Course Descriptions
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IFM YEAR ONE

Behavioral Science

Behavioral Science involves human development across the life cycle; mind-body interaction involving psychosomatic, psycho immunological and genetic issues; social psychiatry of substance abuse, pain management and child abuse; sexuality; legal issues; brain and behavioral characteristics of neuropsychiatric evaluation, dementia/delirium, autism, and psychiatric evaluations. The Behavioral Science lectures will be interspersed throughout the first year and not taught in one module alone. Topics that are covered are linked to topics covered in some of the modules: e.g., alcoholism and violence in the gunshot wound module. The information that is presented in the behavior science course includes significant connections to the Physician and Patient course. Interaction with standardized and hospital patients is enhanced by applying some of the knowledge and concepts introduced in behavioral science.

Community Educational Experience

Community Educational Experience is a community service learning course. Students explore social determinants of health and health disparities through lecture material, viewing of documentary video segments, reading, and active engagement and self-reflection at a community service site. Students choose among dozens of sites, working with youth, elders, newcomers, or individuals living in transitional shelters or housing. Students submit self-reflective journal entries that create opportunities for personal exploration of the challenges of providing meaningful service across lines of social difference.

Gross Anatomy

The Gross Anatomy course introduces the student to the normal structure and development of the human body. The course is organized in a regional format with study of the back and upper limb, thorax, abdomen, pelvis and perineum, lower limb, and head and neck. Emphasis is placed on musculoskeletal and neurovascular relationships in the back, limbs, head and neck and on the location, blood supply, lymphatic drainage, innervation, and relationships among organs in the major body cavities. Functional and clinical correlates are presented for each region as well. Early development of the embryo and specific development of organ systems are discussed where relevant. Dissection of human cadavers is an important component of the course and affords the students the opportunity to discover anatomical structures and variations among individuals. It also helps students to develop empathy for those who have donated their bodies for study and communication skills appropriate to working in a team setting (IFM).

Medical Biochemistry

In concert with the College of Medicine graduation competencies, the medical biochemistry-IFM course provides our students, through study of the structure and function of biomolecules, molecular biology, and metabolism, a knowledge base that supports their ability to demonstrate basic knowledge of the normal structure, development, and function of major organ systems and the body as a whole in the context of health and disease; to identify the molecular, biochemical, and cellular mechanisms that are important in maintaining health and contribute to the pathophysiology of disease; and to describe common disease entities, including their characteristic signs and symptoms, etiology, epidemiology, and pathophysiology.

Medical Genetics

Medical Genetics is the study of human variation relevant to health and disease. The goal of this course is to provide an initial framework of medical genetic understanding so that students can continue to build on it throughout medical school and in their medical careers. This course will provide a foundation in genetics so that students have the necessary context to develop competency in the areas of genetics knowledge, skills and attitudes recommended in 2001 by the American Society of Human Genetics, the Association of Professors of Human and Medical Genetics, and the American Association of Medical Colleges (AAMC).

Medical Immunology

Medical Immunology presents the most important principles governing the function of the immune system. Students are encouraged to synthesize these concepts into a working understanding of immune responses through a number of small group activities and case studies.
Medical Neuroscience
This course will provide extensive information regarding structure and function relationships in the central nervous system. It will also provide introductory information on neurophysiology, cellular neuroscience, and systems neuroscience topics. It teaches the structure and function of the central nervous system and peripheral nervous system with an emphasis on clinical relevance. It teaches students to identify symptoms associated with injury, stroke or common disease entities in the central and peripheral nervous system. Students learn to identify common neurological problems to provide the necessary background for behavioral science, pharmacology, and pathology in preparation for the board exams.

Medical Physiology
Medical Physiology is designed to provide medical and post-baccalaureate students with the fundamental physiological information and integrative concepts about major organ system function that are most pertinent to the fields of clinical and academic medicine.

Microscopic Anatomy
Microscopic Anatomy is the study of cells, tissues, organs, and organ systems at the light microscope and electron microscope levels. The course extends across the first nine modules of the year, and includes formal lectures, laboratories, and small group lab activities. The laboratories utilize glass slides as well as digitized, fully annotated slides that are available on the course website along with many additional study resources.

Nutrition
The medical nutrition course is an 18-hour course designed to introduce students to basic principles of nutrition as well as the clinical application of those principles to pathological conditions. Lectures cover the macronutrients and the major vitamins and minerals, as well as aspects of dietary recommendations, energy expenditure, and obesity. Physicians give presentations on nutrition for cancer patients and the hospitalized patient, and a lactation specialist provides a presentation dealing with breastfeeding. Additional required readings focus on nutrition as it relates to diabetes, malabsorption, COPD, alcoholism, iron deficiency, obesity, and issues surrounding the geriatric patient.

