Microbiology/Infectious Disease

Course Director: Dr. Matt Jackson

Course Objectives
The Immunology/Microbiology/Infectious Disease Course provides students with an understanding of host-parasite relationships. This understanding will encompass the workings of the innate and acquired immune protective systems as well as the microorganisms with which the protective systems seek to cope. The course has two coordinated components, Immunology and Microbiology/Infectious Diseases. The Microbiology/Infectious Diseases component is presented using an organ-based approach to reflect the diagnostic strategy used by physicians. Basic science lectures in Microbiology are followed by Infectious Disease presentations by clinical faculty. Case studies are presented in small group sessions in the MD labs. Wet labs cover topics in basic Immunology and diagnostic Microbiology.

Course Structure
- Lectures – covered on 3 written exams
- Laboratories – required attendance; wet lab exercises in Immunology, Bacteriology, Virology; covered on a single, 25 station lab practical
- Case studies – presented by Immunology and Infectious Diseases faculty in the MEC classrooms; group participation required; covered on the 3 written exams

Laboratories
The laboratory topics are correlated with the lecture presentations. Please read the introductory material to each exercise in your lab manual prior to coming to the laboratory.

Pathogenic microorganisms will be used in the lab exercises. Therefore, you must wear a lab coat for all lab sessions and use safe laboratory practices. Unless officially excused, attendance at all laboratory activities is mandatory.

Exams
- There will be 3 regular written exams and 1 laboratory practical.
  - Written exams will have approximately 3 questions per contact hour. Exam questions will be drawn from lectures and small group case study presentations. Although general knowledge from previous units may be required for some questions, the exams are not cumulative.
  - A 25 station laboratory practical will occur at the end of the course. It will cover laboratory exercises and it will be necessary to make a diagnosis based on a case study presentation and interpret basic laboratory results for the practical. Simple laboratory manipulations will be required on the practical. The laboratory practical will be weighted so that it is roughly equivalent to one written exam.

Digital Content
The Immunology, Microbiology, and Infectious Diseases website is accessible to Wayne State medical students and faculty through BlackBoard. The website contains digitized lecture presentations, review tables, interactive questions, course outlines, a list of microbiology study guides, and a faculty contact list. Faculty and students are also encouraged to use BlackBoard as a forum for discussion of relevant course material. All lecture presentations are provided as streaming media.
**Attendance**
All small group and laboratory learning activities in the Immunology and Microbiology course are required. Participation in instructional activities reveals a student’s attitude toward his/her professional preparation. The Course Director will determine the consequences for non-attendance at required activities.

**Assignments**
Any assignments, including remediation assignments for failure to meet the attendance requirement are to be completed by the end of the course, unless other arrangements have been made between the course director and the student. Failure to complete any or all assignments by established deadlines could result in any of the following consequences:
- Being excluded from participation in any scheduling process for the next academic year
- Being prevented from registering for the next academic year
- Cancellation of registration for the next academic year

**Narrative assessment**
Narrative assessment will be an element of the Immunology/Microbiology/Infectious Disease. This form of assessment will assess student competency in the following domains:
- Preparation
- Participation
- Quality of Work
- Self-Directed/Lifelong Learning
- Professionalism
- Clinical Reasoning/Problem Solving

Lab instructors will complete an assessment form (below) following the conclusion of all laboratory exercises for the course. A student with a score of 1 in any of the Professionalism attributes or with a cumulative score of less than 15 will be required to complete a remediation assignment developed by the Course Director. Students who fail to successfully remediate will receive an incomplete for the course. Incompletes are reported to the Promotions Committee for academic decision.
<table>
<thead>
<tr>
<th>Domain</th>
<th>Performance as in line with expectations for a 4 (above average)</th>
<th>Performance as in line with expectations for a 3 (average)</th>
<th>Performance as in line with expectations for a 2 (below average)</th>
<th>Performance as in line with expectations for a 1 (far below average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLEXIBILITY</td>
<td>Carefully prepared for small group discussion, is individualized; exhibits leadership; shows the ability to articulate and build rapport with the group. Uses both group and individual strategies to maintain a climate of openness and share in risk problems.</td>
<td>Demonstrates proper small-group methodology; is organized and contributes to group interaction; uses both group and individual strategies to maintain a climate of openness and share in risk problems.</td>
<td>Shows limited preparedness for discussion; has difficulty organizing contributions; uses both group and individual strategies to maintain a climate of openness and share in risk problems.</td>
<td>Shows no preparedness for discussion; has difficulty organizing contributions; uses both group and individual strategies to maintain a climate of openness and share in risk problems.</td>
</tr>
<tr>
<td>PARTICIPATION/COMMUNICATION SKILLS</td>
<td>The student introduces an idea and then participates in small group discussion; is articulate and clear; can handle complex ideas.</td>
<td>The student introduces an idea and then participates in small group discussion; is articulate and clear; can handle complex ideas.</td>
<td>The student introduces an idea but then either does not participate or does not participate in a meaningful way.</td>
<td>The student does not introduce ideas and does not participate in small group discussions.</td>
</tr>
<tr>
<td>QUALITY OF WORK</td>
<td>Consistently incorporates and applies essential work and assignments. Shows initiative, uses information in an effective way.</td>
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</tr>
<tr>
<td>SELF-DIRECTED/LEARNING ABILITIES</td>
<td>Rely on others’ initiative in seeking out information, feedback, etc. Responds appropriately in discussion.</td>
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</tr>
<tr>
<td>PROFESSIONALISM</td>
<td>Courteous, but not always professional; sometimes disorganized.</td>
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<td>Courteous, but not always professional; sometimes disorganized.</td>
</tr>
<tr>
<td>PERSONALITY</td>
<td>Professional behavior, demeanor, and work ethic.</td>
<td>Professional behavior, demeanor, and work ethic.</td>
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<td>Professional behavior, demeanor, and work ethic.</td>
</tr>
<tr>
<td>CLINICAL/RESEARCH/PROBLEM-SOLVING ABILITIES</td>
<td>Uses basic knowledge to apply to a clinical case (patient encounter, clinical case, standardized patient interview).</td>
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</tr>
</tbody>
</table>

