2013 School of Medicine Academic Catalog

Meharry Medical College... Started by an Act of Kindness in 1876
School of Medicine

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Brenda R. Merritt, M.P.A., Assistant Dean, Student and Academic Affairs
Sharon D. Turner-Friley, M.S.W., Assistant Dean, Special Programs

Department Chairpersons

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Rahn K. Bailey, M.D., Psychiatry and Behavioral Sciences
Billy R. Ballard, D.D.S., M.D., Pathology, Anatomy and Cell Biology
Xylina D. Bean, M.D., Pediatrics
George A. Breaux, M.D., Professional and Medical Education
Clivel G. Charlton, Ph.D., Neuroscience and Pharmacology
Lemuel Leon Dent, M.D., Surgery
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Gwinnett Ladson, M.D., Interim Obstetrics and Gynecology
Hubert K. Rucker, Ph.D., Physiology
Duane Smoot, M.D., Internal Medicine
Fernando Villalta, Ph.D., Microbiology and Immunology
Roger J. Zoorob, M.D., M.P.H., Family and Community Medicine
Medical Education at Meharry Medical College

The School of Medicine is the oldest and largest of the three schools at Meharry, and admits 105 students per year. The Graduate Medical Education Program has 96 approved positions in the specialties of Internal Medicine, Family & Community Medicine, Preventive and Occupational Medicine, Obstetrics & Gynecology and Psychiatry. In addition, students from the School of Dentistry and the School of Graduate Studies and Research receive training from School of Medicine faculty.

The School has 13 departments: Biochemistry and Cancer Biology, Microbiology and Immunology, Neuroscience and Pharmacology, Professional and Medical Education, Physiology Family and Community Medicine, Internal Medicine, Obstetrics and Gynecology, Pathology, Pediatrics, Psychiatry and Behavioral Sciences, Radiology and Surgery. The School also is home to nationally recognized centers that provide research, training and patient care in women's health and HIV/AIDS. The faculty and students actively serve the community through many programs involving mentoring, counseling and volunteer work to inspire and direct elementary, high school and college students to careers in the health professions.

The index teaching facility for the School of Medicine is the Nashville General Hospital at Meharry. Major affiliate training sites include the Veterans Administration Medical Center and Middle Tennessee Medical Center in Murfreesboro, Tennessee; Blanchfield Army Community Hospital at Fort Campbell, Kentucky; and Matthew Walker Comprehensive Health Center in Nashville. Additional clinical affiliates include Centennial Medical Center, Baptist Medical Center, several community health clinics, and numerous private practice sites in rural and urban underserved areas in the surrounding middle Tennessee area.

Although a historically black medical college, Meharry’s student body reflects the diversity of the nation with representation from the Caucasian, Hispanic, Asian and Native American communities. The majority of Meharry's graduates keep the commitment of the principles upon which the College was founded by overwhelmingly choosing to practice in underserved urban and rural communities. Approximately 50 percent of the medical graduates select primary care specialties each year. Meharry continues to be proud of its leadership role in helping to ensure diversity in the nation’s health professions work force.

Mission of the School

The School of Medicine of Meharry Medical College pledges to offer a unique, quality, health science education to students of diverse origins, especially African Americans, with emphasis on addressing underserved populations. In addition, the School of Medicine will teach and monitor excellence in the delivery of primary or holistic care, provide a foundation for life-long learning, and conduct research relevant to the health of the disadvantaged.

EDUCATIONAL COMPETENCIES

The educational competencies of the medical education program leading to the M.D. degree emphasizes medical knowledge, patient care, interpersonal and communication skills, primary care, professionalism, systems-based practice, and practice-based learning and improvement. The candidate for the M.D. degree will be required to show competence in each of these areas, as follows:

Medical Knowledge
• Normal biological and physiological processes of cells and tissues
• Nature of various agent/mechanisms that produce changes to normal structure/function of cell.
• Mechanism of action of drugs and the metabolic and toxic effects
• Mechanisms of normal growth, development, and aging
• Concepts related to normal behavior and mental illness
• The scientific method and the ability to critically analyze data in the identification of disease/treatment
• Determinants of poor health and the psychosocial, economic, and cultural factors that contribute to the development of common maladies

Patient Care

• To obtain history and perform physical exam
• To order and interpret results of diagnostic tests and evaluative procedures
• To draw conclusions from history/physical exam to identify health problems
• To develop and implement appropriate treatment plan for health problems
• To formulate an appropriate differential diagnosis
• To access and evaluate the correctness of clinical decisions and efficacy of therapeutic interventions
• To adjust/modify treatment plan based on new information
• To perform technical procedures specific to a specialty
• Diagnose and participate in treatment of mental illness
• Apply use of drugs in patient care
• Apply psychosocial principles in delivery of health care
• Apply principles of preventive and health maintenance in the delivery of health care
• Interpret laboratory results in identifying diseases/health problems
• Recognize normal growth and development
• Apply principles of evidence-based medicine and critical data analyses to clinical decision making
• Recognize patients with life-threatening conditions
• Integrate basic sciences knowledge in the clinical assessments/management of patients
• The knowledge, skills, attitudes, and behaviors necessary to perform as generalist clinician.

Interpersonal and Communication Skills

• Effective interpersonal communication with patients, family, and members of the healthcare team.

Professionalism

• The ability to practice in a manner that reflects an outstanding and acceptance of ethical principles and other recognized standards of professional behavior which guide and characterize the actions of physicians
• Knowledge of ethical principles related to research involving human subjects and the responsibilities of the physician
• The ability to interact respectfully and effectively with patients, peers, and other healthcare workers from diverse cultural and religious backgrounds
• The ability to show compassion and respect for the dignity of patients and confidentiality in the delivery of health care

Systems-based Practice

• Demonstrate the ability to work effectively within the larger context and system of healthcare
• Demonstrate knowledge of the various aspects of health care delivery systems including, the social, economic, and political dimensions
• Apply principles of cost containment in the delivery of healthcare
• Work effectively with healthcare teams to enhance patient care and safety

Practice-based Learning and Improvement

• Continuing clinical proficiency and competency in medical practice through the utilization of acquired basic knowledge skills resulting from the process of lifelong learning
• The ability to use information technology to access online information, manage information, and to critically evaluate evidence from the scientific literature in decision making patient care

Strategic Goals for Educational Excellence

The School of Medicine’s strategic goals, which specifically address educational excellence include:

1. To provide a comprehensive medical educational program that meets the accreditation standards of the Liaison Committee on Medical Education.

2. To graduate students who are professionally competent, prepared to enter and complete graduate medical education qualified for licensure.

3. To provide a program in medical education rooted in the realities of emerging health care reform and the ethics of health care.

4. To enhance the quality of all accredited residency training programs and improve the educational experiences of our undergraduate matriculants, as well as the quality of resident participation in each of the required undergraduate clerkships.

5. To strengthen the existing biomedical sciences program leading to the Ph.D. degree and the combined M.D./Ph.D. degrees.

6. To sustain and enhance programs in continuing medical education.

7. To establish and maintain a caring, nurturing, and compassionate environment conducive to the successful personal and professional development of students.
8. To develop and implement model recruitment programs and academic enrichment services aimed at improving the quality of the accepted applicant pool and rates of retention and progression.

**Academic Program**

The School of Medicine is organized into 13 departments that administer the instructional, research and clinical activities of the School. The clinical departments include Family and Community Medicine, Internal Medicine, Obstetrics and Gynecology, Pathology, Pediatrics, Psychiatry and Behavioral Sciences, Radiology and Surgery. The basic science departments include Biochemistry and Cancer Biology, Microbiology and Immunology, Neuroscience and Pharmacology, Professional and Medical Education and Physiology.

The School of Medicine offers a four-year medical education program curriculum. The curriculum promotes a high degree of personal contact between faculty and students.

**The Curriculum**

The integrated curriculum leading to the M.D. degree is a four-year program that is divided into two phases. As previously stated, Phase I consists of the first two years, generally referred to as the Basic Sciences years. However, preceding the start of the first year, all entering first years are required to participate in a summer program called, Mini Academic Program for Success (MAPS). The overall objective of this program is to provide students with basic science information that is foundational for their overall success in medical school, especially during the first year. Students also receive instruction in the areas of bio-informatics, ethics, basic computer skills, test-taking and time management skills. The overall goal of the first year of Phase I is to provide students with a strong background in basic science knowledge, clinical and social skills that are essential for the practice of medicine in the twenty-first century. Individual, discipline-specific courses have been eliminated and replaced by block modules in which basic, clinical and social sciences are presented in an integrated manner to facilitate learning and to meet the overall objectives of the educational program. The overall goal of the second year of Phase I is to provide the opportunity for more in-depth learning of the basic sciences by organizing instruction around a series of organ systems.

During Phase II, the last two years, third year students are randomly assigned to six clinical rotations: internal medicine/neurology, obstetrics and gynecology, pediatrics, surgery, psychiatry and family medicine. The fourth year clinical rotations are divided into clerkships (selectives) and electives. Eight clinical rotations of four weeks each are required to complete the fourth year. The required rotations are internal medicine, radiology, fourth year ambulatory, capstone and electives that include four units (sixteen weeks).
Additionally, an Intersession course has been established. The intersession modules are three (3) one-week course blocks designed to revisit, reinforce, and integrate essential basic science concepts into the day-to-day practice of medicine.

Third and fourth year clinical clerkships are taken at the Alvin C. York Veterans Administration (VA) Medical Center, Murfreesboro, Tennessee, Nashville Veterans Administration (VA) Medical Center, Nashville General Hospital at Meharry, Vanderbilt University Medical Center, Centennial Medical Center, and Middle Tennessee Medical Center, East Tennessee State University and/or one of the affiliated sites approved by the department.

### Admissions

#### Applications

The School of Medicine at Meharry Medical College participates in the American Medical College Application Service (AMCAS). Applicants to Meharry Medical College must instruct AMCAS, Association of American Medical Colleges (AAMC), Section for Student Services, 2450 N. Street, N.W., Suite 201, Washington, D.C. 20037-1131, to forward their files to the Office of Admissions and Recruitment, Meharry Medical College, 1005 Dr. D.B. Todd, Jr. Blvd., Nashville, TN 37208-3599.

Upon receipt of the AMCAS application, persons who pass the preliminary screening are sent supplemental applications so that the evaluation process may continue. Applicants are required to submit the electronic supplemental application to the Office of Admissions and Recruitment by January 15 of the year in which admission is sought. All supplemental applications must be accompanied by an electronic processing fee of $65. This fee is not refundable, nor can it be credited toward tuition, if applicant is accepted.

The Admissions Committee reviews all applications. Candidates presenting credentials that do not meet the minimum requirements are so advised by the director of Admissions and Recruitment at the direction of the committee. Each candidate who presents the minimum requirements is evaluated competitively and is either accepted, placed on the alternate list, or rejected. The director of Admissions and Recruitment notifies the applicant of the committee's action.
Applicants accepted for matriculation are allowed three weeks to accept the invitation to attend Meharry Medical College and to submit a $300 deposit. This deposit is applied to the tuition of the matriculating student. If the student withdraws the application prior to April 15, two-thirds of the deposit ($200) is refunded.

