

# School of Medicine

The MD degree is achieved after a four-year course of study. Please visit the School of Medicine website for information about the admissions process: <http://medicine.missouri.edu/admissions/>

The curriculum at the University of Missouri School of Medicine emphasizes clinical reasoning, self-directed learning, collaborative learning and early clinical experiences. It integrates the basic sciences and clinical reasoning. In years 1 and 2, emphasis is placed on small group learning with some lectures. Courses are not department or discipline based.

During the third year, seven core clerkships are required in Family Medicine, Internal Medicine, Neurology, Obstetrics and Gynecology, Pediatrics, Psychiatry and Surgery. It is during these core clerkships that students learn the fundamentals of good patient care and faculty are assessing that students are competent upon completion of the clerkship. These clinical experiences must be under the supervision of Columbia-based School of Medicine faculty or community faculty appointed through the School of Medicine. All students may take up to three core clerkships developed and approved by School of Medicine departments through the University of Missouri School of Medicine Rural Track Clerkship program.

During the fourth year, three one-month clinical selectives, four one-month general electives and a one-month Advanced Biomedical Sciences are required. A minimum of four courses must be taken under the supervision of Columbia-based School of Medicine faculty as follows:

Students must take two of the three required clinical selectives under the supervision of Columbia-based School of Medicine faculty or community faculty appointed through the School of Medicine. One of the required selectives must be a surgical selective, one must be a medical selective and the third can be either a surgical or medical selective. Certain clinical experiences such as the Indian Health Service and designated rural community selectives approved by the department education director are considered under the supervision of Columbia-based School of Medicine faculty and will meet the requirement for one of the two clinical selectives. The third clinical selective may be taken at a site approved by the department, the advisor and the Office of Medical Education. Fourth year Rural Track elective courses approved at designated Rural Track training sites are considered to be under the supervision of Columbia-based School of Medicine faculty.

For more information about the School of Medicine, call (573) 882-9219. <http://medicine.missouri.edu>

## Patient Based Learning

### First and Second Years

Years one and two consists of four 9-week blocks. Each block has two components: Basic Science/Patient Based Learning (BSci/PBL) and Introduction to Patient Care (IPC).

#### BSci/PBL

In this component, students work through one authentic clinical case each week in small groups of students with a faculty facilitator. The facilitator is not a content expert, but rather guides the group as they work through the case seeking a diagnosis and patient care plan. BSci/PBL cases guide learning and the application of basic science concepts in clinical scenarios. A few basic lectures and laboratory experiences teach concepts that supplement the cases. BSci/PBL features about 10 hours

of patient-based learning with about 10 hours of traditional teaching such as lectures each week.

#### IPC

Themes change with each block and focus on clinical skills, including history taking and physical examination, psychosocial issues and increasing the students' understanding of epidemiology, diagnostic tests and psychopathology. The primary learning strategies also emphasize small-group learning with supporting lectures and laboratory experiences.

#### ACE (Ambulatory Care Experience)

ACE is required during blocks 2 through 4 of the first year and elective during the second year.. During the ACE each student spends half a day twice a month with a role-model faculty or community physician-preceptor.

#### Advanced Physical Diagnosis (APD)

APD is required during the second year. Students are assigned to a clinician mentor for the entire academic year. Times and frequency of meetings are at the discretion of the faculty member and the students; however, it is recommended that they meet at least twice each month. The emphasis of this APD experience is on history and physical exam skills and clinical reasoning. Successful completion of APD is required for advancing to the core clerkships.

#### Contemplating Medicine Patients, Self and Society (COMPASS)

This is a longitudinal small group course. Faculty facilitated small group sessions occur throughout all 4 years; addressing topics related to professional formation.

#### Independent Learning

Two half days each week are protected time for independent or student-directed learning; no faculty-initiated activities may be scheduled.