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Clinical Medicine 2

Key Personnel/Contact Information:

Course Director: Dr. Joel Appel, jappel@med.wayne.edu
PD Section Director: Dr. Chih Chuang, chuang@med.wayne.edu
IPTV Section Director: Dr. Jennifer Mendez, jmendez@med.wayne.edu
Clinical Skills: Simone Brennan, skbrenna@med.wayne.edu
Course Coordinator: Gini Gilchrist, ggilchri@med.wayne.edu

Clinical Medicine Course offices are located at 225 Mazurek Education Commons, in the Kado Clinical Skills Center (Suite 206).

Introduction:

Clinical Medicine 2 is a continuation of Clinical Medicine 1. This course simulates the clinical learning environment in that it is case-based, and includes peer-based team learning facilitated by an experienced clinician. It is an interdisciplinary course, incorporating the fields of Family Medicine, Internal Medicine, Pediatrics, Obstetrics and Gynecology, and Emergency Medicine, and includes both University faculty and community-based physicians, as well as regional experts. The intent of this course is to continue to reinforce the important components of the practice of medicine, including taking an organized medical history while demonstrating appropriate medical interviewing skills, learning the basics of the medical record, and modeling professional behaviors. It also introduces the concepts of Physical Diagnosis.

By the end of Clinical Medicine 2, students should be able to demonstrate familiarity with:

- Medical Interviewing Skills
- Physical Examination Skills
- Analytic Reasoning Skills
- The Medical Record and Organizational Skills
- The Patient-Centered Clinical Method
- Professionalism & Medical Ethics
- Preventive Medicine and Public Health
- Current topics in Clinical Practice including End of Life Issues, Substance Use, Interpersonal Violence, Geriatrics, Persons with Disabilities, Cross-Cultural Issues, Professionalism, and Managing Care Issues

Overview:

Clinical Medicine 2, like CM1, integrates several previously discrete courses: Patient Interviewing, Physical Diagnosis, Medical Ethics, Preventive Medicine and Public Health, and the vertically integrated curricular themes (Substance Use, Cultural Competence, End of Life Issues, Geriatrics, Medicolegal Issues, Health Care Financing, and Patient Quality/Safety). It includes case-based small group sessions (9-11 students with one physician instructor), large group lectures, panels and web-based instruction, as
well as an Interprofessional Team Visit. Physical Diagnosis will continue as an independent unit within Clinical Medicine.

Clinical Medicine 2 includes two small group sessions. Students will continue to demonstrate professional behaviors including preparation, participation, punctuality, and respect for team members. The SG sessions incorporate simulated patient cases involving members of the fictional “Samples” family. **Attendance is required.** Small Groups meet at the clinical sites of the faculty instructors, which are located throughout metro Detroit. Students are responsible for coordinating transportation to their respective sites. Students will remain with their originally assigned small groups from year I for the two year II sessions.

Large group sessions include instruction on topics essential to the practice of clinical medicine. **Attendance is strongly recommended.** Large group sessions take place in the Blue Auditorium of Scott Hall.

Additional content will be presented as web-based instruction and self-study assignments. Completion of self-study assignments and supplemental readings are required, and the content will be covered during the fall exam. These materials can be accessed via Blackboard.

The Physical Diagnosis section of Clinical Medicine 2 will build upon the interviewing, history taking, and clinical decision-making skills that you have developed so far, with an emphasis on developing and practicing physical examination skills.

**Course Requirements:**

Timeliness and attendance are considered professionalism issues, since these behaviors are essential to good patient care in the practice of medicine. Since a major goal of this course is demonstrating professional behavior, attendance is a serious concern. Attendance is **REQUIRED** at orientation, all small group sessions, and large group PANEL presentations. Any absences must be reported immediately to the course director, course coordinator, and small group instructor. Attendance is monitored closely, and **absences from required sessions may result in disciplinary action or course failure, at the discretion of the Course Director.** Similarly, tardy arrival may be counted as absence, at the discretion of the small group instructor.

**Evaluation, Feedback, and Grading:**

Clinical Medicine is evaluated differently than other courses in Year 1 and 2 that primarily rely on test results for grading. CM evaluation is more similar to Years 3 and 4 where subjective evaluation of your performance by an experienced clinician will determine a significant portion of your final grade.