Physician and Patient
Physician and Patient is a first-year IFM clinical skills course focused on history taking and communication with patients. The course consists of three or four clinical framework lectures in each symptom module that highlight the clinical significance of the basic science content of the modules. These include several two-hour patient-focused auditorium sessions, a series of 14 two-hour small group sessions co-facilitated by a clinical faculty member and a fourth-year medical student which allows students to learn and practice physician-patient communication skills with standardized patients and hospitalized patients, and a number of individual practice encounters with standardized patients. Students are required to attend one Alcoholics Anonymous meeting and to shadow a physician in the emergency room for one evening. There is also a geriatric component of the course in which pairs of students visit residents of a geriatric facility on three occasions and write papers about those experiences.
Course Descriptions
YEARS ONE AND TWO

Professionalism

The Professional Values and Personal Awareness course supports professional formation. It is woven throughout the four years. Professional formation learning goals and objectives are incorporated into the pre-clinical and clinical courses. In addition, there are dedicated sessions and activities that are independent of other courses. These include the freshman White Coat Ceremony and formal presentations on professionalism and professional formation; professionalism and use of electronic media (email, social networking, etc.); principles of psychological health and forming wholesome professional and personal relationships; providing effective feedback to peers; identifying the hidden curriculum; conflict management; physician response to death; and caring for vulnerable populations.

PIL YEAR ONE

Anatomy

The Gross Anatomy course introduces the student to the normal structure and development of the human body. The course is organized in a regional format with study of the back, upper limb, lower limb, thorax, abdomen, pelvis and perineum, and head and neck. Emphasis is placed on musculoskeletal and neurovascular relationships in the back, limbs, head and neck and on the location, blood supply, lymphatic drainage, innervation, and relationships among organs in the major body cavities. Early development of the embryo and specific development of organ systems are discussed where relevant. The course material is presented in lecture, laboratory and online content. All of these formats provide an opportunity to introduce the student to the various diagnostic imaging modalities and the anatomy that each may demonstrate. Dissection of human cadavers is an important component of the course and affords the opportunity for students to discover anatomical structures and variations among individuals, develop empathy for those who have donated their bodies for study, and to develop communication skills appropriate to working in a team setting.

Behavioral Science

The Behavioral Science 1 course introduces students to human development throughout the life cycle, contributions of the psychosocial sciences, and the theories of personality. This is done through appropriate learning objectives in each of the cases and several resource sessions which occur throughout the year.

Medical Biochemistry

Medical Biochemistry is the study of how fundamental biological processes work at the chemical level and how they are regulated. To help students develop an appropriate mastery of the field, the structure and function of biomolecules, molecular biology, and metabolism are presented using a combination of large-group lectures, small-group case-based conferences, and self-studies (guided and unguided). The emphasis is on clinical relevance, and the underlying assumption is that knowledge of biochemistry is essential for understanding the causes and manifestations of human disease, as well as the rationale of therapeutic strategies.

Clinical Skills

This course provides a foundation for students to learn how to take a patient-centered medical history, as well as learn the basic framework for doing a physical exam. This course is integrated into the PIL curriculum and allows students opportunities to practice skills with standardized patients throughout the year.

Genetics

Medical Genetics is the study of human variation relevant to health and disease. The goal of this course is to provide an initial framework of medical genetic understanding so that students can continue to build on it throughout medical school and in their medical career. This course will provide a foundation in genetics so that students have the necessary context to develop competency in the areas of genetics knowledge, skills and attitudes recommended in 2001 by the American Society of Human Genetics, the Association of Professors of Human and Medical Genetics, and the American Association of Medical Colleges (AAMC).
Immunology/Introduction to Microbiology
Medical Immunology and an Introduction to Microbiology present the most important principles governing the function of the immune system while introducing students to three major areas of microbiological studies: bacteriology, virology, and mycology. The students are encouraged to synthesize these concepts into a working understanding of immune responses through block cases, additional small group activities, and labs.

Medical Neuroscience
This course provides extensive information regarding structure and function relationships in the central nervous system. It also provides introductory information on neurophysiology, cellular neuroscience, and systems neuroscience topics. It teaches the structure and function of the central nervous system and peripheral nervous system with an emphasis on clinical relevance. It teaches students to identify symptoms associated with injury, stroke or common disease entities in the central and peripheral nervous system. Students learn to identify common neurological problems to provide the necessary background for behavioral science, pharmacology, and pathology in preparation for the board exams.