## M1 - Blocks 1, 2, 3, 4

MED_ID 5041	Structure and Function of the Human Body I	6
MED_ID 5042	Interviewing	3
MED_ID 5043	Structure and Function of the Human Body II	6
MED_ID 5044	Physical Examination	3
MED_ID 5045	Structure and Function of the Human Body III	6
MED_ID 5046	Psychosocial Aspects of Medicine	3
MED_ID 5047	Structure and Functions of the Human Body IV	6
MED_ID 5048	Clinical Epidemiology and Preventive Medicine	3
MED_ID 5051	Ambulatory Clinical Experience I	1

## M2 - Blocks 5, 6, 7, 8

MED_ID 5551	Pathophysiology I	6
MED_ID 5552	Diagnostic Tests and Medical Decisions	3
MED_ID 5553	Pathophysiology II	6
MED_ID 5554	Psychopathology and Behavioral Medicine	3
MED_ID 5555	Pathophysiology III	6
MED_ID 5556	Clinical Practicum	3
MED_ID 5557	Pathophysiology IV	6
MED_ID 5558	Physician as a Person	3
MED_ID 5561	Advanced Physical Diagnosis I	1

## Clerkships

Year three includes seven clerkships in Family Medicine, Internal Medicine, Neurology, Obstetrics and Gynecology, Pediatrics, Psychiatry, and Surgery. During these core clerkships, students learn the fundamentals of good patient care, and faculty assesses student competencies. Clerkships must be supervised by Columbia-based School of Medicine faculty or community faculty appointed through the School of Medicine. Students may take up to three clerkships at designated community sites as part of the MU Rural Track Clerkship Program (<http://www.muahc.missouri.edu/rural-track.php>).

Students have the opportunity to learn about common illnesses and abnormalities in children. Emphasis also is placed on the importance of preventive and developmental aspects of child care. Lectures and case presentations correlate with the clinical experiences.

### Family and Community Medicine Clerkship - F\_C\_MD 6001

Core learning experiences take place in ambulatory clinic settings. Students work with experienced clinicians and senior residents, spending time in University teaching practices and in community-based practices. Students also may spend time seeing patients in emergency room, hospital, nursing home settings and taking call with residents and practicing physicians. A high volume of patients of all ages with a wide range of problems is encountered. Many patients will have undifferentiated problems.

### Internal Medicine Clerkship - IN\_MED 6002

Students spend eight weeks on the internal medicine inpatient service at University Hospital and Harry S. Truman Veterans Hospital where they learn to care for adult patients with acute and chronic illnesses. Teaching emphasizes the principles of differential diagnosis and problem solving as well as the integration of basic science information into the art of patient care. Students also gain clinical experience in medical interviewing and physical examination.

### Obstetrics/Gynecology Clerkship - OB\_GYN 6004

Students rotate on the obstetric service, the gynecology service and the gynecologic oncology service, seeing a broad range of patients in both inpatient and outpatient settings. In addition, they attend lectures and interactive case presentations.

### Neurology Clerkship - NEUROL 6003

Students see patients with neurological disorders in the outpatient clinics, in hospital settings, and on consultation services.

### Psychiatry Clerkship - PSCHTY 6005

Students see patients with psychiatric disorders in the outpatient clinics, in hospital settings and on consultation services.

### Surgery Clerkship - SURGRY 6006

Emphasis is placed on the diagnosis and treatment of disorders requiring surgical intervention. Each student has a faculty mentor-advisor, attends faculty discussion sessions that cover objectives in the required textbooks and takes call under the supervision of surgical residents. Students are assigned patients from all surgical specialties, participate in preoperative examinations and evaluations, assist during surgical procedures and follow the postoperative management process.

### Patient-Centered Care Objective Structured Clinical Evaluation (PCC-OSCE)

A PCC-OSCE will be administered at the end of the third year to assess a student's ability to provide patient-centered care. Successful completion is required for graduation. Describe more here??

### Contemplating Medicine Patients, Self and Society (COMPASS)

This is a longitudinal small group course. Faculty facilitated small group sessions occur throughout all 4 years; addressing topics related to professional formation.

## Electives

The fourth year consists of three one-month advanced clinical selectives (sub-internships), in the core disciplines, four one-month general electives, and a one-month Advanced Biomedical Sciences (ABS) course. One of the advanced selectives must be in a surgical area and one must be in a medical area. A minimum of four fourth-year courses (including 2 advanced selectives) must be taken under the supervision of Columbia-based School of Medicine faculty.