The Admissions Committee will consider candidates with the following qualifications:

1. Bachelor's degree from an approved postsecondary school or its equivalent is recommended.

2. At least four full academic years of acceptable college credit earned in a college or institute of technology currently approved by an agency recognized by the Association of American Medical Colleges and by the Council on Medical Education of the American Medical Association. These agencies are:
   - North Central Association of Colleges and Secondary Schools
   - Middle States Association of Colleges and Secondary Schools
   - New England States Association of Colleges and Secondary Schools
   - Northwest Association of Colleges and Secondary Schools
   - Western Association of Colleges and Secondary Schools
   - Southern Association of Colleges and Secondary Schools

3. The satisfactory completion of three years of pre-medical education by December 15 deadline. Courses and credits include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>General Biology or Zoology with laboratory</td>
<td>8 semester hrs. - 12 quarter hrs.</td>
</tr>
<tr>
<td>Inorganic chemistry with qualitative analysis and laboratory</td>
<td>8 semester hrs. - 12 quarter hrs.</td>
</tr>
<tr>
<td>Organic Chemistry with laboratory</td>
<td>8 semester hrs. - 12 quarter hrs.</td>
</tr>
<tr>
<td>General Physics with laboratory</td>
<td>8 semester hrs. - 12 quarter hrs.</td>
</tr>
<tr>
<td>English Composition</td>
<td>6 semester hrs. - 9 quarter hrs.</td>
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</tbody>
</table>

Students who do not satisfactorily complete required college courses are not accepted.

"Satisfactory Completion" of required courses is interpreted by the Admissions Committee as an average grade of at least "C" in each subject field. "Satisfactory Completion" of three years of pre-medical education is interpreted as an average grade of at least "C" for the entire work of the three years. No student who has attained a general college average falling below "C" will be eligible for consideration.

It is recommended that the applicant supplement the basic requirements with courses in the humanities and the natural and social sciences designed to promote broad cultural development. It is recommended that elective courses be selected from such subjects as general botany, comparative anatomy, quantitative analysis, physical chemistry, mathematics, economics, history, psychology, sociology, foreign languages, philosophy, fine arts and logic. Highly specialized courses that occur in the undergraduate curriculum such as neuroanatomy, histology, human anatomy, bacteriology and physiology may not be substituted for courses generally required for entry to medical school.

Students are considered on a competitive basis in terms of scholarship and academic record, character, MCAT scores, general fitness to be a physician, and overall potential to serve the stated mission of the college. Additional materials necessary to activate the application process include favorable recommendations from pre-medical advisers or from two instructors in the natural sciences and one other faculty member.
Reapplications

Applicants who are not accepted in a given year, or any matriculated student who has officially withdrawn or been dismissed and not readmitted through the appeals process, must reapply if they wish to enter in a subsequent year. Such applicants must meet all requirements in force at the time of reapplication.

Applicants Requesting Transfer with Advanced Standing

Open slots in the School of Medicine for transfer into the second or third year classes are rare. To be eligible to apply for transfer into the second and/or third year, a student must be enrolled and in good academic standing at a Liaison Committee on Medical Education (LCME) accredited medical school. Transfers are considered on a case-by-case basis and normally granted only in cases of severe/personal hardship. Students who have been dismissed from another medical school for academic or disciplinary reasons, or who have withdrawn voluntarily are not encouraged to apply. The deadline for application for transfer is April 15 of the calendar year in which the student hopes to enter medical school. For additional information, contact the Office of Admissions.

Interviews

No applicant is accepted until interviewed by members of the Admissions Committee or its designees. Applicants should not present themselves for interviews until requested to do so by the Committee.

Early Decision Program

Meharry strongly sanctions participation in the Early Decision Program. Under this program, an applicant applies only to Meharry and is guaranteed prompt notification by October 1 of either acceptance or rejection. All required application materials and official transcripts must be received by AMCAS by August 1. If not accepted under the Early Decision Program, the applicant may be considered as a regular candidate and may then apply to other schools.

It is the applicant's responsibility to have a report of his/her performance on the MCAT submitted to the Office of Admissions and Recruitment. The test should be taken in the spring of the third year. Arrangements should be made by the applicant at the institution where he/she is presently enrolled. The MCAT must have been taken within the past three years.

The Medical Scholars Program

The Medical Scholars Program is offered jointly by the School of Medicine and School of Graduate Studies and Research. Participants have the option of pursuing a combined course of study leading to a dual M.D./Ph.D. degree. It is expected that all pre-medical education courses will be taken at an approved college in the United States.

Highly qualified applicants to the School of Medicine identified based on MCAT scores, grade-point averages, personal interviews, letters of recommendation and research experiences, are recruited as participants in the Medical Scholars Program.

The Medical Scholars Program is a program that students will follow during their matriculation in medical school. During the first regular year of medical study – usually the most arduous because of the heavy didactic course load and the difficult transition from undergraduate to medical school – Medical Scholars follow the standard medical curriculum, with special but limited additional assignments, whereby they are able to participate in special activities that do not require out-of-class preparation, such as graduate seminars in biomedical sciences. Beginning
with the summer between the first and second year and during the three full years thereafter, students will work closely with faculty research preceptors – either clinical or basic scientists – on research projects and assignments. It is expected that students in this program publish the results of their research on peer-reviewed journals.

BS/MD Program

In order to increase the number of culturally competent African-American physicians serving the medically underserved population as well as to help alleviate health-care disparities, Meharry Medical College established the Bachelor of Science/Doctor of Medicine [BS/MD].

The program begins in the summer following the freshmen year at a Historically Black College or University [HBCU] and will continue during the summer of each year of college. Each level consists of a six-week summer enrichment program with courses sequenced to provide a preview of the most difficult courses in the upcoming year. Participants will receive conditional acceptance into Meharry’s School of Medicine upon successful completion of the program.

Through linkages with seven HBCUs [Alabama A & M, Fisk, Grambling, Jackson State, Hampton, Southern, and Tennessee State University], students who matriculated into these universities majoring in the Biological Sciences or Chemistry and who maintained a 3.25 GPA throughout their first year are invited to participate in the Summer Enrichment Program at Meharry Medical College. These students are selected by the Site Coordinators [pre-med advisors] at each university based on the coordinator’s personal knowledge of the students as well as the students’ potential to succeed in the program as evidenced by above-average SAT or ACT scores and strong academic performance at the undergraduate level.

Students are provided with student mentors from Meharry to assist with their acclimation and orientation. Courses usually taught are Pre-Calculus, Cell Biology, Organic Chemistry, Physics, Computer Literacy, Medical Terminology, and English. Rising fourth year students participate in the MCAT Preparation Course

Dual Degree Programs

Meharry's first dual degree program, the Fisk-Meharry Joint Program in Biomedical Sciences (JPBS), was established in 1992. Participation in the (JPBS) means joint admission to the undergraduate school and Meharry Medical College. This program is designed for talented young men and women who desire to become physicians, dentists, or researchers in the biomedical sciences. JPBS scholars follow a prescribed program of study and are expected to maintain high academic standards throughout their tenure in the program. The program involves three years of study at the undergraduate school, successful completion of the fourth year (first year at Meharry) and satisfactory completion of the requirements for the baccalaureate degree from the undergraduate school, in either biology or chemistry. Normal progress dictates that M.D. or D.D.S. degree requirements will be completed at Meharry during the next three years. Thus, both the bachelor's degree and the professional degree requirements can be completed in seven years. The time to complete the Ph.D. or M.D./Ph.D. will vary.

Dual Degree Programs have been established at Albany State College, Tennessee State University and the following Historically Black United Methodist Schools: Bennett College, Clark Atlanta University, Claflin College, Dillard University, Hutson-Tillston University, Paine College, Philander Smith College, Rust College, and Wiley College. The colleges and universities operate their programs similar to the Fisk-Meharry Joint Program in Biomedical Sciences. Students interested in the opportunity to participate in this kind of program should contact one of the undergraduate institutions listed for information.
Technical Standards for Admission

Medical education requires that the accumulation of scientific knowledge be accompanied by the simultaneous acquisition of skills and professional attitudes and behavior. Medical school faculties have a responsibility to society to matriculate and graduate the best possible physicians. Thus, admission to medical school is offered to those who present the highest qualifications for the study and practice of medicine. Technical standards presented in this document are prerequisite for admission to and graduation from the School of Medicine at Meharry Medical College. All courses in the curriculum are required in order to develop the essential skills required to become a competent physician.

Graduates of medical schools must have the knowledge and skills to function in a broad variety of clinical situations and to render a wide spectrum of patient care. The School of Medicine at Meharry Medical College acknowledges Section 504 of the 1973 Vocational Rehabilitation Act and PL 11-336, the Americans with Disabilities Act (ADA) 1993, but ascertains that certain minimum technical standards must be present in prospective candidates.

A candidate for the M.D. degree must have aptitude, abilities and skills in six areas: observation, communication, motor, conceptual, integrative and quantitative, and behavioral and social. Technological compensation can be made for some handicaps in these areas, but a candidate should be able to perform in a reasonably independent manner, without assistance. The use of a trained intermediary means that a candidate's judgment must be mediated by someone else's power of selection and observation. Therefore, third parties cannot be used to assist students in accomplishing curricular requirements in the six skill areas specified.

**Observation:** The candidate must be able to observe demonstrations and participate in experiments in the basic sciences including, but not limited to, physiologic and pharmacologic demonstrations in animals, microbiologic cultures and microscopic studies of micro-organisms and tissues in normal and pathologic states. A candidate must be able to observe a patient accurately at a distance and close at hand. Observation requires not only the use of the sense of vision, but other sensory modalities as well. It is enhanced, for example by the sense of smell.

**Communication:** A candidate should be able to speak, to hear and observe patients in order to elicit information; describe changes in mood, activity and posture; and perceive nonverbal communications. A candidate must be able to communicate effectively and with sensitivity toward patients. Communication includes not only speech, but also reading and writing. The candidate must be able to communicate effectively and efficiently in oral and written form with all members of the health care team.

**Motor Coordination and Function:** Candidates should have sufficient motor function to elicit information from patients by palpation, auscultation, percussion and other diagnostic maneuvers. A candidate should be able to perform basic laboratory tests (urinalysis, CBC, etc.), carry out diagnostic procedures (proctoscopy, paracentesis, etc.) and read EKGs and X-rays. A candidate should be able to execute motor movements reasonably required to provide general care and emergency treatment to patients. Examples of emergency treatment reasonably required of physicians are cardiopulmonary resuscitation, the administration of intravenous medication, application of pressure to stop bleeding, opening of obstructed airways, suturing of simple wounds and performance of simple obstetrical maneuvers. Such actions require coordination of both gross and fine muscular movements, equilibrium and functional use of the senses of touch and vision.

**Intellectual/Conceptual, Integrative and Quantitative Abilities:** These abilities include measurement, calculation, problem reasoning, analysis and synthesis. Problem solving...
and the critical skill demanded of physicians require all of these intellectual abilities. In addition, the candidate should be able to comprehend three-dimensional relationships and to understand the spatial relations of structures.

**Behavioral and Social Attributes:** Candidates must possess the emotional health required for full use of their intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities attendant to the diagnosis and care of patients and the development of mature, sensitive and effective relationships with patients. Candidates must be able to tolerate physically taxing workloads and to function effectively when stressed. They must be able to adapt to changing environments, to display flexibility and to learn to function in the face of uncertainties inherent in the clinical problems of many patients. Empathy, integrity, concern for others, interpersonal skills, interest and motivation are all personal qualities that should be assessed during the admission and education processes.