Nutrition
The Medical Nutrition course is an 18-hour course designed to introduce students to basic principles of nutrition as well as the clinical application of those principles to pathological conditions. Lectures cover the macronutrients and the major vitamins and minerals, as well as aspects of dietary recommendations, energy expenditure, and obesity. Physicians give presentations on nutrition for cancer patients and the hospitalized patient, and a lactation specialist gives a presentation about breastfeeding. Additional required readings focus on nutrition as it relates to diabetes, malabsorption, COPD, alcoholism, iron deficiency, obesity, and issues surrounding the geriatric patient.

Patient as a Person Year One: Bioethics, Statistics, Women’s Health, Business of Health Care
The purpose of the course is to give students a broad education in medicine that goes beyond a study of the basic sciences. It incorporates psychosocial aspects of medicine, financial considerations, ethics, and the development of lifelong learning skills needed to assess new information. Patient as a Person topics include four major subject areas: 1) bioethics, 2) epidemiology, statistics and research design, 3) the business of health care, and 4) women’s health.

Physiology
Medical Physiology is designed to provide medical and post-baccalaureate students with the fundamental physiological information and integrative concepts about major organ system function that are most pertinent to the fields of clinical and academic medicine.
Course Descriptions
YEARS ONE AND TWO

PIL Process Year One
This is a first-year course required of and restricted to students in the PIL track of the College of Medicine. Working with small groups using a problem-based format, the course seeks to provide an integrated framework of basic and clinical science knowledge, which emphasizes awareness of the patient as a person, and advances the development of independent learning and teamwork skills. The course will advance life-long learning in medicine. At its core, PIL Process 1 is student-centered learning of patient-centered medicine.

Primary Care and Community Practicum
The Primary Care Practicum is a 6-week block at the end of the first year of the Program for Integrated Learning (PIL) curricular tract for first-year medical students. The purpose of the Primary Care Practicum is to expose the student to the practice of primary care medicine and community health with students working with one or more primary care practice physicians and staff. The student will use actual patients and their problems to study the basic sciences fundamental to medicine. The community health component of the Primary Care Practicum is a community service learning experience. Students explore social determinants of health and health disparities through lecture material, viewing of documentary video segments, reading, and active engagement and self-reflection at a community service site. Students choose among dozens of sites, working with youth, elders, newcomers, or individuals living in transitional shelters or housing. Students participate in two small group discussions during the course, further exploring social medicine themes in relation to first-hand experiences at their primary care and community sites. During small groups, students also apply principles of reflective practice when sharing experiences that were particularly challenging or meaningful.

IFM YEAR TWO

Bioethics Medical Humanities Program
This is a course in clinical ethics, featuring the issues faced daily by practicing physicians. The course provides an opportunity to clarify the core values that form the foundation of the doctor-patient relationship. The course also creates opportunities to reflect on the essential qualities (virtues) of a good physician, and how those qualities are cultivated throughout a professional lifetime. Students learn through lectures, small group, directed reading, and computer-based learning cases. Topics include principles of bioethics; informed consent and shared decision-making; confidentiality and duty to warn; research ethics; ethics of cultural accommodation; medical futility; withdrawal of care and refusal of care; public health crises; reproductive choice and abortion; mistakes and malpractice; allocation, justice, and organ transplantation; ethics in pediatrics; medical student ethical dilemmas; relations with industry and conflicts of interest; and moral distress and moral courage.

Community and Preventive Medicine
Part of the second-year medical student curriculum, this course spans a range of topics including community and public health, preventive medicine, health promotion, occupational medicine, health disparities and cultural issues. For the IFM curriculum, there are 15 lecture sessions.

Business of Health Care
The Business of Health Care reviews the United States health care system from the perspective of a practicing physician. The IFM II tract consists of 4 two-hour lectures. Pre-assessment and post-assessment exams are used to evaluate the efficacy of the course.

Introduction to Clinical Medicine
The Introduction to Clinical Medicine (ICM) course serves as a bridge between the basic science and clinical years. The purpose of the course is to lay the clinical foundation for a student’s development into a physician. Numerous members of the clinical faculty, each sharing their area of expertise, will teach the course. This course includes didactic lectures, small group case discussions, online patient cases, clinical skills workshops, standardized patient exercises, and hospital-based instruction in physical diagnosis.
**Medical Microbiology**

Medical Microbiology presents the basic biology of and disease processes caused by the major human microbial pathogens. A strong emphasis is placed on recognizing organisms as etiologic agents in the context of a clinical presentation. The course is taught in an organ system approach and the material is coordinated with Pathology, Pharmacology, and Introduction to Clinical Medicine.