The fourth year consists of two groups of advanced selectives and general electives.

### Advanced Clinical Selectives

Three advanced clinical selectives from the core disciplines of child health, family medicine, internal medicine, neurology, obstetrics and gynecology, psychiatry and surgery are required. Each selective is four weeks in length. One must be in a surgical area and one must be in a medical area. Advanced clinical selectives build on the knowledge and skills acquired during third-year core clerkships. Students are expected to assume more responsibility for patient care than in the core blocks.

### Advanced Basic Science Selectives

Advanced basic science selectives revisit the biomedical sciences in the context of a patient, disease, diagnosis or problem. Four options are available. Students may:

- Search and analyze the literature, integrate and evaluate data, produce a paper or presentation
- Conduct original research with mentors from the basic or clinical sciences
- Attend a series of graduate-level lectures and discussions of current literature
- Function as co-tutors for PBL, attend tutor preparation sessions and write a PBL case

### General Electives

Sixteen weeks of general electives are required. Off-site experiences are available but must be approved by the appropriate department.

For more information on fourth year course offerings, please refer to the **Senior Rotation Catalog**. This catalog contains descriptions of all senior rotations offered at the University of Missouri - Columbia School of Medicine, as well as information concerning enrollment for rotations.

### Contemplating Medicine Patients, Self and Society (COMPASS)

This is a longitudinal small group course. Faculty facilitated small group sessions occur throughout all 4 years; addressing topics related to professional formation. Fourth year students complete a required COMPASS capstone assignment.

## USMLE

The United States Medical Licensing Examination (USMLE) (<http://www.usmle.org>) is a three-step examination for medical licensure in the United States and is sponsored by the National Board of Medical Examiners® (NBME) (<http://www.nbme.org>) and the Federation of State Medical Boards (FSMB) (<http://www.fsmb.org>). The USMLE assesses a physician's ability to apply knowledge, concepts, and principles, and to demonstrate fundamental patient-centered skills that are important in health and disease and that constitute the basis of safe and effective patient care.

All medical students are required to take Step 1 at the end of the second year of medical school and must pass it prior to beginning the fourth year.

All medical students are also required to pass Step 2 Clinical Knowledge (CK) and Step 2 Clinical Skills (CS) prior to graduation.

Step 3 is typically taken after the first year of residency.

### **ANESTH 6203: ABS Anesthesiology Research**

ABS Anesthesiology Research

**Credit Hour:** 5-10

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### **ANESTH 6205: ABS Anesthesiology Research and Review**

ABS Anesthesiology Research and Review

**Credit Hour:** 5-10

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### **ANESTH 6400: Anesthesiology**

**Goals/Objectives:** The goals are providing students with opportunities to: 1. Understand the anesthetic state (e.g. the inability of a person to protect themselves from the environment; concomitant and common depression of other systems of the body other than the nervous system). 2. Learn how to think and react quickly and correctly in times of stress. 3. Develop knowledge and skill at maintaining artificial ventilation and circulation. 4. Develop technical skills (e.g. insertion of endotracheal tubes, intravenous catheters). 5. Understand the rationale behind the choice of an anesthetic agent or technique. 6. Learn the function of an anesthesiologist as a perioperative physician and pain consultant. 7. Learn about the specialty of anesthesiology as a possible future career.

**Notes:** Curriculum: Direct participation in anesthetic evaluation and administration for surgical procedures is combined with close individual supervision. Attendance at weekly teaching conferences is expected. Each student will follow a patient pre, intra, and post operatively and write a case presentation. Interblock: First consideration given to students interested in anesthesia as a career choice; honors considered only with documentation of participation and completion of a research project related to anesthesia. Evaluations: Evaluations are compiled from daily encounter cards completed by anesthesia providers, a written paper that discusses one patient's anesthetic, and a 50 question written examination at the end of the rotation.

**Credit Hours:** 5

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### **ANESTH 6927: Anesthesiology Two-Week**

Through daily participation, students will gain insight into the specialty of anesthesiology and will develop an appreciation for the integration of basic science knowledge (especially anatomy, physiology, and pharmacology) in the clinical care of patients.