Candidates for the M.D. degree must have somatic sensation and the functional use of the senses of vision and hearing. Candidate's diagnostic skills will also be lessened without the functional use of the senses of equilibrium, smell or taste. Additionally, they must have sufficient exteroceptive sense (touch, pain and temperature), sufficient proprioceptive sense (position, pressure, movement, stereognosis and vibratory) and sufficient motor function to permit them to carry out the activities described in the section above. They must be able to consistently, quickly and accurately integrate all information received by whatever sense(s) employed and they must have the intellectual ability to learn, integrate, analyze and synthesize data.

The Meharry Medical College School of Medicine will consider for admission any applicant who demonstrates the ability to perform or to learn to perform the skills listed in this document. Students will be judged not only on their scholastic accomplishments, but also on their physical and emotional capacities to meet the full requirements of the school's curriculum and to graduate as skilled and effective practitioners of medicine. The following technical requirements apply:

1. The candidate is able to observe demonstrations and participate in experiments in the basic sciences.
2. The candidate is able to analyze, synthesize, extrapolate, solve problems and reach diagnostic and therapeutic judgments.
3. The candidate has sufficient use of the senses of vision and hearing and the somatic sensation necessary to perform a physical examination and perform palpation, auscultation and percussion.
4. The candidate can reasonably relate to patients and establish sensitive, professional relationships with them.
5. The candidate can communicate the results of an examination to the patient and to colleagues with accuracy, clarity and efficiency.
6. The candidate can learn and perform routine laboratory tests and diagnostic procedures.
7. The candidate can perform with precise, quick and appropriate actions in emergency situations.
8. The candidate displays good judgment in the assessment and treatment of patients.
9. The candidate possesses the perseverance, diligence and consistency to complete the medical school curriculum and to enter the independent practice of medicine.
10. The candidate is able to accept criticism and respond with the appropriate modification of behavior.
Academic Regulations

Requirements for M.D. Degree

A student is deemed eligible for the M.D. degree after satisfactorily completing all graduation requirements outlined in the Student Academic Policies and Procedures Manual, School of Medicine, including the successful completion of the prescribed course work and attainment of passing scores on the USMLE Step 1, Step 2 Clinical Knowledge and Step 2 Clinical Skills.

An affirmative vote of the executive faculty of the School of Medicine with concurrence of the dean and confirmation by the Board of Trustees is required for candidacy for the M.D. degree. Students who do not complete graduation requirements prior to commencement will receive diplomas when all requirements are completed, at alternative dates approved by the Board of Trustees.

Examination and Grades

Examinations will be scheduled by each Department and coordinated centrally by the Department of Professional and Medical Education for the preclinical years, and on a departmental basis during the clinical years.

The definitive evaluation of the student’s work is expressed by A, B+, B, C+, C or F which appears on his/her official transcript and on the report from Banner given to each student at the end of each semester. All clinical departments are required to provide a departmental narrative evaluation (electronic and hard copy) along with a letter grade for all clinical students. All grades are to be submitted to Banner within five (5) working days following receipt of subject board scores by the department (for more information, see Student Academic Policies and Procedures Manual for the School of Medicine).

Change of Grade

A change of grade can be made only upon recommendation of the departmental chairperson with approval of the Interim Associate Dean for Student/Academic Affairs. A recommendation for change of grade must include appropriate reasons for the change request.

Grades for Off Campus Courses

Students taking courses away from Meharry for remediation or for selective/electives in the case of clinical courses will be governed by the grading system (scale) of that institution or course. In the case of preclinical courses, students who pass a course taken away from the institution must also pass the respective subject board of that discipline at the level required by the Meharry department. Thus, if the student passes the away course and the NBME subject board at Meharry, the final grade received will be that awarded by the Meharry department.

Subject Boards

In the preclinical years, all students must score a minimum of 65 (or a higher passing score as determined by the department, and if approved by the Curriculum Committee) on each NBME Subject Board offered in the preclinical years. Student eligibility to sit for subject boards in the preclinical years is determined by the department. Students failing the internal department examination component of a course, while passing the subject board, still fail the course. Successful passage of subject boards is not required for the
completion of preclinical course requirements, but is required to sit for the USMLE Step 1 examination.

In the clinical years, all students must score a minimum of 60 (or a higher passing score as determined by the department, and if approved by the Curriculum Committee) on each NBME Subject Board offered in the clinical years. Successful passage of all subject boards is required for satisfactory completion of all MS3 clerkship requirements. Students failing to obtain a passing score on the clinical subject board will be given one (1) additional opportunity to take the examination after remediation. The type of remediation is at the discretion of individual departments. All incomplete grades must be removed prior to sitting for any of the USMLE Step examinations.

**Leave of Absence**

A leave of absence is an interruption of the normal course of study requested by a student, requiring prior written approval by the dean or his/her designee. A student’s leave of absence shall not extend beyond one calendar year. The official date of leave shall not antedate the date of the student’s request. An official leave of absence form must be processed and can be obtained from the Office of Student/Academic Affairs.

A leave of absence may be granted upon receipt of a written request for reasons of illness, personal and/or family exigencies, financial straits, emotional states and other similar types of situations. The Interim Associate Dean for Student/Academic Affairs may require documentation to accompany a request. If the situation is appropriate, the Interim Associate Dean for Student/Academic Affairs may place a student on an Administrative Leave of Absence. A student must request in writing termination of Leave of Absence for reinstatement to active status. Extensions may be requested not to exceed one additional year. Failure of such requests will result in automatic dismissal or administrative withdrawal.

**Academic Standards and Policies**

All students are required to meet the current academic standards found in the Student Academic Policies and Procedures Manual, School of Medicine. The manual is provided to all matriculating students. Additional copies can be obtained in the Office of Student/Academic Affairs located in the Harold D. West Basic Sciences Center or viewed on Blackboard.

**Student Evaluation and Promotion**

The Student Evaluation and Promotion Committee reviews student progress and makes recommendations regarding student advancement (for more information, see Student Academic Policies and Procedures Manual of the School of Medicine).

If at the completion of one year’s curriculum, a student has received a passing grade in all courses, the student will be promoted to the next academic level. If a student receives a grade of F in one or more courses which have a total number of credit hours less than or equal to 11 credit hours within a given academic year, the student will be required to repeat the course(s) failed in either summer or the academic year immediately following receipt of failure.

Any student receiving a grade of F in courses totaling greater than or equal to 12 credit hours within the academic year will be required to repeat the courses failed in the academic year following receipt of the failures, or will be required to repeat the entire academic year based upon the assessment of the student’s academic record and the recommendation of the Committee. During the academic year following, the student will be put on academic probation; he or she will be counseled and reevaluated at the end of that academic year(additional information regarding this policy may be found in the Student Academic Policies and Procedures Manual of the School
of Medicine).

**Academic Standing**

A student at Meharry Medical College is in good academic standing if he/she is properly registered with the Office of Admissions and Records and is unencumbered by pending action of the Office of Dean Pursuant to recommendations from the Student Evaluation and Promotion Committee arising from academic or other difficulties.

**Satisfactory Academic Progress**

In order to remain in good standing, a student enrolled in the School of Medicine must maintain a cumulative grade point average of a minimum of 2.0 (C average). Any student who fails to maintain a cumulative academic average established by the School to be considered in good academic standing will automatically be placed on probation.

No student may remain on probationary academic status any longer than one (1) semester and must be counseled when any probation status is established by the Interim Associate Dean for Student/Academic Affairs. No student will be allowed to remain on probation for more than two (2) semesters throughout his or her entire matriculation without being considered for dismissal by the Student Evaluation and Promotion Committee.

Depending on whether or not the student is permitted to enroll in the next regular semester or a subsequent semester, the time permitted for achieving the minimal cumulative grade point average or good academic standing will be limited to one academic year. Any exception to this policy must be justifiable and approved by the Student Evaluation and Promotion Committee and dean of the School of Medicine with stated reasons for such exception. The academic policies established by the School of Medicine for evaluation of a student’s academic progress and standing, along with the judgment of the dean as to the student’s aptitude and suitability for continued enrollment, will be weighed in arriving at a policy exception decision.

**Dean’s List**

This list is compiled by the Student Evaluation and Promotion Committee for approval by the dean. A student shall be eligible for the Dean’s List at the end of each academic year if he/she uniformly does outstanding work. Students achieving a weighted grade point average between 3.50 and 4.00 for a given year’s curriculum shall be eligible for the Dean’s List for that year. Decelerated students are not eligible for the Dean's List until they have completed the first year courses.

**Honors**

The Student Evaluation and Promotions Committee will choose students to be recommended for graduation with honors based on their entire scholastic record. A minimum cumulative GPA of 3.5 is required for consideration for graduation with honors. The dean reviews the recommendations and determines the recipients of honors, prizes and awards. The Committee’s action shall be based upon (a) the rules of the College, (b) the regulations of the School of Medicine, and (c) the conditions set forth by the donors of prizes.

The criteria for graduating with Honors are as follows: Highest

- Honors 3.945-4.00
- High Honors 3.745-3.944
- Honors 3.445-3.744

14
Withdrawal from a Course

When a student wishes to withdraw from a course, he/she shall obtain the appropriate form from the Assistant Dean in the Office of Student/Academic Affairs.

A student will not be permitted to withdraw from a course except for unusual or extenuating circumstances beyond the student’s control, which make it impractical or impossible to complete the course. The Interim Associate Dean for Student/Academic Affairs may require documentation to accompany a request for withdrawal. Poor academic performance alone does not constitute sufficient basis for withdrawal from a course.

Withdrawal from the College

A student may withdraw from Meharry Medical College after filing an official Withdrawal Form with the Office of Student/Academic Affairs, and then having the form properly executed, by the Office of Records. The student’s total performance in all courses will be evaluated at the time of the requested withdrawal in accordance with the policies of the School. Based on the review of the student's performance, he/she may be dropped from the College for poor academic performance. Grades for completed courses shall be recorded on the official transcript. Should the student seek to return to Meharry Medical College following withdrawal, a formal application must be filed with the Office of Enrollment Management and the regular application process followed.

Student Dismissal

The School of Medicine reserves the right to dismiss a student at any time for violation of the student conduct policy, inadequate academic performance and upon determination that a student is, for any reason, unfit to continue as a student or as a potential practicing physician. When a student is recommended for dismissal by action of the Student Evaluation and Promotion Committee, the formal Procedures for Review and Appeal of Academic Dismissal Action policy should be followed.

Request for Transfer from the School of Medicine

All activities regarding transfers must occur through the Office of Student/Academic Affairs. Requests for letters of recommendation required for a transfer must be made in writing with a clear statement of the reasons for considering the transfer. Students must have a conference with the senior associate dean for student/academic affairs. Students must present written certification by the Treasurer's Office that no outstanding indebtedness to the College exists, before any letters of recommendation will be forwarded. Letters of recommendation will reflect the academic standing of the student only. Failure to comply with the requirements for transfer will result in non-concurrence with the transfer.