**Medical Pharmacology**

Medical Pharmacology presents the scientific principles of the action of pharmacological agents. A strong emphasis is placed on understanding the relevant biochemistry, anatomy and physiology, and how pharmacological agents interact with these areas to achieve specific therapeutic objectives. The student will gain insight into the mechanisms of action, and metabolism and distribution of drugs in the living organisms, as they are indispensable prerequisites for a complete understanding of drug actions. The course is taught in an organ system approach and the material is coordinated with Pathology, Introduction to Clinical Medicine, and Psychopathology.

**Psychopathology**

The Psychopathology course provides second-year medical students with an introduction to the medical specialty of psychiatry and prepares them for the USMLE Step 1 examination and the psychiatry clerkship in the third year. It builds upon the content of the Behavioral Science course from year one and consists of several two-hour sessions – the first hour is a lecture and the second hour consists of an illustrative discussion of a psychiatric disorder. The curriculum is coordinated with psychopharmacology and culminates in a joint psychopharmacology-psychiatry conference at the end of the module.

**PIL YEAR TWO**

**Clinical Skills Year Two**

This clinical skills course provides a longitudinal educational experience for the second-year medical student to further develop students’ interviewing, physical exam, presentation, and clinical assessment skills in preparation for clinical rotations.

**Microbiology**

Medical Microbiology presents the basic biology of and disease processes caused by the major human microbial pathogens. A strong emphasis is placed on recognizing organisms as etiologic agents in the context of a clinical presentation. The course is taught in the second year; it is integrated with Pathology, Pathophysiology, and Pharmacology and is loosely organized into organ systems.

**Patient as a Person Year Two: Bioethics, Statistics, Women’s Health, Business of Health Care**

The purpose of the course is to give students a broad education in medicine that goes beyond a study of the basic sciences. It incorporates psychosocial aspects of medicine, financial considerations, ethics, and the development of lifelong learning skills needed to assess new information. Patient as a Person topics include four major subject areas: 1) bioethics, 2) epidemiology, statistics and research design, 3) the business of health care, and 4) women’s health.

**Pathophysiology**

The definition of pathophysiology is the “study of normal function of the systems in the body and its abnormal function in disease.” It is a course designed to be a bridge between physiology and clinical medicine. The course focuses on the disease process and how it alters the normal physiology already studied by students. Pathophysiology is a challenging subject as it is interdisciplinary in nature, overlapping with other major courses taught this year. Students are expected to study the disease process and understand what symptoms the patient may present.
Course Descriptions
YEARS ONE AND TWO

PIL Process Year Two
This is a second-year course required of and restricted to students in the PIL track of the College of Medicine. Working with small groups using a problem-based format, the course seeks to provide an integrated framework of basic and clinical science knowledge, which emphasizes awareness of the patient as a person, and advances the development of independent learning and teamwork skills. The course will advance life-long learning in medicine. At its core, PIL Process Year Two is student-centered learning of patient-centered medicine.

Pharmacology
Medical Pharmacology presents the scientific principles of the action of pharmacological agents. A strong emphasis is placed on understanding the relevant biochemistry, anatomy and physiology and how pharmacological agents interact with these areas to achieve specific therapeutic objectives. The student will gain insight into the mechanisms of action, metabolism and distribution of drugs in the living organisms as they are indispensable prerequisites for a complete understanding of drug actions. The course is taught in a case-based approach and the material is coordinated with Pathology, Pathophysiology, and Psychopathology.

Psychopathology
The psychopathology course provides the second-year medical students with an introduction to the medical specialty of psychiatry and prepares them for the USMLE Step 1 examination and the psychiatry clerkship in the 3rd year. It builds upon the content of the behavior science course from year one and consists of several two-hour sessions – the first hour is a lecture and the second hour consists of an illustrative discussion of a psychiatric disorder. The curriculum is coordinated with psychopharmacology and culminates in a joint psychopharmacology-psychiatry conference at the end of the module.
**Intersession I**

Intersession I is a two-week required course that assists the learner’s transition from the classroom into the clinical setting. Week one is completed online and requires the student to work through modules that address the role of students on the patient care team, oral presentation of patients on rounds, writing an admission history and physical versus writing a daily progress note, and working collaboratively on teams. An interactive module dealing with evidence-based medicine reinforces what the student has learned in years 1 and 2. During week two, there are basic skills simulations that all students take dealing with basic suturing, basic life support, delivering a baby, and starting IV’s and drawing blood. The didactic components include reinforcing HIPAA, dealing with uncertainty, writing orders, malpractice concerns, and the nuts and bolts rules of the road for clerkships. The students are also introduced to cyber professionalism, SBAR patient safety and Act 13, and proper hospital hygiene.