There is a Clinical Medicine 2 fall exam, and Physical Diagnosis Written and Practical Examinations. Students must have a minimum cumulative score of 75% on the written exams, and a minimum score of 75% on the PD practical in order to pass the course. Students must also receive satisfactory feedback on the small group instructor evaluations, and complete the IPTV.

Grading for Clinical Medicine 2 is pass/fail, with a minimum 75% pass rate (see above). Formative feedback for the year 1 OSCE will be provided in the fall of Clinical Medicine 2 during the OSCE video
review session. Students must exhibit professional conduct throughout the small group and Interprofessional Team Visit experiences, and attend all required sessions in order to pass the course.

**Grade Appeal Process:**
All grade appeals should be directed to the Course Director. Students should not contact their small group instructor to discuss grade appeals.

**Required/Recommended Equipment, Textbooks:**
Required equipment: Stethoscope (good quality)
Recommended equipment: oto-ophthalmoscope kit, tuning forks – 128 Hz and 512Hz, reflex hammer, penlight, sphygmomanometer (BP cuff)
Required reading materials:
- Course syllabus, additional lecturer handouts
- Blackboard assignments
Required textbook:
Recommended textbooks:
Recommended websites:
- http://www.usersguides.org/ (JAMA or “Users Guide textbook supported online access)
- The JAMA Clinical Rational Examination Series:
  - The Institute for Healthcare Improvement, a patient care quality and safety resource:
    http://www.ihi.org*
- You may also find a medical dictionary such as *Stedman's* useful for this course, as well as for other courses during the first two years
Discipline: Psychiatry

Course Director: Eva Waineo, M.D.

COURSE OBJECTIVES

Introduction:

This course focuses on normal development, and the recognition and treatment of psychiatric disorders seen in adults and children. We will also discuss psychiatric nomenclature, the mental status examination, and the DSM 5. In addition, there will be lectures on common psychiatric problems seen in the general hospital setting, and the impact of medical illness and hospitalization on the patient. This course will prepare you for your clinical rotation in psychiatry in the third year. It will also provide a background in psychiatry for future work in any clinical area of medicine.

Recommended Textbooks:


Required Sessions:

Both the lecture on Physician Impairment and the Patient Panel that follows are required.

Evaluation:

There will be two multiple-choice examinations in this course.

Course Director:
Eva Waineo MD
ewaineo@med.wayne.edu

Course Assistant:
Yolanda Pitts
ypitts@med.wayne.edu
(313) 577-3130
Discipline: Pharmacology

Course Director: Dr. Raymond R. Mattingly

2015-2016

COURSE DESCRIPTION

Pharmacology, the study of the action of drugs on cells and organisms, is interdisciplinary in that it combines knowledge of the biochemical and molecular mechanisms of drug action with the anatomical distribution of drugs in the body and the physiologic (and sometimes pathologic) responses to the drugs. Upon successful completion of the medical pharmacology and therapeutics course, we expect that students will possess knowledge of pharmacology and have received an introduction to therapeutics (the clinical application of drug use including appropriate doses) that will be expanded subsequently in the clinical training. There is a brief exposure to some important regulatory and administrative issues. We use mini-exams to provide students concrete examples that test knowledge objectives. The goal of the knowledge objectives and mini-exams is to allow formative assessment to determine both the content and depth of knowledge expected as well as their level of comprehension.

Course and Knowledge Objectives

The overall objectives of the course are to introduce the basic principles of pharmacology and each of the major categories of pharmacologic agents.

In the area of basic principles, students are expected to:

- Identify principles of pharmacodynamic action and apply that knowledge to appropriate case scenarios.
- Identify principles of pharmacokinetic action and apply that knowledge to appropriate case scenarios.
- Analyze and calculate major pharmacodynamic and pharmacokinetic parameters.
- Identify significant regulatory and administrative issues in the use of pharmacological agents.
- Locate and apply appropriate therapeutic information to provide a foundation for lifelong learning in use of pharmacological agents.

For each major category of pharmacologic agents, a prototype drug is identified. This prototype has been selected as being representative of the class. For each of the prototype drugs, students are expected to identify the following properties and apply that knowledge to appropriate case scenarios:

- Underlying (patho)physiological processes – What provides the pharmacological target?
- Indications – For which diseases or conditions is the drug used?
- Contraindications – What other preexisting conditions may prevent this drug from being used in a particular patient?
- Biochemical mechanism of action – How does the drug work at the molecular level?
- Therapeutic or physiologic responses – What are the expected responses?
- Predictable adverse effects – What are the expected side effects of the drug?
- Toxicity – What are the signs of toxicity of the drug?
- Pharmacokinetics – What is the time course for the amount of drug in the body and what factors may produce individual variation from the norm?
Absorption – What are the routes of administration?
Distribution – Where does the drug go within the body?
Elimination – How is the drug removed from acting within the body (metabolism, excretion) and how is elimination enhanced in poisoning?
Drug-drug interactions – With what other drugs does this drug produce an interaction, and are pharmacodynamic or pharmacokinetic mechanisms involved?

Detailed knowledge of dose levels and regimens is not required.

A short list of other drugs within the same class of agents will be provided in the lecture notes if the other agents are commonly used or have particular properties.