School of Medicine Academic Calendar 2013-2014

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>M2 Registration – Summer Research Eligible</td>
<td>Mon., June 3, 2013</td>
</tr>
<tr>
<td>M3 Orientation</td>
<td>Mon. 24 – Fri, June 28, 2013</td>
</tr>
<tr>
<td>First Year Orientation/Registration</td>
<td>Mon., June 24 – Thurs., June 27, 2013</td>
</tr>
<tr>
<td>M4 Registration</td>
<td>Fri., June 21, 2013 (after subject boards)</td>
</tr>
<tr>
<td>M3 Registration</td>
<td>Fri., June 28, 2013</td>
</tr>
<tr>
<td>MAPS Classes Begin</td>
<td>Fri., June 28, 2013</td>
</tr>
<tr>
<td>Event</td>
<td>Date</td>
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<tr>
<td>M3 Rotations Begin</td>
<td>Mon., July 1, 2013</td>
</tr>
<tr>
<td>4th of July Holiday</td>
<td>Thurs., July 4, 2013</td>
</tr>
<tr>
<td>MAPS Classes End</td>
<td>Fri., August 2, 2013</td>
</tr>
<tr>
<td>M2 Registration – Not Summer Research Eligible</td>
<td>Mon., August 5, 2013</td>
</tr>
<tr>
<td>M2 Classes Begin</td>
<td>Tues., August 6, 2013</td>
</tr>
<tr>
<td>First Year Classes Resume</td>
<td>Mon., August 5, 2013</td>
</tr>
<tr>
<td>White Coat Ceremony</td>
<td>Fri., August 16, 2013</td>
</tr>
<tr>
<td>Labor Day Holiday</td>
<td>Mon., September 2, 2013</td>
</tr>
<tr>
<td>Constitution Day</td>
<td>Tue., September 17, 2013</td>
</tr>
<tr>
<td>Convocation</td>
<td>Mon., October 14, 2013</td>
</tr>
<tr>
<td>Thanksgiving Holiday</td>
<td>Thurs., Nov. 28 – Fri., Nov. 29, 2013</td>
</tr>
<tr>
<td>Fall semester ends</td>
<td>Fri., December 20, 2013</td>
</tr>
<tr>
<td>Grades Due in Banner/Registrar's Office</td>
<td>Fri., January 3, 2014</td>
</tr>
<tr>
<td>Spring Classes Begin</td>
<td>Thurs., January 2, 2014</td>
</tr>
<tr>
<td>ML King Remembrance Program</td>
<td>Fri., January 17, 2014</td>
</tr>
<tr>
<td>ML King, Jr. Day Holiday</td>
<td>Mon., January 20, 2014</td>
</tr>
<tr>
<td>Student Research Day</td>
<td>Wed., March 12, 2014</td>
</tr>
<tr>
<td>MATCH Day</td>
<td>Fri., March 21, 2014</td>
</tr>
<tr>
<td>Spring Break (M4)</td>
<td>Mon., March 17 – Fri., March 21, 2014</td>
</tr>
<tr>
<td>Good Friday – Meharry Holiday</td>
<td>Fri., April 18, 2014</td>
</tr>
<tr>
<td>Spring Break (M3)</td>
<td>Mon., March 31, 2014 April 1, 2013</td>
</tr>
<tr>
<td>M2 Classes/Exams End</td>
<td>Fri., April 25, 2014</td>
</tr>
<tr>
<td>M2 USMLE, Step 1 Kaplan Review Begins</td>
<td>Sat., - Wed., May 28, 2014</td>
</tr>
<tr>
<td>M2 Class Grades Due</td>
<td>Fri., May 9, 2014</td>
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<tr>
<td>M1 Classes/Exams End</td>
<td>Fri., May 23, 2014</td>
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<tr>
<td>M2 USMLE, Step 1 Kaplan Review Ends</td>
<td>Fri., May 23, 2014</td>
</tr>
<tr>
<td>Commencement</td>
<td>Sat., May 17, 2014</td>
</tr>
<tr>
<td>Memorial Day Holiday</td>
<td>Mon., May 26, 2014</td>
</tr>
<tr>
<td>M1 Grades Due</td>
<td>Fri., May 23, 2014</td>
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<tr>
<td>M3 Rotations End</td>
<td>Fri., June 20, 2014</td>
</tr>
<tr>
<td>M1 Summer Session (Remediations)</td>
<td>Tue, June 9 – Fri., July 25, 2014</td>
</tr>
<tr>
<td>M2 Summer Session (Remediations)</td>
<td>Tues., May 27 – Fri., June 27, 2014</td>
</tr>
</tbody>
</table>

**Calendar Summary By Class**

**M1 (including MAPS)**

**M2 Summer Research Eligible**
Mon., June 3, 2013 – Fri., May 23, 2014 (includes Kaplan)

**M2 Not Summer Research Eligible**
Mon., August 5, 2013 – Fri., May 23, 2014 (includes Kaplan)

**M3**
Mon., July 1, 2013 – Fri., June 20, 2014

**M4 Registration Only**
Fri., June 21, 2013 (after subject boards)

**M4 Classes Begin**
Mon., July 1, 2013 – Fri., May 16, 2014 (includes Kaplan)
Financial Information

Tuition and Fees

Tuition for the School of Medicine for the academic year 2013-2014 is $40,695.

Tuition and fees are set annually by the Board of Trustees and are subject to review and change without notice.

The tuition and fees by year are as indicated below:

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
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<tbody>
<tr>
<td>Tuition</td>
<td>$40,695</td>
<td>$40,695</td>
<td>$40,695</td>
<td>$40,695</td>
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<tr>
<td>Total fees</td>
<td>$  7,478</td>
<td>$  6,720</td>
<td>$  6,497</td>
<td>$  5,529</td>
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<tr>
<td>Total Tuition and Fees</td>
<td>$48,173</td>
<td>$47,415</td>
<td>$47,192</td>
<td>$46,224</td>
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</table>

COURSE DESCRIPTIONS

BASIC SCIENCES:
DEPARTMENT OF PROFESSIONAL AND MEDICAL EDUCATION Mini

Academic Program for Success (MAPS)

COURSE DESCRIPTIONS

ASM.D. 230 – Mini Academic Program for Success (MAPS) is an intensive six-week academic program, required for all incoming first year medical students. MAPS is designed to provide first year medical students with a head start on first year basic science core courses of the medical school curriculum. The main goals of the MAPS Program are to: (1) introduce incoming medical students to the rigors of professional school in a supportive but realistic environment; (2) identify potential academic challenges, strengths and weaknesses of students prior to the beginning of the Fall semester and (3) design individualized intervention strategies based on student performance on examinations, with the aim of maximizing student retention and progression in medical school. (6 credit hours)

The courses offered during the MAPS Program include:

Biochemistry/Cell Biology (BCB/MCBG): The BCB mini course continues into the Fall semester as the Molecular Cell Biology and Genetics (MCBG) course. The main objective of the mini course is to introduce students to basic concepts in medical biochemistry, human genetics, molecular cell biology and basic histology, relevant to human life processes. The medical biochemistry and genetics topics will be presented with clinical correlations, and they will provide students with excellent integrative tools to comprehend the inheritance patterns, and the molecular and biochemical basis of human diseases. The basic histology and cell biology
component of BCB, will focus not only on microscopic structure but also on structure-function relationships at the cell and tissue levels, and it will incorporate many important fundamental concepts in anatomy, embryology, neurobiology, pathology, and biochemistry.

Introduction to Clinical Anatomy (ICA/GAE): The ICA mini course is intended to provide students with a fundamental knowledge and understanding of the basic concepts of human anatomical sciences and radiology, in preparation for the more advanced Gross Anatomy and Embryology (GAE) course offered in the Fall semester.

ASM.D. 311 Principles & Practice of Research (PPR). This course will introduce students to a clear understanding of the scientific method. Activities include assembly of a portfolio of materials related to types of research, applications for research opportunities as well as items demonstrating understanding research as applied to clinical medicine. During this course, students will identify a mentor with whom they will work on their hypothesis-driven research activity during the MSRE course. Types of research projects may include laboratory or basic research, clinical research, population-based research or community-based participatory research. In order to successfully complete this course, students must complete or update the CITI online training. (1 credit hour)

Division of Clinical Skills and Competency

ASM.D. 335 – Principles & Practice of Medicine (PPM) – IA - This course, offered in the fall of the first year, concentrates on appreciation of the patient-physician encounter (styles of communication, cultural competency, patient confidentiality); development of scientific reasoning and critical thinking skills including the interpretation of biostatistics and epidemiological findings, understanding of health policy and the organization of health care systems and clinical research in the United States; and an introduction to clinical ethics and end-of-life issues. A particular highlight of the course is opportunities for all students to shadow physicians in clinical settings. Approximately half of all scheduled sessions utilize a small group format. Additional interactive sessions address medicine and societal issues relating to basic science coursework occurring parallel to the PPM course. Students are required to submit journals describing their clinical experiences and to prepare a number of papers and reports demonstrating the development of their scientific reasoning skills. (7 credit hours)

ASM.D. 355 - Principles & Practices of Medicine IB - This course is offered during the Spring semester of the first year and builds on the clinical observations made by the students during their earlier clinical shadowing experiences. Having observed physicians taking histories and performing physical examinations, the students now begin to develop their own skills in these two key areas. Peer partners, standardized patients and videotaping sessions are used to help the students perfect their interviewing and examination skills. The physical examination skills learned during this semester will parallel the Integrated Neuroscience curriculum being offered simultaneously. Additionally, interactive sessions addressing medicine and societal issues relating to basic science coursework will continue to be offered in the spring as in the fall. (5 credit hours)

ASM.D. 417 and 418 – Principles & Practice of Medicine IIA and IIB. This course is presented in an interdisciplinary format correlated with the organ system presentations of each of the second-year disciplines. The purpose of this course is to assist students in integrating the basic and clinical sciences and to provide a framework for students to learn the interviewing and physical examination skills necessary for competent patient care. This two-semester course also serves as an introduction to the concepts involved in clinical problem solving and consists of physical diagnosis, case-based teaching and clinical correlations. (415 – 7 credit hours) (416 – 7 credit hours) Prerequisites: ASM.D. 335 and 340 - Principles & Practice of Medicine - IA and IB

ASM.D. 443 – Medical Student Research Experience (MSRE) – Through this course each student undertakes a mentored and evaluated individualized hypothesis-driven research project for a minimum of eight weeks. Projects may be selected based on the student’s own preference and may range from basic science laboratory (“bench science”) clinical research, population-based
research or community-based participatory research. Students will be supervised directly by an experienced research investigator, at any institution, pending approval. Students will present a description of their activities in a structured abstract along with a poster presentation. Prerequisite: ASMD 311 Principles and Practices of Research; and completion of the CITI online training. (1 credit hour)

**Division of Integrated Didactics**

**ANAT 322 - Gross Anatomy & Embryology** – Gross anatomy and embryology is offered in the fall semester of the first year of the curriculum and is a course that teaches the gross structure and developmental sequences of the human body. Students working in small groups dissect a human cadaver. Didactic and clinically oriented lectures are supplemented by projections and radiological presentations. Clinical correlations are made through periodic demonstrations and/or didactic lectures by clinicians. (10 credit hours)

**BICH 320 - Molecular Cell Biology & Genetics (MCBG I)** – This course covers fundamental cellular, biochemical, genetic and molecular concepts that are foundational to the practice of medicine. **MCBG I** is offered during the fall semester to first year medical students and covers eukaryotic cell structure and function, cell cycle progression and regulation, and macromolecular synthesis including protein, RNA and DNA. Other aspects of DNA metabolism including DNA mutations and repair are also covered. Important mechanisms that mediate gene expression and regulation, including hormone-mediated signal transduction, secondary messengers, transcriptional regulation, and post-translation modifications are also taught. Basic biochemical concepts and principles in carbohydrate, protein, and lipid structure and function, enzyme kinetics, inhibition, and regulation of activity, are presented during the summer to serve as a good foundation for intermediary metabolism, which forms a major portion of the course. Topics presented in intermediary metabolism, include in-depth analysis and regulation of carbohydrate, lipid, amino acid, heme, purine, and pyrimidine biosynthesis and degradation. Students are also introduced to biochemical and modern molecular biology techniques including polymerase chain reaction (PCR), Western, Northern, Southern and Western blot analyses, and their applications in the molecular diagnosis of diseases. When necessary, clinical correlations are cited and explained in most of the topics taught in the course (9 credit hours).