**Credit Hours:** 2

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**Prerequisites:** successful completion of the first two years of medical school

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### **CH\_HTH 6000: Child Health Clerkship**

Students have the opportunity to learn about common illnesses and abnormalities in children. Emphasis also is placed on the importance of preventive and developmental aspects of child care. Lectures and case presentations correlate with the clinical experiences.

**Credit Hours:** 8

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### **CH\_HTH 6010: Rural Child Health Clerkship**

Rural Child Health Clerkship

**Credit Hours:** 8

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### **CH\_HTH 6020: Springfield Child Health Clerkship**

Students have the opportunity to learn about common illnesses and abnormalities in children. Emphasis also is placed on the importance of preventive and developmental aspects of child care. Lectures and case presentations correlate with the clinical experiences.

**Credit Hours:** 8

**Prerequisites:** Successful completion of the first two years of medical school

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### **CH\_HTH 6037: SCC Pediatric Intensive Care**

Student will learn the initial approach and daily management of children requiring care in the Pediatric Intensive Care Unit. Students will learn the evaluation of and the management of critically ill or injured children focusing on airway and pulmonary physiology, cardiac physiology, neurological diseases, traumatic injuries, acute overdoses, endocrine emergencies, basic fluid management, and the medically complex child. Pharmacologic and nutritional management of the critically ill or injured child will also be reviewed.

**Credit Hours:** 5

**Prerequisites:** Successful completion of 5 of the 7 core clerkships. One of the 5 must be the Child Health clerkship. CH\_HTH 6000, 6010, 6020, or 6100

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### **CH\_HTH 6100: Remediation Child Health Clerkship**

Enrolled students are those who received an unsatisfactory grade in a Child Health Clerkship at any Mizzou Med location or site. This course gives them the opportunity to rectify a deficiency.

**Credit Hours:** 8

**Prerequisites:** CH\_HTH 6000 Child Health Clerkship, received unsatisfactory grade

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### **CH\_HTH 6221: Advanced Biomedical Science Medicine Problem Premature Infant**

Advanced Biomedical Science Medicine Problem Premature Infant

**Credit Hours:** 5

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### **CH\_HTH 6223: ABS Child Health Research**

ABS Child Health Research

**Credit Hour:** 5-10

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**CH\_HTH 6225: ABS Child Health Research and Review**

ABS Child Health Research and Review

**Credit Hour:** 5-10

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**CH\_HTH 6425: Child Health Genetics**

Goals/Objectives: To develop an understanding of medical genetics, including genetic diagnosis, cytogenetics, metabolic genetic diseases, teratology, and the genetics literature, and computer databases.

CURRICULUM: During the block, each student will see patients in consultation and in the genetics clinics (general genetics, metabolic, PKU, autism, Down Syndrome, outreach) where they will work up the patients and prepare a report and discussion of the diagnosis or diagnostic differential. Each student will also prepare a literature review around a specific patient or problem. For interested students, cytogenetics or metabolic problems are available. Prerequisites: Child Health clerkship

**Credit Hours:** 5

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**CH\_HTH 6426: Child Health Infectious Disease**

Child Health Infectious Disease

**Credit Hours:** 5

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**CH\_HTH 6427: Pediatric Hematology/Oncology**

Pediatric Hematology/Oncology

**Credit Hours:** 5

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**CH\_HTH 6428: Pediatric Diabetes and Endocrinology**

Goals/Objectives: 1) To understand the pathophysiology of endocrine and metabolic diseases in childhood. 2) To understand the fundamentals of growth processes in infancy, childhood, and adolescence.

CURRICULUM: The Department of Child Health has a large patient care and research program for children with diabetes mellitus. In addition, the Department has a busy general endocrinology program. Thus, students on the elective can participate in the care of patients with a wide spectrum of endocrine and metabolic diseases. Students can carry out specific clinical or laboratory projects relating to specific aspects of either diabetes or endocrine disease, deepen their understanding of pathophysiology of disease and gain a better understanding of the impact of a chronic disorder on the child and his/her family.