- Students will be expected to identify these additional agents and their particular properties and apply that knowledge to appropriate case scenarios.

Structure of Course

The Medical Pharmacology and Therapeutics course has been re-organized to emphasize intensive coverage of pharmacology in year-II of the curriculum. This pharmacology unit begins with modules on General Principles and Autonomic Pharmacology as these provide a foundation for the discipline. The remainder of the intensive course uses lectures, clinical correlation sessions, and self-study materials to cover modules on Pharmacology of Autacoids and Inflammation, Metabolic Pharmacology, CNS Pharmacology, Cardiovascular Pharmacology, and Cancer Chemotherapy. The course also includes topics that span across systems, such as drug abuse, toxicology and poisoning, pain, pediatric and geriatric pharmacology, prescription writing and drug costs, and pharmacovigilance.

The pharmacovigilance module focuses on drug interactions and associated adverse events and is taught in a small-group/interactive classroom format that enhances the coverage and emphasis on these important topics. The pharmacovigilance sessions have required attendance. Any student who receives an incomplete on a required session should refer to the SOM policy manual for a description of potential consequences.

A primary focus of the intensive pharmacology coverage is to provide specific preparation for students to answer Step 1 examination questions that require knowledge of pharmacology. This goal is achieved in partnership with the topics of antimicrobial and antiviral therapy that are comprehensively covered in the Infectious Diseases Unit that also occurs early in the year-II Medical Curriculum. The overall course is enhanced by coverage of the therapeutic topics that are relevant to each pathophysiology unit and to psychiatry during their respective courses throughout the second year.

Evaluation of Knowledge

At the conclusion of each module, students are given a formative, self-evaluation mini-exam. This examination is constructed to be representative of the questions on the formal examination and allows the student to assess his/her level of mastery of the material without a score or grade being recorded. In general students are expected to achieve a score of 80% on these mini-exams. With a performance below this standard, a student should identify the problematic areas and review the material again.

There are three course examinations. Following the conclusion of the course, all students will also take an NBME practice examination in pharmacology that will provide comprehensive assessment of the material plus the antibiotics/antiviral material provided through the Infectious Diseases Unit. The final grade and
consideration for Honors in Medical Pharmacology are primarily determined by the combined scores from three examinations that cover the intensive pharmacology course. According to SOM policy, performance on the NBME subject examination is weighted as 10% of the overall determination.

Evaluation of knowledge of pharmacology also is included in the United States Medical License Examination (USMLE) Step 1 at the conclusion of year-II. A student must pass this examination to progress into Year 3 of medical school. Review material on pharmacology topics specifically in the context of preparation for Step 1 is provided on an extra-curricular basis near the end of year-II.

**Recommended textbook**


**Reference text**

This book is encyclopedic and expensive but is still the best reference source around. The updated text is available on-line via the Shiffman library.

**Up-to-date drug and therapeutics information**

*The Medical Letter* – Medical Letter, Inc. is a nonprofit organization that provided non-biased, peer-reviewed drug information and evaluation. Its biweekly publication, The Medical Letter is generally regarded as the most authoritative source of current drug information. The faculty of the Department of Pharmacology gives it our highest rating and it now available through the WSU/Shiffman library subscription system.
Discipline: Pathobiology
Course Director: Dr. Barbara Bosch

COURSE OVERVIEW AND OBJECTIVES

The Pathobiology Course is a formal introduction into the basic mechanisms and cellular consequences of human disease. The course draws heavily upon previously introduced concepts of gross anatomy, histology, biochemistry, cell biology, physiology, genetics, immunology, and microbiology. Familiarity with these areas is important since disease states are essentially perturbations of normal biochemical, cellular and anatomical homeostasis. The course is organized into major categories of disease as follows:

- Cellular adaptations, injury and death
- Inflammation and repair
- Circulatory disturbances and atherosclerosis
- Immunopathology
- Neoplasia
- Genetic and pediatric diseases
- Environmental, infectious and nutritional disorders
- Forensic pathology

Within each of these categories of disease, two features are emphasized. The first, pathogenesis, is reviewed primarily at the molecular and cellular level. It is at this step that the course interfaces with biochemistry, cell biology, physiology, genetics, immunology, and microbiology. The second area of emphasis is altered morphology, both histologic as well as gross pathologic. At this point, pathobiology interfaces with anatomy and histology. Histopathology and gross pathology of human disease are, when possible, correlated with the characteristic clinical presentation and physical exam findings and, at all times, presented in the context of pathogenesis. Correlations are also made between gross pathology and histologic abnormalities. Histopathology is extremely challenging for students. Therefore, morphology of disease is covered from a variety of perspectives. These include images presented in lectures, photomicrographs in textbooks, and slides presented in review sessions. In addition, there are weekly pathology laboratories which employ virtual microscopy to examine tissue sections of representative human disease states (see below). Although students are not expected to develop diagnostic pathology skills, it is a major goal of the course for the students to learn basic criteria for the morphologic distinctions between major classes of human disease.
The weekly Pathobiology laboratory sessions utilize examination of both gross and microscopic pathology in order to emphasize and review course material, as well as to demonstrate correlations between disease morphology and clinical features. The labs are student-directed, problem-solving activities. A major goal of this component of the course is for students to develop their ability to make objective observations using a universal form of medical technology (e.g., the microscopic slide).