**ASM.D. 330 - Principles of Immunology Host Defense** - This course is offered in the Spring semester of the first year of the curriculum. The goal of this course is to help students achieve an integrated and correlated understanding of the immune system and its role in host response and human disease. The course encompasses a presentation of the basic immune response and the principal mechanisms involved in disease with an in-depth presentation of the pathology associated with immunologic diseases. The course has two components. The basic immunology component focuses on the processes in the innate humoral and cellular immune systems and the lymphoid tissues involved in those responses. The clinical immunology component focuses on how the immune system is involved in many areas of clinical medicine including allergy and hypersensitivity, tumor resistance, transplantation, autoimmune diseases, primary and secondary immunodeficiencies, blood transfusions, infectious diseases and immune modulation. The information is presented in a combination of didactic lectures, laboratory exercises, small-group sessions, patient-oriented problem solving exercises, on-line clinical case evaluations and clinical correlations. (4 credit hours) **BICH 320 - Molecular Cell Biology & Genetics (MCBG I)**
ASM.D. 345 - Foundations in Human Disease & Treatment - This course is offered to first year medical students during the Spring semester and includes modules in neuroscience pathology and pharmacology. The goal of this course is to provide students with a foundation for understanding the cellular basis of the physiologic and biologic manifestations of disease. A focus on fundamental principles related to disease mechanisms and treatment sets the stage for coverage of specific disease processes presented in the organ system modules. Moreover, the neuroscience component of the course provides students with the fundamental principles of excitable cells, synapses, as well as the structure, function and contractile properties of muscle. (3 credit hours) Prerequisite: BICH 320 - Molecular Cell Biology and Genetics I

ASM.D. 350 - Principles of Infectious Diseases - This course is offered in the Spring semester of the first year of the medical school curriculum. The goal of this course is to help students achieve an integrated and correlated understanding of the principles of infectious diseases involving bacterial, fungal, parasitic and viral pathogens including current knowledge regarding the epidemiology, virulence mechanisms, clinical symptoms and pathology, diagnosis, treatment and prevention of specific infectious agents. This course is divided into three sections: (1) microbial structure, function, physiology, genetics and molecular biology; (2) bacterial and fungal pathogens; and (3) parasitic and viral agents of human disease. The approach is to present the pathogens as a survey of infectious agents but within the context of the major organ systems/tissues affected. This approach should facilitate the student's study in the organ-based courses. Information in the course is presented in a combination of didactic lectures, laboratories, small-group sessions, patient-oriented problem solving exercises and clinical correlations. Prerequisite: (4 credit hours) BICH 320 - Molecular Cell Biology and Genetics I; ASM.D. 330 - Principles of Immunology and Host Defense

PHYS 320 - Integrated Neuroscience - The Integrated Neuroscience course will help students achieve an integrated and correlated understanding of nervous system structure, function, dysfunction and therapeutics. The course will be taught in the following blocks: (1) anatomy of the nervous system, meninges and vasculature; (2) sensory systems; (3) motor system; and (4) higher function. Each block will be composed of instruction in biochemistry, neurology, pathology, anatomy and cell biology, pharmacology, physiology, psychiatry and behavioral sciences. (10 credit hours) Pre-requisite: ASM.D. 345, Foundations in Human Disease and Treatment

ASM.D. 420 – Comprehensive Medical Review Program (CMRP) - The Comprehensive Medical Review Program is an extended review of the basic sciences to prepare students to take the United States Medical Licensure Examination (USMLE) Step 1. The course provides participants with concentrated reinforcement and review, as well as access to several question banks with items similar to those seen on USMLE Step 1. Students are encouraged to utilize these items on a daily basis following pre-assessment. A battery of discipline-specific comprehensive exams and practice tests are also used to profile each participant's performance. Individual counseling is affected by utilizing the performance profiles (measured outcomes), enabling feedback and direction for self-study and by providing information to the skills specialist for test-taking mechanics. This customized approach assures the individual adequate time for preparation to eliminate cognitive weaknesses while providing a mechanism to measure proficiency in each area to guide certification progression, graduation and ultimately licensure. (14 credit hours)

ASM.D. 430 – Hematopoietic/Lymphoreticular Systems - This course is offered to second year medical students during the fall semester and builds on the knowledge obtained from the first year in understanding the normal immune system, structures and response to infectious diseases of the hematopoietic and lymphoreticular systems. This course is designed to assist students in gaining an understanding of the physiologic processes, pathologic changes, as well as the effects of both pharmacological and other clinical interventions utilized to restore tissues and the organ at the molecular, cellular and macroscopic levels, to their optimal functional conditions. In addition, upon completion of this module students will gain an understanding of the associated behavioral changes in normal and disease states as it affects the hematopoietic and lymphoreticular systems and the body as a whole. The course presents detailed microscopic and macroscopic structures of
the hematopoietic and lymphoreticular systems in health, disease, and the result of pharmacological and other clinical interventions. (3 credit hours) Prerequisites: ANAT 322, ASM.D. 230, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 435 - Musculoskeletal/Skin - This course is offered in the Fall semester of the second year and builds on the knowledge obtained from the first year in understanding the normal musculoskeletal, skin and related structures in health and in disease states. This course will assist students in understanding the physiological processes, the pathological changes and effects of both pharmacological and other clinical interventions to restore tissues and the organ at the molecular, cellular and macroscopic levels to their optimum functional conditions. In addition, students will gain an understanding of the associated behavioral changes in normal and disease states as it affects musculoskeletal, skin and related connective tissues, as well as the body as a whole. The course presents detailed microscopic and macroscopic structures of the musculoskeletal, skin and related connective tissue in health, disease, and the result of pharmacological and other clinical interventions as they relate to musculoskeletal, skin and related connective tissues. (3 credit hours) Prerequisites: ANAT 320, ASM.D. 230, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 440 - Cardiovascular System - This course is offered to second year medical students during the Fall semester and begins to explore how alterations in structure (anatomy) and function (physiology) of the cardiovascular system disrupt the functions of the human body. It provides the foundation by which students begin to understand the cellular basis for the physiologic and biologic manifestations of diseases of the cardiovascular system and the adaptations that the body makes to the changes produced by disease processes. Integral in this course is the understanding of how the basic anatomy and physiology of the cardiovascular system relates to the adaptation and the pathogenesis of cardiovascular diseases. Topics related to blood vessels, pericardium, myocardium and endocardium serve as the basis for the course. A variety of instructional modalities including laboratory exercises, small group discussions, team learning exercises and individual assignments using clinical cases and problem sets are utilized to emphasize and integrate conceptual information. (5 credit hours) Prerequisites: ANAT 322, ASM.D. 230, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 445 - Pulmonary System - This course is offered to second year medical students during the Fall semester and is designed to assist students in building on the foundation of knowledge of the structure and function of organs and tissues of the human body learned during the first year. This course will focus on detailed microscopic and macroscopic structures of the pulmonary system in health, disease, and as a result of pharmacological and other clinical interventions. Comprehensive and coherent didactic information presented in lecture format, small group discussions, case presentations and self-directed learning assignments on the pulmonary system will be utilized to emphasize and integrate conceptual information. (4 credit hours) Prerequisites: ANAT 322, ASM.D. 230, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 450 - Digestive System - This course is offered in the Fall semester of the second year and examines the physiology, pathology and pharmacological treatment of gastrointestinal and hepatobiliary function. Clinical presentations and small group discussions of patient-based cases assist the student in the correlation of basic and clinical information. The goal of this course is to assist students in understanding the structure and function of the gastrointestinal and hepatobiliary systems in health and disease. The course covers normal and abnormal processes of the gastrointestinal system, the principles of therapeutics in the gastrointestinal system, and the gender, ethnic, and behavioral considerations affecting disease treatment and prevention, including psychosocial, cultural, occupational, and environmental factors. (4 credit hours) Prerequisites: ANAT 322, ASM.D. 230, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 465 - Growth, Development & Aging - This course is offered during the spring semester of the second year. The goal is to integrate biological, social and psychological
aspects of progression through the lifespan with particular emphasis on pediatric and geriatric populations. The course utilizes multiple formats including lectures, panels, small group activities, and semi-structured interviews in community settings. The ethics component focuses on particular issues related to pediatric and geriatric populations, as well as loss, grief, death and dying. (3 credit hours) Prerequisites: ANAT 322, ASM.D. 230, 320, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 470 - Urinary System – This course is offered in the Fall semester of the second year and is designed to assist students in understanding the physiological processes, pathological changes and the effects of both pharmacological and other clinical interventions to restore tissues and organs at the molecular, cellular and macroscopic levels, to their optimum functional conditions. The course will allow students to build on knowledge obtained from the first year in understanding the normal immune system, its structures and response to infectious diseases of the renal/urinary system. Behavioral changes in normal and disease states as it affects the renal/urinary system and the body as a whole are an integral component of this course. (4 credit hours) Prerequisites: ANAT 322, ASM.D. 230, 320, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 475 - Great Syndromes - This course is taken in the Spring semester of the second year after students have been exposed to all organ systems. The student learns the complex dimensions of clinical judgment, including: complexities of interactions, involvement of multiple organ systems, examples of major syndromes and diseases, life stages, patient's perspective, and incorporation of basic science knowledge. Predicated on students’ knowledge of the basic science organ systems, this course acquaints students with the complexities and integrative dimensions of clinical judgment. Via clinical cases involving selected syndromes, this course will explore content topics including aging, critical thinking, ethics, professionalism, treatment principles and situational awareness. 6 Credit hours) Prerequisites: ANAT 322, ASM.D. 230, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 480 – Psychiatry/Behavioral Sciences - This course is taken in the Spring semester of the second year and is designed to enhance students’ understanding of the bio-psychosocial correlates of illnesses and to assist them in implementing intervention strategies directed toward improved outcomes in holistic patient management. Case studies and case presentations are introduced for the purpose of clinical correlations and problem-solving approaches. Specific topics covered in this course include adult transitions, adjustment disorders, human sexuality, the study of symptoms differentiation and classification, psychoactive substance use disorders, factitious disorders and malingering. Ethical issues related to the patient’s care and forensic psychiatry is also given coverage. (3 credit hours) Prerequisites: ANAT 322, ASM.D. 330, 320, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 485 – Integrated Endocrine Metabolism & Reproduction- This course is offered to second year medical students during the Spring semester and examines the physiology, microanatomy, pathology, microbiology, and pharmacology of endocrine and reproductive function and dysfunction. Clinical team learning presentations and small group discussions of patient-based cases assist the students in correlating basic and clinical information. The goal of this course is to assist students in understanding the structure and function of the various components of the endocrine and reproductive systems in health and disease. The course covers the normal and abnormal processes associated with the endocrine and reproductive systems, the principles of therapeutics associated with endocrine and reproductive function and dysfunction and the gender, ethnic, and behavioral considerations affecting disease treatment and prevention, including psychosocial, cultural, occupational, and environmental factors associated with endocrine and reproductive function and dysfunction. (9 credit hours) Prerequisites: ANAT 322, ASM.D. 230, 330, 340, 345, 350, BICH 320, 330, PHYS 320