**Family Medicine**

The Family Medicine Clerkship is a required six-week rotation. Students work in various clinical settings, as they learn about common problems encountered by family physicians; develop an understanding of the role of family physicians in patient care; and learn to implement a biopsychosocial model in caring for patients. Students will encounter issues in acute care, management of chronic illnesses, and health maintenance over the entire lifespan.

**Medicine Clerkship**

The medicine clerkship is the educational experience during which students are expected to gain the basic knowledge, skills and attitudes needed to care for adult patients with medical disorders. The core topics in the curriculum are those recognized by Clerkship Directors in Internal Medicine. The clerkship will focus on those basic competencies of general internal medicine we believe should be mastered by third-year medical students. One third of the clerkship will be devoted to the study of patients in the ambulatory setting. Two thirds of the clerkship will be devoted to the study of patients in the hospital setting.

**OB/GYN Clerkship**

This clerkship is six weeks in duration and provides the opportunity to experience general OB/GYN as well as to introduce students to the diverse subspecialties available through obstetrics and gynecology. The curriculum is clinically based with interactive didactics to reinforce the key topics in obstetrics and gynecology.

**Pediatrics Clerkship**

During this six-week clerkship, students learn to differentiate normal from abnormal growth and development in children, develop clinical skills necessary for the diagnosis and management of childhood illness, and build communication skills necessary for successful clinical interactions with young patients and their families. Students help care for children of all ages, from newborns through adolescents, while working closely with attending physicians, residents, nurse practitioners, nurses, social workers, and other members of the pediatric health care team.

**Psychiatry Clerkship**

The psychiatry clerkship introduces students to the current practice of psychiatry and guides them in developing the ability to identify, evaluate and manage the emotional and psychiatric problems that they will encounter in various types of medical practice. The clerkship provides them with the opportunity for interaction with other treatment providers and families of the patients to help them acquire the skills necessary for adopting a team approach in the management of patients with such disorders.

**Surgery Clerkship**

The surgery clerkship is a 12-week course. The clerkship provides a clinical correlation or practical application of the basic science concepts learned in the 1st and 2nd years of medical school. The goals for the student are to identify and learn the core principles of surgery and to develop a broad-based knowledge of surgery that is applicable to many areas of medicine. The objectives are modeled after the ACGME Core Competencies (Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Professionalism, Practice-Based Learning and Improvement, and System-Based Practice). The students are exposed to various aspects of general surgery during the clerkship. Elective time scheduled as a part of the 12-week block allows the students to acquire exposure to surgical subspecialties.

Students are evaluated on the basis of their performance clinically by the faculty, as well as their performance on the shelf and the oral exams given at the end of the surgery clerkship.
Sub-Internship in Medicine

The required fourth-year sub-internship in medicine is designed to better prepare future graduates for life as an intern. As a Sub-I, students should carry more patients than as a third-year student, and more importantly, should function more like an intern—writing notes, devising a comprehensive plan, writing the orders, assisting and/or performing procedures, calling consultants, and helping with discharge planning. All of these activities are overseen by a supervising resident and attending. Additionally, students participate in a series of case conferences focusing on common clinical scenarios encountered by interns.

Neurology Clerkship

The neurology clerkship introduces the fourth-year student to general neurologic disease, diagnosis and treatment. Students participate in both inpatient and outpatient care. They demonstrate mastery of the neurologic examination. They complete several virtual cases to show understanding of the rubric.

Intersession II – Transition to Residency

Intersession II is a two-week required course that assists the learner’s transition between medical school and internship. The first week is completed online and requires the student to work through modules that address palliative/end-of-life care, complementary and alternative medicine, advanced communication skills such as delivering bad news, and the final section of the business of medicine course. Week two, which is done on site, is focused toward both didactic and skills learning. Students build upon what they have learned during week one and practice these skills in workshops. They meet with a standardized patient and practice their communication skills, both in the delivery of bad news and in obtaining a DNR status from a family member. Other interactive workshops include Megacode, Intubation and Oxygen Delivery, Advanced Suturing, Pediatric and OBGYN simulations and more. These are self selected by the students based upon the residency they matched into. Other areas of didactic learning include routine assignments that may be expected of an intern such as pronouncing a patient dead. This lesson explains this duty from the actual way a person is pronounced through the paperwork, autopsy information, and concludes with the personal reaction that death may evoke in each of the learners. Students participate in a mock trial to address medical malpractice issues and concerns.