In summary, at the end of the Pathobiology Course, students should be able to:

- Discuss the cellular and molecular pathogenesis of the major classes and categories of human disease.
- Describe and explain the basic functional and anatomical consequences of major human disease states at the level of cells and tissues.
- Recognize and distinguish the following disease states in representative tissue sections or photographs:
  - the diverse types of cellular adaptations (e.g., hypertrophy, hyperplasia, metaplasia);
  - hypoxic cell injury;
  - the various types of necrosis;
  - the different patterns of inflammation;
  - the sequential characteristics of wound healing;
  - hemodynamic disorders, such as congestion, edema, atherosclerosis, and thrombosis;
  - major immunologic disorders;
  - the common types of human neoplasms, including the distinction between benign and malignant;
  - clinically relevant examples of nutritional, environmental, genetic, pediatric, and infectious disease, as outlined in those specific sections, and finally;
  - conditions associated with trauma, suicide, homicide, and other categories of forensic medicine.
- Begin to acquire skills at making observations and integrating morphologic alterations in cells / tissues with disease pathogenesis, as well as likely clinical &/or laboratory manifestations.

Course material is tested with two multiple-choice format examinations of 100 questions each (200 total items). Both exams contain images, either of gross specimens or histologic sections, the interpretation of which accounts for 10-20% of the total exam items. These photographs are based on material studied during the laboratories. Exams are graded per school policy. Performance in the laboratory sessions is judged according to the satisfaction of the teaching faculty. Attendance is mandatory for all labs. In addition, there is one required self-study e-lab near the end of the course.
Discipline: Pathophysiology – Respiratory Unit

Unit Directors: Dr. Fulvio Lonardo and Dr. Basim Dubaybo

RESPIRATORY UNIT OBJECTIVES

The overall objective of this unit is to provide the student with a conceptual framework for analyzing and understanding common chest diseases in terms of their causes (when known) and the derangements of function that result. For each disease, by the end of the unit, the student will be expected to know its:

a. Definition
b. Relevant basic science considerations (e.g. epidemiology, microbiology, pathology, etc.)
c. Associated functional derangements (i.e. pathophysiology)
d. Symptoms and signs, as they reflect b and c
e. Relevant investigations, as they reflect b and c
f. Different diagnosis (in broad principle)
g. Selected complications that reflect a persistence of b and c

Instruction is imparted by the successful combination of lecture, laboratory exercises, self-instructional materials, suggested and required readings and reviews.

Competency is judged by the successful passing of a 100 question multiple choice exam at 75% or greater.
Competency in laboratory sessions is judged according to the satisfaction of the teaching faculty.

Reading Assignments:

Required

Appropriate chapter sections from:

Recommended

Appropriate chapters or sections from:


2. Selected bibliography provided in lecture handouts.

Self Instructional Materials

1. E-Lab Materials (Lectures, Case Studies, Virtual Path Labs, Lung Pathology Images, Seminars, etc.)
2. Online reference materials and sample exams
Discipline: Pathophysiology – Hematology Unit

Unit Directors: Dr. Ali Gabali and Dr. Ayad Al-Katib

COURSE OBJECTIVE

The curriculum for the Hematology Section of Pathophysiology encompasses a wide spectrum of hematologic disorders, transfusion medicine and pharmacology as it relates to hematology. The overall philosophy for each section will be to include a brief review of the normal physiology/structure/function followed by a discussion of the pathogenesis/pathophysiology, clinical manifestations, laboratory features, diagnostic criteria, and differential diagnosis. Treatment will not be stressed, but will be included as it relates to the natural history, prognosis, or the understanding of the pathophysiologic disease process.

Lecture notes will be provided by each lecturer.

The hematology curriculum will include lectures on the following topics:

- Introduction to hematology
- the anemias
- disorders of white blood cell number and function
- the myelodysplastic syndromes and the acute leukemias
- myeloproliferative disorders
- bone marrow and stem cell transplantation
- lymphocyte structure and function and the lymphoproliferative disorders
- hemostasis (including bleeding disorders and the hypercoaguable state)
- transfusion medicine
- review sessions on anemias and the hematologic malignancies

We have 5 laboratory sessions and 3 review sessions that are designed to reinforce and expand upon the lecture material. Hematology is a very visual discipline for both the pathologist and clinician. The laboratory sessions are designed around “unknown” case studies, which promote interaction and discussion between the students and session leaders. Besides imparting factual information and reviewing morphology, working through these case studies will put the lecture material into perspective by providing insight into the clinical approach to hematologic problems/disorders, as well as the thought process used to solve them. Copies of the labs with answers will be posted on blackboard following the end of each laboratory session.

The laboratory sessions are a requirement for the course. Attendance is taken at the laboratory sessions. Please, remember that for the final exam, students will be responsible for any and all material presented in the laboratory sessions.
The final examination will be between 60 - 100 questions. 15 questions will be from pictures. Photographs may be taken directly from the pictures used in the laboratory session. The final exam will cover materials presented in the lectures and laboratory and review cases.