ASM.D. 50101, ASM.D.50201, ASM.D.50301 – Intersessions I – III - The Intersession courses
are offered between clinical rotations during various times throughout the third year. Students revisit basic science concepts, including topics such as: normal and adapted cell, cell injury and cell death, inflammation and repair, pharmacokinetics/pharmacodynamics, genetic testing, principles of neoplasia, breast cancer, prostate cancer, gastrointestinal diseases, gynecologic oncology, lymphatic and hematopoietic diseases chemotherapy, diagnostic imaging, diseases of immunity, hemodynamic, infectious disease, and environmental and nutritional diseases. In addition, other hot and emerging topics discussed include, medical ethics, bioterrorism, medical errors and physician stress management. (2 credit hours each)

ASM.D. 602 – Capstone - The Clinical Management (Capstone) course is a required four-week module in the fourth year. This multidisciplinary course includes lectures and discussions of: preparation for the residency experience: ACGME rules, USMLE Step 3, fellowships, GME rules and regulations, policies on probation and termination, managing stress and balancing career and family; role of interns in patient care: rounds, pre-rounds, sign-out notes, discharge planning, avoiding prescription and other medical errors; fiscal management: financial planning, buying versus renting a home, investment strategies, managing debt and billing for services; legal medicine; ethics, clinical equipoise and patient advocacy; death and dying, palliative care, pain management, hospice, delivering bad news; clinical research and research during residency; evidence-based medicine, how to read a paper, biostatistics; and miscellaneous special topics – cancer, geriatrics, global medicine and the future of health care reform. (9 credit hours)

CLINICAL COURSE DESCRIPTIONS

DEPARTMENT OF FAMILY AND COMMUNITY MEDICINE

Objectives

The department’s goal is to educate and train physicians in the clinical specialty of family medicine and to encourage all physicians to provide high quality, continuous, comprehensive primary care. The Department provides training with family physicians teaching the basic clinical and academic skills necessary to provide continuing, comprehensive health care unrestricted by age, gender, organ system and location of service.

COURSE DESCRIPTIONS

FAM.D. 502 - Family Medicine Clerkship - A one-on-one preceptor experience at one of the many approved office practices and health centers located in Tennessee. This clerkship focuses on ambulatory services in a comprehensive, continuing health care program, preferably utilizing a family health care team. Students are under the supervision of a physician preceptor as part of a family health care team. They are expected to share in decision-making and in planning for patients, their families and communities. (9 credit hours)

FAM.D. 600 Fourth Year Ambulatory Family Medicine: This rotation is a four-week, community- based clinical experience designed to expose fourth year medical students to community-based experiences in underserved communities across the state of Tennessee with a focus on the primary care specialties. This clinical experience occurs under the tutelage of primary care physicians who have well rounded clinical practices. In addition to theoretical and clinical community-based exposure, this rotation is designed to positively influence medical students to consider locating their own clinical practice in a rural or urban underserved area (9 credit hours) Prerequisite FAM.D. 502 – Family Medicine Clerkship

ELECTIVE COURSES
FAM.D. 602 - Family Medicine Research Elective – This elective is designed to introduce students to clinical research opportunities in Family Medicine. The Department has many ongoing clinical research opportunities requiring the participation of a multidisciplinary team. The student, with supervision of the principal investigator, will participate as a member of the multidisciplinary team on design, data and outcomes of clinical research. (9 credit hours)

FAM.D. 604 - Family Medicine Fourth Year Elective – This elective experience fully utilizes the abundance of ambulatory family and community health care settings available throughout Tennessee. The objective is to progressively and systematically build upon the skills and knowledge previously gained during the first and second years and the clinical clerkship in Family Medicine. Preventive medicine, psychology and social disciplines are structured into the family health team focus. In addition to clinical experiences, students are provided with the opportunity for community involvement so that they gain more insight into the characteristics of the community and the impact environment has on the health of the population served. Our numerous preceptors permit exposure to the broad spectrum of diverse health care practice models that exist in rural and urban areas, in an effort to inculcate an adequate operational concept of health and illness management. (9 credit hours)

DEPARTMENT OF INTERNAL MEDICINE

MEDI 501 – Internal Medicine Clerkship – This is a 12-week core clerkship during which third-year medical students spend four weeks at various clinical sites affiliated with the Department of Internal Medicine. The students spend four weeks on each of the following services: general internal medicine service of the Nashville General Hospital, in-patient service at the Murfreesboro VA Medical Center and at one of numerous rural or urban ambulatory sites. A balanced program of clinical work is designed for students, with emphasis placed upon perfecting the techniques of history taking, physical examination, case presentation and the functional utilization and correlation of basic laboratory and clinical findings. Students participate in rounds regularly with residents and attending physicians. In these settings, the student assumes a role as an accepted and valuable member of the health team and thus plays a major role in the daily evaluation and treatment of patients. Students take night call with their team and attend weekly medical grand rounds, journal club and morbidity/mortality conferences. Daily lectures and conferences in selected subspecialty areas are given to supplement the educational program. Neurology is incorporated into Internal Medicine clerkship and consists of two weeks. This component teaches the principles and skills underlying the recognition and management of the neurological diseases a general medical practitioner is most likely to encounter in practice. Additional neurology exposure occurs on the consultative neurology service and diagnostic testing at Nashville General Hospital and surrounding hospitals in the Nashville/Murfreesboro region. (27 credit hours)

MEDI 600 – MS 4 Ambulatory Internal Medicine (9 credit hours)

MEDI 603 – MS 4 Internal Medicine - This is a four-week clerkship for fourth year medical student, which may be served at either Nashville General Hospital at Meharry or the Alvin C. York VA Medical Center in Murfreesboro, Tennessee. Students are expected to take call and are taught by both medical faculty and residents of internal medicine. The purpose of this clerkship is to acquaint fourth year medical students with the increased level of patient care responsibility required during the first year of graduate training in internal medicine, especially those of day-to-day care and acquisition of the skills for coordinating the ancillary services each patient requires. Strong emphasis is placed on further development of bedside clinical skills, i.e., history taking, physical examination and communication skills. This course fulfills the fourth year internal medicine requirement. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship
MEDI 617 - Intensive Care Unit Clerkship - This is a four-week clerkship for fourth year medical students, which may be served at either Nashville General Hospital at Meharry or at Alvin C. York VA Medical Center. The primary goal for this clerkship is to enable fourth-year medical students to participate in all aspects of the care and management of critically ill patients. Students will become familiar with detailed aspects of respiratory failure and hemodynamic compromise, as well as the integrated management of these patients. Students may be assigned call duty and will be taught by medical faculty and residents. This course fulfills the fourth year internal medicine requirement. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship.

ELECTIVE COURSES

MEDI 620 – Cardiology Elective – This course is designed to familiarize fourth year medical students with current trends in cardiac physiology and pathophysiology that are utilized in the diagnosis, treatment and management of patients with a wide range of cardiac diseases. Students are taught to integrate basic science knowledge in the clinical management and problem solving process. Seminars and small group sessions are used to teach students how to interpret electrocardiograms (EKGs) and use other diagnostic modalities to evaluate and treat patients with cardiac diseases. Students must attend the Cardiology Clinic twice weekly and participate in consult service activities. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship

MEDI 621 – Internal Medicine Elective – This elective (sub-internship) is designed to prepare students to assume the responsibilities of the first year of graduate training in internal medicine, especially those of day-to-day care on the general internal medicine in-patient service. The course also provides opportunities for students to acquire the skills needed to coordinate the ancillary services each patient requires. Strong emphasis is placed on further development of bedside clinical skills, i.e., history taking, physical examination and oral and written communication skills. Sub-interns will be responsible for a small number of patients ranging from three to six as assigned by senior residents. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship

MEDI – 622 – Neurology Elective - The general neurology rotation gives the student an opportunity to experience the full breadth of general neurology not seen during the Internal Medicine core clerkship. Student will participate in the inpatient neurology consultation service and in neurology clinics at Nashville General Hospital. In addition, students will participate in neuropsychologic diagnostic services (EEG and EMG) and will attend the Memory Disorders Clinic. Specialized instruction will be provided for epilepsy, stroke, migraine treatment and peripheral nerve disorders. This course cannot be substituted for PSYC 601. (9 credit hours)

MEDI 623 – Dermatology Elective – The elective in dermatology is designed to familiarize fourth year students with a variety of epidermal and dermal responses, as well as the characteristics of basic dermatologic disorders, thereby becoming knowledgeable about how to make decisions concerning diagnosis and management of most common skin problems. Students may be assigned to a Nashville General Hospital clinic or to an affiliated private practice. (9 credit hours)

MEDI 624 – Gastroenterology Elective – A major goal for this elective is to teach both the clinical and academic content of gastroenterology (GI). Students may be assigned to a clinic or at a private practice office. They are expected to become familiar with the scope of gastroenterology and its application to the general care of patients. Students are expected to read assigned topics on gastroenterology and then discuss those topics with the attending physician. They must attend all GI procedures, consultative rounds, informal discussions, conferences and visit other hospitals with their attending physician. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship.
MEDI 625 – Nephrology – This elective introduces students to clinical problems in nephrology. Included in this elective is the evaluation of patients with glomerular and interstitial renal failure and end-stage renal disease (ESRD). Students are expected to participate in daily rounds and must attend the weekly outpatient clinic in the hospital and at the Dialysis Clinic located on campus. They are assigned readings on topics for nephrology. All teaching conferences involving nephrology must be attended by students for this elective. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship

MEDI 626 - Pulmonary Diseases - This is an introductory course to acquaint students with the important principles and practices of pulmonary medicine. It is structured to develop competency in making initial evaluations of patients with pulmonary disease; and how to use chest x-rays in evaluating pulmonary problems. In this course, students should become competent in making initial evaluations of patients with pulmonary disease. They will also become familiar with using chest x-rays as an evaluative tool for pulmonary problems and the appropriate treatment of major respiratory diseases. They must also participate in all relevant activities, including daily rounds and clinical conferences. They will also learn the basic principles for treating major respiratory diseases. Students will also learn how to manage patients with acute medical illnesses in the Intensive Care Unit ("ICU"). (9 credit hours) Prerequisite: MEDI 501 - Internal Medicine Clerkship.