There are 2 recommended textbooks for the course:
Discipline: Pathophysiology – Cardiovascular Unit

Unit Director: Dr. Barbara Bosch and Dr. Shaun Cardozo

COURSE OBJECTIVE

The learning objectives of the cardiovascular unit are as follows:

To understand and be able to describe the mechanisms by which altered anatomy, physiology and biochemistry result in diseases of the heart and vascular system.

To gain an introductory understanding of how cardiovascular diseases present clinically as human disease.

Particular attention will be given to the following:

- Hemodynamics and cardiac adaptation
- Cardiac auscultation
- Understanding of the EKG
- Ischemic heart disease and myocardial infarction
- Valvular heart diseases
- Congenital heart diseases
- Diseases of the pericardium
- Non-atherosclerotic vascular diseases
- Cardiomyopathies
- Heart failure

Instruction is imparted by the successful combination of lectures, clinical correlation demonstration, small group seminars, suggested and required reading and review.

Competency will be judged by the successful passing of a 100 question multiple choice exam.
Discipline: Pathophysiology – Neurology

Unit Directors: Dr. William Kupsky and Dr. Edwin George

COURSE OVERVIEW

The Pathophysiology Unit: Neuroscience builds on the elements of neuroanatomy and neurophysiology presented in the Year 1 Neurosciences course to provide an introduction to the pathologic and pathophysiologic basis of diseases of the nervous system. These include diseases of the central and peripheral nervous system, muscle, neuromuscular junction, and organs of special sensation. The course emphasizes the principles of neuroanatomic localization of lesions in the nervous system as a basis for understanding the use of the neurologic examination and includes basic principles of neuroradiology in clinical diagnosis to prepare for the Year III/IV clinical rotations in Neurology. Selected topics in pharmacology provide background for treatment of some kinds of neurologic disease.

Neurology Unit Goals

1. At the end of this course, the student should understand the definitions, pathophysiology, pathological and neuroimaging features, and major neuroanatomic and clinical features of the following major disorders of the nervous system including:

   - Increased intracranial pressure, edema, mass lesions, and hydrocephalus.
   - Cerebrovascular disease and stroke, including ischemic and hemorrhagic stroke, hypertensive cerebrovascular disease, and global hypoxic/ischemic disease.
   - Nervous system tumors, including gliomas, PNET’s, meningiomas, Schwann cell tumors, and metastatic disease.
   - Neurodegenerative diseases, including Alzheimer, Parkinson, Huntington, ALS, and prion diseases.
   - Demyelinating and autoimmune diseases, including multiple sclerosis, ADEM and related diseases, Guillain-Barre and related diseases.
   - Neuromuscular diseases, including neurogenic muscle disease, myopathies (such as Duchenne muscular dystrophy, inflammatory myopathy, and steroid myopathy), and peripheral neuropathies (axonopathy vs. demyelinating neuropathy).
   - Epilepsy, including classification and basic principles of treatment.
   - Movement disorders, including pathophysiology and pharmacology of basal ganglia dysfunction.
   - Normal neurodevelopment and major diseases causing developmental delay.
   - Diseases of the vestibular system and extra-ocular movements.
   - Disorders of cognition and consciousness.
   - Headache, including classification and pharmacology.
   - Categories of traumatic disease, including closed head injury, skull fracture, and penetrating head injury.

2. At the end of this course, the student should be familiar with the major modalities of neuroimaging (CT and MRI scanning), be able to recognize normal and altered structures and formulate a basic differential diagnosis for common patterns of imaging abnormality.
3. At the end of this course, the student should understand the basic definitions of clinical electrophysiology and the basic use of this technique in the evaluation of neuromuscular disease.

**Course Format**
The course consists of a series of lectures, including in-class lectures, a small-group case discussion with neurology faculty, a *mandatory* laboratory demonstration session (“Clinic Day”), *mandatory* E-lab exercises, , and in-class review sessions.

Final evaluation consists of

- a 100-question written examination, which includes 10-15 pictures of pathologic materials and neuroimages
- successful completion of the mandatory E-lab exercises.
- Documentation of attendance or remediation of the Clinic Day exercise.

**Course Materials**

- Lectures (in class and available as on-line streaming videos).
- Course syllabus.
- Ancillary materials (streaming videos, PowerPoint files, discussion board) available on Blackboard.

**Supplementary Texts**


Useful Websites or other on-line resources are included with the course syllabus.
Discipline: Pathophysiology – Dermatology Unit

Unit Director: Dr. Darius Mehregan

COURSE OBJECTIVE

At the completion of the course students should be able to:

- Understand the function and structure of the skin.
- Understand basic concepts and terminology in dermatology
- Classify skin lesions based on morphology.
- Recognize and be familiar with common inflammatory skin diseases.
- Recognize and be familiar with skin cancers and pigmented lesions.
- Understand the basic etiology and pathophysiology of common skin disorders.
- Understand basic dermatopharmacology, surgery and light/laser treatment options and their application to the management of common dermatoses seen in the primary care environment.
- Understand basic treatment strategies for multiple skin diseases.

Dermatology Text Book

- Highly Recommended: Course will closely follow text book

Lookingbill and Marks' Principles of Dermatology (PRINCIPLES OF DERMATOLOGY (LOOKINGBILL) (Paperback)
by James G. Marks Jr. MD (Author), Jeffrey J. Miller MD (Author)
COURSE OBJECTIVES

At the completion of this unit, students should be able to:

- Review the development and basic normal function and structure of bones, joints and connective tissues.
- Explain how to analyze synovial fluid and perform crystal analysis.
- Discuss the epidemiology, pathogenesis, clinical manifestations, diagnosis, and basic treatment of rheumatic diseases.
- Summarize the epidemiology, pathogenesis, clinical manifestations, diagnosis, and basic treatment of metabolic bone disorders.
- Describe the major bone and soft tissue tumors in terms of epidemiology, location, characteristic radiologic findings, pathologic features, and natural history.
- Interpret musculoskeletal radiographs / imaging studies, and recognize their utility in the diagnosis and treatment of musculoskeletal abnormalities.
- Discuss the surgical approach to various musculoskeletal disorders, including skeletal fractures.
- Explain the pharmacology of drugs used in the treatment of musculoskeletal diseases.
- Describe the pathogenesis of and characteristic clinicopathologic findings seen with various congenital and acquired disorders of bone and the extracellular matrix.
Discipline: Pathophysiology – Endocrine Unit

Unit Directors: Dr. Barbara Bosch and Dr. Julie Samantray

COURSE OBJECTIVE

The common disorders affecting the endocrine system will be highlighted through didactic lectures. Where pertinent, the clinical and pathologic lectures will be supplemented by pharmacology lectures, to provide a more comprehensive and integrative approach. In addition there will be three MD laboratory sessions, which will involve clinical problem-solving sessions with a focus on the more common clinical problems. These small group sessions will allow close interaction of members of the Clinical Endocrinology faculty and students.

At the end of the unit, the students should have an understanding of:

Clinical and pathologic understanding of the major regulatory mechanisms affecting the endocrine system and correlation of clinical disorders (hereditary and acquired) with altered anatomy and function

The integrative function of the hypothalamic-pituitary axis and the various functional and structural disorders that affect this system

Thyroid gland anatomy, function, structural and functional diseases and interpretation of thyroid function tests with clinico-pathologic correlations

Disorders of the female reproductive tract

Male hypogonadal disorders and interpretation of the functional tests

Physiological basis of clinical testing of major clinical disorders, including congenital diseases, of the adrenal glands

Endocrine (non-essential) causes of hypertension, including reno-vascular hypertension and the bases of the clinical diagnostic tests

Pathogenesis, clinico-pathologic features, and basic aspects of treatment and prevention of Diabetes mellitus and Obesity, two important multi-system disorders, with major socio-economic implications

Normal bone architecture, role of bone in calcium metabolism, and disorders of structure and function of bone, including metabolic bone disorders

Common disorders of calcium metabolism including diseases of the parathyroid gland with a combined clinical and pathologic presentation of the more important disorders Clinico-pathologic aspects of common disorders of the female genital tract. These include infectious disorders of the lower female genital tract with particular emphasis on human papilloma-virus infection and its relationship to preneoplastic and neoplastic disorders of the lower female genital tract. Clinico-pathologically important dysfunctional and neoplastic disorders of the upper female genital tract, including the uterus, fallopian tubes and ovaries, will be described. These include endometrial dysfunctional bleeding
disorders, benign endometrial tumors, discussion of endometrial hyperplasias and carcinomas, and myometrial tumors including leiomyomas and sarcomas. Disorders of the fallopian tubes to be described include salpingitis, and ectopic pregnancy. Classification of ovarian neoplasia including benign, borderline and malignant neoplasia with clinico-pathologic correlations will be described. A short section will include clinically important disorders of the placenta and trophoblastic disease. Another short section will be a discussion of endometriosis.

The pathophysiology of the more common disorders of the male genitourinary tract and to establish a link between these and clinical presentation and to emphasize the clinical significance of the pathologic classification, grading and staging of prostatic and testicular cancers

Working knowledge of the important surgical and pathological diseases of the breast, with emphasis on surgical anatomy and basic aspects of diagnostic testing and treatment.

Instruction is imparted by combination of didactic lectures, small group lab sessions, extensive handouts, and suggested readings.
Discipline: Pathophysiology – Renal/Urinary Tract Unit

Unit Directors: Dr. Madhumita Jena Mohanty and Dr. Janet Poulak

COURSE OBJECTIVE

The Pathophysiology-Renal/urinary tract unit provides students with an understanding of normal physiology and renal and urinary tract disorders through didactic lectures, seminars and an MD laboratory session. Pharmacology lectures will provide additional understanding of the kidney in pharmacotherapeutic applications. The seminars and MD laboratory sessions will correlate with lectures and these small group sessions will aid in integrating the various principles of pathology and basic and clinical sciences in a patient-oriented problem-solving approach. The seminars will be taught by faculty members of the Division of Nephrology and the MD laboratories will be taught by members of the division of Pathology. Didactic lectures will be given by faculty members from the division of nephrology, pathology, urology and pharmacology.

Course structure
Didactic lectures.
Seminars- required attendance.
Laboratory- required attendance.
Exam reviews and case studies.