MEDI 627 - Infectious Diseases – Fourth year - students are introduced to the most common problems of infectious diseases in adolescents and adults and how to manage these problems. The environment for this course includes the emergency room, private practice and the hospital. Students are expected to perform workups on selected patients and then make presentations to the Infectious Disease faculty. They are expected to read cases and/or other assigned literature on infectious diseases and make reports on their findings. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship

MEDI 628 - Hematology/Oncology - This elective provides exposure to community hematology/oncology problems in an inpatient and outpatient setting. This course is designed to develop skills for evaluating, diagnosing and treating patients with anemia, solid tumors, common hematologic problems and other oncologic emergencies. Students are assigned various readings to develop an understanding of the natural history of the different kinds of malignancies. They are expected to learn how to interpret peripheral smears as well as bone marrow aspirations through review sessions with the attending physicians. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship

MEDI 629 - Endocrinology/Metabolism - This elective will help the student to develop an understanding of basic pathophysiology of endocrine diseases with emphasis on clinical endocrinology, including diabetes mellitus (I & II) and inpatient/outpatient management. It also acquaints the student with home glucose monitoring, insulin therapy and acute/chronic complications of the disease. Students will become familiar with thyroid disorders, pituitary disorders, calcium metabolism, electrolyte disorders and adrenal disease. This elective may be served in the clinic, the hospital or in a physician's private office or a combination of sites. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship

MEDI 630 - Medical Oncology - During this elective, students will learn how to manage common oncology problems such as pain, infection/sepsis/opportunistic disease and emergencies associated with cancer. They will be exposed to the interdisciplinary aspect of oncology and the cooperation necessary between the chemotherapist, radiation therapist and the surgical oncologist. Students will observe and participate in treating cancer patients as it evolves through interactive discussions between patient/family and oncologist and through the use of case studies. Students are expected to attend and participate in weekly tumor boards and breast cancer seminars. Special reading assignments may be made by the attending physician. (9 credit
hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship

MEDI 631 - Emergency Medicine - This course is structured to develop an appreciation of the role of emergency physicians and the emergency department in a medical system and to develop clinical skills appropriate to this type of setting. It provides training in how to quickly develop good rapport with patients to elicit information needed for history-taking. This course is intended to help the student to quickly assess the situation and respond rapidly to diagnose, treat and manage the patient. Students are expected to develop broad-based general medical and surgical skills as well. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship or SURG 501- Surgery Clerkship.

MEDI 635 - General Medicine - This elective provides an overview of what to expect for the practice of general internal medicine. Students are expected to develop an appreciation of what is required of an attending physician when caring for inpatients as a member of an intern/resident team. Students are expected to perform essentially the same duties of an intern but with half the workload. They will participate in the management of assigned patients under the supervision of a resident. The sub-intern must attend conferences and attend rounds with the team as well as take call. A faculty preceptor is assigned to the student for regular supervision. (9 credit hours) Prerequisite: MEDI 501 – Internal Medicine Clerkship

MEDI 637 – Rehabilitation Medicine Elective - Students who elect to take this course will work with York VA Medical Center in Murfreesboro, TN. They will become familiar with the physical consultation services, including trauma (brain injury, spinal cord injury and multiple fractures), neurology, orthopedics and other diagnostic categories. They will have the opportunity to observe physical and occupational therapists, speech pathologists and audiologists individually or in a team approach regarding patient care. Students will also learn how to perform a functional examination and participate on the consult, outpatient clinic and electromyogram (EMG) services. (9 credit hours) Prerequisites: MEDI 501- Internal Medicine and SURG –501 – Surgery Clerkships

MEDI 640 – Geriatrics - This course provides the student with the didactic and clinical care experiences associated with the aging patient. It focuses on the interdisciplinary approach for assessment and management of elderly patients from those who are still active, functional and ambulatory, as well as those who are considered frail. Students are introduced to settings that include multiple components of the healthcare continuum such as ambulatory clinics, day hospitals, acute inpatient hospitalization, long-term care facilities and rehabilitation. Students work with health professionals from a variety of disciplines to develop skills in evaluating and treating medical problems unique to the elderly. (9 credit hours) Prerequisites: MEDI 501- Internal Medicine

MEDI 643 - Medical Research - This elective in clinical research guides the student in activities, which may ultimately produce a manuscript that is suitable for submission to a peer review journal. Students participate in chart and/or literature reviews and assist in designing and conducting clinical research studies. If the manuscript is suitable, it may be submitted in abstract form to a scientific meeting for possible presentation. This elective may take longer than the normal 4-week period based on the project selected, and is prearranged between a clinical researcher in the Department of Internal Medicine and the student. (9 credit hours)

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

COURSE DESCRIPTION

OBGY 501 - Obstetrics and Gynecology Clerkship - This course is designed to help medical students become familiar with many of the usual and unusual gynecological and obstetrical problems that will confront them, especially during their postgraduate training periods and to encourage them to cultivate the initiative and sober judgment necessary in the mastery of these
problems. To achieve this objective, students are assigned to smaller groups, which rotate
alternately on the obstetrical or gynecological service while gaining specific exposure to various
aspects of the field. Students are required to attend weekly grand rounds, daily bedside rounds,
weekly clinical pathology conferences and perinatal mortality conferences. Emphasis is placed
on history-taking, physical examination, case presentation, diagnosis, clinical management, testing
and laboratory. Audiovisuals, student-controlled seminars, lectures and clinical demonstrations are
used liberally. (18 credit hours)

OBYG 600 – Obstetrics & Gynecology Ambulatory - The ambulatory course in obstetrics and
gynecology is to reinforce competence in medical history and physical examination taking into
account the female patient’s social, demographic, ethical, and culturally significant factors. This
outpatient course is structured to provide ample opportunity for the senior student to apply learned
measures to assess and manage the female patients concerns. The student will develop strength in
evaluating and managing common obstetrical and gynecological problems, the menstrual cycle,
family planning, and sexual health care needs. The student will be introduced to a range of patients
and become familiar with female health care from preconception through menopause. The goal is
for the student to identify and evaluate patient concerns and to develop strength in management
and treatment plans for health maintenance. (9 credit hours) Prerequisite: OB/GYN 501 –
Obstetrics and Gynecology Clerkship. Preceptor – Clerkship Director

OBYG 602 - Obstetrics and Gynecology Electives - Four-week elective courses in obstetrics
and gynecology are offered each rotation during the academic year. The course is open to
students in the fourth year. The primary objective of the elective is to stimulate interested
students, at an early stage of their career, in the field of obstetrics and gynecology. Each student is
responsible for reviewing the anatomy and physiology of the female reproductive system. The
fourth year student choosing an elective in OB/GYN is expected to gain advanced experience
closely akin to an internship (sub-internship). External electives require approval by the
departmental chairperson or clerkship director. (9 credit hours) Prerequisite: OB/GYN 501 -
Obstetrics and Gynecology Clerkship

OBYG 603 - Reproductive Endocrinology and Infertility Elective - Over a four week period,
students engaged in this elective will be expected to gain a thorough fundamental knowledge of
reproductive endocrinology, infertility and related topics as outlined in the Education Objectives of
the Association of Professors of Gynecology and Obstetrics (APGO). These objectives include an
understanding of normal and abnormal puberty, amenorrhea, hirsutism and virilization, normal
and abnormal uterine bleeding, dysmenorrhea, climacteric, infertility and premenstrual syndrome.
(9 credit hours) Prerequisite: OB/GYN 501 - Obstetrics and Gynecology Clerkship

OBYG 604 – Research Elective – This is an eight to 12 week elective, depending on the area of
interest and allows the student to implement a research project with a faculty member from the
Department of OB/GYN. Students will be trained in the basic skills necessary to do research,
including observation, development of hypotheses, experimental design, statistical analysis,
interpretation of results, drawing of conclusions and writing of a research report. The student is
required to present data at student research day or a national meeting. (9 credit hours)

OBYG 605 - Maternal and Fetal Medicine - This four-week maternal and fetal medicine (MFM)
elective will consist of the following: office ultrasound, dating and fetal anatomy survey, exposure
to fetal malformations, biophysical profile, prenatal care, amniocentesis, perinatal consultation,
genetic consultation and periconceptual counseling. Students will participate in night calls and
obstetrical procedures, including episiotomy, instrumental delivery, caesarean sections and
crecence procedures. Students will learn when to refer high-risk obstetrical patients to MFM, to
perform obstetrical pelvic exams and to offer prenatal care. Additionally, students will analyze and
interpret fetal surveillance, such as monitoring ante partum and intrapartum. Students will
participate in all didactic sessions for obstetrics, as well as participate in high risk obstetrical
conferences, perinatal/neonatal conferences, weekly case presentations and other departmental
continuing medical education programs related to obstetrics. Students will choose a clinical topic
for research, conduct a literature review and submit a paper suitable for publication. (9 credit
hours) Prerequisite: OB/GYN 501 - Obstetrics and Gynecology Clerkship

OBGY 606 – Gynecological Surgery Elective - This is a four week course which has an emphasis on gynecological surgical procedures. Over a four week period the student will be assigned to various operative procedures two to three days per week and to gynecological clinic. The students will participate in all pre-operative inpatient and outpatient rounds and preparation. The student will be expected to follow the patient throughout the rotation. The student will be introduced to operative approach and methods to include open and laparoscopic procedures. The student is expected to participate in all pre-operative conferences, morbidity and mortality rounds, and pathology presentations. It is expected that the student will be introduced to a wide range of gynecological surgical procedures for both benign and malignant conditions. (9 credit hours) Prerequisite: OB/GYN 501 – Obstetrics and Gynecology Clerkship. Preceptor – Clerkship Director

DEPARTMENT OF PATHOLOGY, ANATOMY AND CELL BIOLOGY

Objectives

The department’s objective is to imbue students with the desire to maintain a state-of-the-art proficiency in pathology, professional responsibility, and a life-long commitment to the expanding reservoir of scientific ideas. Objectives are designed to further enhance the collective ability to deliver superior undergraduate and graduate medical education, and to effectuate the best possible patient care and other service-related responsibilities.

Elective Courses

Electives are designed and offered with the aim of broadening the pathobiological and pathophysiological knowledge sphere of both undergraduate and postgraduate students in the health sciences. Courses are offered by prearrangement, with full participation of all members of the faculty.

COURSE DESCRIPTIONS

PATH 602 - Surgical Pathology Elective - This course is specifically designed for third- and fourth-year medical students and focuses on introducing students to a hands-on approach to histopathology. Students participate in the daily review of gross specimens and in the diagnostic process of microscopic descriptions and pathologic diagnoses. (9 credit hours)

ELECTIVE COURSES

ANAT 602 – Gross Anatomy Elective- Specialized sessions arranged for advanced study or research in specific anatomical areas utilizing small group activities, which facilitate teacher-student interaction. (9 credit hours)

DEPARTMENT OF PEDIATRICS

Objectives

The general objective of the Department of Pediatrics is to equip students with a broad insight into the principles and problems of pediatrics. The aim is also to imbue students with a propensity and readiness for the application of basic science principles in the analysis and study of the clinical problems of pediatric patients.
COURSE DESCRIPTIONS

PEDI 501 - Pediatric Clerkship - During a period of eight weeks, students are assigned to clinical duties in the inpatient and outpatient settings. Students obtain patients on rotation as they are admitted to the Nashville General Hospital or Vanderbilt Children's Hospital. They also see patients in the Meharry Pediatric Clinic, Matthew Walker Comprehensive Health Center and private office settings. Students have the opportunity to perform Clinical Laboratory Improvement Amendments (CLIA) waivered laboratory tests in the work-up of their cases. To ensure greater depth and more insight into the clinical problems presented by their cases, students are required to engage in certain unique supplementary diagnosis and therapeutic exercises in completing the study of the problems that the patient presents. Apart from formal lectures by the faculty on common pediatric problems, small group conferences, preferably at the bedside, are held and at that time the student's work and understanding of the patient's disease processes are discussed and evaluated. Demonstrations of the techniques of examining infants and children are given and supervised practice opportunities are provided so that each student achieves some degree of proficiency. In addition, students are given computerized cases to complete weekly. A simulated skills lab is available and allows for procedural techniques to be perfected. Attendance is required at ward rounds, ambulatory clinics and the weekly pediatric grand rounds, pediatric x-ray conference, case (morbidity and mortality) conferences and Clinical Pathology Conference (CPC). (18 credit hours)

PEDI 600 – Fourth Year Ambulatory Pediatric Elective is a four week elective with a primary focus for the student to gain advance fundamental clinical knowledge and skills to increase diagnostic and managerial acumen in children from birth through adolescents; to further the knowledge of students concerning community resources and their integration in the management of the patient holistically. Prerequisite: Pediatrics 501 preferably (9 credits hours)

ELECTIVE COURSES

Electives in pediatrics are available to fourth year medical students. These electives can be tailor-made to suit students desiring to increase expertise in ambulatory, primary care, endocrine, newborn intensive care unit (NICU) or research. The student is expected to participate in all didactic lectures and conferences as available.