At the end of the unit, students should have an understanding of:

- Renal and urinary tract disorders (acquired, congenital and hereditary) based on altered structure and/or function,

- Pathophysiologic mechanisms and natural histories of each of these disorders,

- Normal renal physiology and various disorders of body fluid, electrolyte and acid-based regulation including their cause(s), interrelations, perpetuating factors and the principles underlying appropriate therapeutic strategies,

- Syndromes of acute and chronic renal failure, uremia and end stage renal disease and their effects of the functions of the various organ-systems of the body, and thereby understand the principles for appropriate supportive and therapeutic measures,

- Physiologic basis for the pharmacologic actions of diuretics and thereby gain insight into both their various and appropriate therapeutic applications as well as attendant side effects.

Competency is judged by the successful passing of a 70-100 question multiple choice exam.

Competency in laboratory sessions (labs and small group patient problem solving) is judged by the ability to answer clinically based or pathologically based/problem solving questions in the exam.

Professionalism will be assessed by monitoring required attendance.
Discipline: Pathophysiology – Gastrointestinal

Unit Director: Dr. Barbara Bosch and Dr. Murray Ehrinpreis

COURSE OBJECTIVES

The student will acquire a knowledge and understanding of the pathology, pathogenesis and pathophysiology selected disease states of the gastrointestinal tract and related organs.

The students will apply the acquired knowledge of pathology and pathophysiology to begin to make decisions regarding the diagnosis, treatment, and prevention of diseases of the gastrointestinal and related organs.

Objectives

At the end of the unit, students will:

- Review normal gastrointestinal and hepatic, and pancreatic function and histology.
- Define and become acquainted with the major hepatic disease clinicopathologic syndromes.
- Summarize for each of the major gastrointestinal, hepatic, and pancreatic disease syndromes.

  The differential diagnosis.

  The major histopathologic features.

  The manner in which normal functions are altered by each of these syndromes.

  The clinical and laboratory features.

Required Reading

- Lecture Notes and Handouts
- Monograph: Jaundice – A Problem-Orientated Clinical Approach (included in handouts)
Translational Medicine, Evidence Based Practice
Dr. James Meza

The core concept of Translational Medicine is to maximize the benefits of science and research to improve the health of Americans. This includes a synthesis of basic science, clinical science, and social science.

This fundamental concept was described by Sackett, Haynes, et al in Clinical Epidemiology: a basic science for clinical medicine, Second Edition, Little Brown and Company, Boston, 1991. By applying the label A Basic Science for Clinical Medicine, Sackett, Haynes, et al demonstrate how to use research performed on a population and apply it to individual patient care. Loosely described and practiced in a multitude of ways, this has been referred to as “Evidence-based medicine.” Although their book was published a decade ago, it foreshadowed both the NIH’s concern to ground clinical practice of medicine in the basic sciences, but also to acknowledge the environment or context of care.

The Translational Medicine paradigm described by the National Institute of Health’s Translational Research Roadmap has been critiqued for stopping short of achieving the stated goal of improved health because “…super-structural factors like society, economy and culture play a determinant role in disease recognition, production and embodiment; [and] the medical encounter or relationship [is] recognized as a preferred site for the production of meaning about health and illness.” Thus, Translational Medicine can be viewed as a series of interrelated “social practices” that begins with basic science research, continues with clinical research, and extends through the clinical encounter into the world in which people make decisions pertaining to their health.

The purpose of the Translational Medicine, Evidence-based Practice Course is to highlight the interconnectedness of all of these activities and to help medical students gain an appreciation of how the doctor-patient relationship is affected by both the construction of medical knowledge as well as context of medical care. Translation Medicine and Evidence Based Practice emphasize that both perspectives affect the health of the patient. This is a longitudinal course with some unique content, but depends heavily upon making relationships between differing types of knowledge explicit.

The goal of this course is to introduce the concepts of Translation Medicine as defined by the NIH; teach basic research design, threats to validity, and analysis; teach and practice the basic skills of Clinical Epidemiology; and help students situate themselves within this network of social practices to be effective clinicians.

Learning Objectives for Longitudinal Curriculum:

Knowledge
1. Demonstrate an understanding of the ethics involved in subscribing to the principles of good clinical practice in research with human participants
2. Understand the importance of the scientific method to determine causation in health and sickness
3. Explore the “meaning response” (placebo) and its role in health and sickness
4. Possession of a working knowledge of seminal clinical research findings and their patient care applications

Skills
1. Demonstrate the ability to assess and critique research as it is reported in major medical journals, based on how data are derived
2. The ability to translate current clinical research into lay language for patients
3. The ability to assess on-line medical information and to assist patients and their families with these tools
4. The ability to highlight important clinical research questions, stemming from a presented case or patient interaction

Attitudes
1. Articulate sensitivity and awareness of issues related to potential conflicts of interest
2. An understanding of the need to engage in lifelong learning to stay abreast of relevant scientific advances
3. An appreciation for the role of uncertainty in clinical medicine
4. An appreciation of how the body of medical knowledge is built and advanced

Grading
Translational Medicine is a longitudinal pass/fail course; student assessment is based on a series of reading and BlackBoard assignments. In addition to BlackBoard assignments, second year students will be required to participate in small group discussions with a faculty facilitator. Small group assignments will be distributed by e-mail.

Failure to complete all BlackBoard assignments and participate in small groups discussions (second year students) will result in course failure.
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### TEAM HIPPOCRATES

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