PEDI 602 – Ambulatory Adolescent/Health Department- is a four week elective offering the opportunity to advance expertise in gynecological skills in the adolescent age group. The elective is spent in Meharry adolescent clinic and Health Department Sexually Transmitted Infection clinic. This elective focuses on increasing skills in sexual history taking and physical exam skills, as well as improving diagnostic acumen and management of adolescents with GYN issues and STI. Prerequisite: Pediatrics 501 (9 credit hours)

PEDI 605- Pediatric Research -This is an elective offered to a student to expose them to research in the pediatric age group. Students are expected to complete a CITI program for research and participate in a chart and /or literature review. If time permits, they must write a proposal that is to be IRB approved. Depending on the length of the research project, faculty PI will obtain IRB approval. The student submits a required research paper/abstract suitable for oral or poster presentation. This elective is prearranged between a clinical faculty researcher in Pediatrics with the student. (9 credit hours).

PEDI 606- Pediatric Neonatal ICU-This course provides students the clinical care experience in the neonatal intensive care unit. Student must submit personal goals and objectives for this course. The course focuses on didactics and clinical management of premature infants and infants with congenital anomalies. Students learn interdisciplinary approach to the neonate and discern growth, development, and complications due to prematurity. Students are introduced to ventilator management and other multiple components of health care of the premature infant. Students are expected to give an oral presentation of a clinical patient and provide an evidence based
management critique and recommendation of that patient. **Prerequisite PEDI 501. (9 credit hours).**

**PEDI 608- Pediatric Dermatology** - This is an elective course to delve more deeply into diseases of the skin and recognize the skin manifestations of chronic illnesses in the pediatric age group. Didactic and clinical exposure is offered in the private practice office. Students are expected to provide personal goals and objectives to the career purpose of taking this course and must provide an oral presentation of a clinical case providing evidence based management critique and recommendations of case. **(9 credit hours).**

### DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL SCIENCES

**Objectives**

The teaching of clinical psychiatry has two major goals: 1) imparting knowledge about psychiatric conditions and 2) cultivating sensitivity to the patient as an individual whose unique attitude toward self and the physician often play an important part in the physician’s ability to diagnose and treat the patient. This sensitivity characterizes the good physician in every specialty of medicine.

### COURSE DESCRIPTIONS

**PSYC 501 - Psychiatry Clerkship** – The third year clerkship period is four weeks during which students spend ten weekdays at one of several different inpatient psychiatric facilities learning about acute psychiatric patients and their management. The facilities include the VA Medical Center - Murfreesboro, Middle Tennessee Mental Health Institute, Tennessee Christian Medical Center and Parthenon Pavilion. **(9 credit hours)**

### ELECTIVE COURSES

**PSYC 602 - Forensic Psychiatry** - The forensics unit at Middle Tennessee Mental Health Institute incarcerates individuals who have been convicted of murder and have chronic psychiatric diseases. A second unit is an observation unit for individuals who have murder charges pending and the court system has ordered observation for the individual suspected of having a psychiatric illness. Activities include new patient assessment, follow-up and active participation in team meetings. Students may assist preceptors in the preparation of expert testimony in criminal cases. **(9 credit hours) Prerequisite: PSYC 501 - Psychiatry Clerkship**

**PSYC 603 – Addiction** - Students will be exposed to a wide variety of clientele to receive detoxification treatment for various substances as well as suffering from a variety of mental illnesses. The center offers inpatient and outpatient adult drug and alcohol detoxification programs, including the Rainbow Unit (a residential detoxification program for addicted and pregnant women and their new babies). Students actively participate in treatment team meetings, group therapy, new patient assessments and work with physicians in several ongoing substance abuse research assessment projects in data collection and analysis. **(9 credit hours) Prerequisite: PSYC 501 - Psychiatry Clerkship**

**PSYC 604 – Psychiatry Research** – This is a four- to twelve-week elective depending on the project selected. Students will have opportunities to assist in research in the following areas: psychometrics, college-age binge drinking, substance abuse, psychopharmacology and the elderly, forensic psychiatry and forms of abuse leading to subsequent mood disorders. **(9 credit hours)**
DEPARTMENT OF RADIOLOGY

Objectives

The objective of the Department of Radiology is to provide a basic understanding of imaging methods used to diagnose and treat disease. Radiographs of normal and pathological findings of the chest, gastrointestinal tract, bone, genitourinary, vascular and the neurological systems are discussed. Integration of imaging studies with knowledge of the basic and clinical sciences is stressed in evaluating diagnostic radiographic examinations. Also included are formal lectures covering radiation therapy, radiation biology, interventional radiology, nuclear medicine, ultrasonography, computed tomography, magnetic resonance imaging and current radiation safety during the rotation. In addition, the risks and cost benefits of the various imaging techniques are reviewed and analyzed in light of health care reform and cost containment.

COURSE DESCRIPTIONS

RADI 601 - Fourth Year Radiology Clerkship - This is a four-week required clerkship that is offered four times a year. The format includes lectures and presentations that are held in the Learning Resources Center four hours each morning. An organ system approach is utilized and incorporates all imaging modalities. Students are also encouraged to attend interdisciplinary conferences that are held jointly with other clinical departments. Emphasis is given to the evaluation of the various imaging modalities and the formulation of a differential diagnosis by the clinic delivering primary or specialty care to the patient. The emphasis of the course is the development of a series of basic concepts on how to use imaging studies for the improvement of patient care, particularly in the managed care environment. Opportunities are also given to publish cases in current radiology journals. (9 credit hours) Prerequisite: MEDI 501- Internal Medicine

ELECTIVE COURSE

RADI 602 - Radiology Elective - Electives in radiology are offered to students in their fourth year. The students are introduced to the various subspecialty areas of radiology, including diagnostic, ultrasound, CT, MRI and nuclear medicine in actual clinical settings. The opportunity to evaluate imaging studies as they are being performed and interpreted is the focus of this elective. Emphasis is placed on proper selection and sequencing of studies as well as the differential diagnostic approach to interpretation. Students are assigned topics to research from the literature based upon clinical discussions. Students are also given the opportunity to participate in conducting clinical trials in radiology research such as interviews and database analysis. To participate students, must complete the CITI training and NIH certification at least 1 week before the elective begins. (9 credit hours) Prerequisite: RADI 601 - Fourth Year Radiology Clerkship

DEPARTMENT OF SURGERY

COURSE DESCRIPTIONS

SURG 501 – Surgery Clerkship - The third year surgical clerkship is served in a twelve-week block in the third year of medical school. During this time, students are exposed to general surgery, the surgical subspecialties and the emergency medicine division at Nashville General Hospital, the Alvin C. York Veterans Administration Medical Center and the Blanchfield Community Army Hospital. Principles of acute trauma life support are incorporated into the rotation. Students are exposed on a rotating basis to evening call and the emergency room. In this role, they serve as a part of the health care team with active participation in the patient's care, under adequate supervision of staff and full and part-time surgical specialists. (27 credit hours)
ELECTIVE COURSES

SURG 615 – Anesthesiology - The goal of this course is to train students in the skill of basic airway management. This includes supplemental oxygen support, bag-mask ventilation and tracheal intubation. Intravenous catheter placement is taught, and the student is expected to develop an understanding of inhalation, intravenous and local anesthetics. The student also is expected to actively participate in the perioperative evaluation and management of patients undergoing general and regional anesthesia. Prerequisite: (9 credit hours) Prerequisite: SURG – 501 Surgery Clerkship

SURG 619 - Emergency Surgery - The basic purpose of this clerkship is to familiarize the student with the diagnostic and therapeutic skills for managing medical emergencies. The student is expected to learn the basic principles of emergency medical care. The student is required to research and present a topic in emergency medicine. (9 credit hours) Prerequisite: SURG – 501 – Surgery Clerkship

SURG 616 - General Surgery - This fourth year elective rotation is four weeks in duration and can be taken upon successful completion of the third year clerkship. The experience is designed to approximate that of an intern and consists of assignments to the operating room, outpatient clinics and inpatient service. Evaluation is made by direct observation of the attending staff. Students are required to keep a log of their surgical cases and clinical experiences. (9 credit hours) Prerequisite: SURG – 501 – Surgery Clerkship

SURG 639 – Ophthalmology - The student is required to review the ocular/orbital anatomy and learn the differential diagnosis of red eye, acute visual loss and chronic visual loss. The student will be taught to recognize the ocular manifestations of systemic disease, especially diabetes mellitus. Also the student will be an active participant in the OR and observe ophthalmic and laser surgeries performed in the clinic. (9 credit hours) Prerequisites: MEDI 501- Internal Medicine and SURG – 501 – Surgery Clerkship

SURG 611 – Orthopedics - The student will gain a basic knowledge of the anatomy, physiology and pathology of the musculoskeletal system and a basic understanding of diagnostic imaging studies that are useful in the evaluation of musculoskeletal problems. The student will be instructed in foundational information about the etiology, clinical presentation and treatment regarding diseases and disorders (trauma or non-trauma) encountered in an orthopedic practice. (9 credit hours) Prerequisite: SURG – 501 – Surgery Clerkship

SURG 614 – Urology - The student is expected to acquire a basic fundamental knowledge regarding the etiology, presentation and management of common urologic conditions. Materials for reading and review will be provided to the student at the outset of the rotation. The student will be expected to participate on hospital rounds and assist in the operating room. (9 credit hours) Prerequisite: SURG – 501 – Surgery Clerkship

SURG 620 – Rehabilitation Medicine - The student should have a basic knowledge of the anatomy, physiology and pathology of the musculoskeletal system. Students will participate in the outpatient evaluation and management of patients, hospital rounds and will assist in the clinic with spinal cord injury patients. (9 credit hours) Prerequisites: MEDI 501- Internal Medicine and SURG – 501 – Surgery Clerkship

School of Medicine Faculty

Basic Sciences Departments

Department of Biochemistry and Cancer Biology
Chairperson: Samuel E. Adunyah, Ph.D., Professor
Professors: Salil K. Das, DSC; Maria De Fatima Lima, Ph.D.; Josiah Ochieng, Ph.D.; Manuel Valenzuela, Ph.D.
Associate Professors: Sakina E. Eltom, D.V.M., Ph.D.; Shawn J. Goodwin, Ph.D.; Olugbemiga Ogunkua, M.D., Ph.D.; Aramandla Ramesh, Ph.D.; LaMonica Stewart, Ph.D.
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