**Credit Hours:** 5

**Prerequisites:** Child Health Clerkship

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**CH\_HTH 6429: Developmental Pediatrics**

Developmental Pediatrics

**Credit Hours:** 5

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**CH\_HTH 6430: Pediatric Cardiology**

Goals/Objectives: Clinical and laboratory material is available to achieve the following objectives: 1) Develop skills in auscultation, resuscitation, treatment of congestive heart failure, and recognition of congenital heart disease in infants. 2) Adequate exposure to pediatric electrocardiography, echocardiography, cineangiography, and interpretation of cardiac catheterization data. 3) Proficiency in the management of postoperative cardio-vascular patients.

**Credit Hours:** 5

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**Prerequisites:** Child Health Clerkship

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**CH\_HTH 6431: Pediatric Pulmonology**

Goals/Objectives: To gain experience in the treatment of asthma, bronchopulmonary dysplasia, cystic fibrosis, sleep disorders, and other respiratory diseases and to learn about pulmonary function testing in children.

**Credit Hours:** 5

**Prerequisites:** Child Health Clerkship

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**CH\_HTH 6432: Pediatric Gastroenterology**

Goals/Objectives: 1) Gain experience in GI diseases of children noting the difference and similarities with adult diseases. 2) To introduce the student to some of the most commonly encountered diagnoses in pediatrics and to its management. 3) To learn to focus on physical diagnosis skills. CURRICULUM: Preceptorship with a pediatric subspecialist for four weeks will include inpatient and outpatient service activities.

**Credit Hours:** 5

**Prerequisites:** Child Health Clerkship

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**CH\_HTH 6433: Child Health Sports Medicine**

Child Health Sports Medicine

**Credit Hours:** 5

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**CH\_HTH 6434: Child Adolescent Medicine**

Goals/Objectives: To teach 4th year students the intricacies of care of the adolescent patient. Specifically, the rotation will address the adolescent interview, important considerations in the adolescent "check-up", and managing the varied problems in adolescents, from attention deficit disorder to eating disorders and gynecological issues. The student will leave the rotation with a better understanding of the care of adolescents. CURRICULUM: These objectives will be met in the following manner: 1) Student will actively participate in adolescent medicine clinic with both clinical attendings. He/she will be responsible for the initial evaluation of the patients in the clinic, will actively participate in clinical decision-making, and will be responsible for helping with patient write-ups and referral letters (at the discretion of the attending). The student will be expected to function on an extern level, following up on laboratory evaluations and checking in with patients seen, when needed. 2) The student will participate in the adolescent interview practice sessions with the interact teen theatre with the residents on the rotation. This process will help to improve interviewing skills with adolescents. 3) The student will be responsible for helping with any inpatient care, including consultations and/or admissions. 4) The student will be asked to identify particular areas of interest to be used as topics for interactive discussion with one of the attendings or for a short paper.

**Credit Hours:** 5

**Prerequisites:** Child Health Clerkship

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**CH\_HTH 6435: Ped Renal and Rheumatology**

4th year elective for renal/rheumatology rotation, four weeks.

**Credit Hours:** 5

**Prerequisites:** 3rd year Pediatrics/Child Health or Internal Medicine rotation

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**CH\_HTH 6706: Internal Medicine Hematology and Medical Oncology Rural Elective**

The student will work as part of a team providing hands-on clinical services in a rural outpatient setting. Students will participate in daily morning report and other didactic sessions provided by the rotation site. Students will learn using a variety of evidence-based resources, direct observations and demonstration.

**Credit Hours:** 5

**Prerequisites:** CH\_HTH 6002; restricted to medical students only

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**CH\_HTH 6725: Developmental Pediatrics - Rural**

Rural developmental pediatrics general elective.

**Credit Hours:** 5

**Prerequisites:** CH\_HTH 6000; Restricted to fourth year medical students

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**CH\_HTH 6726: Child Health Rural Elective**

Students will enhance their knowledge about patient-centered care of children through active participation in a primarily outpatient clinical experience. Limited inpatient experience may be offered as well.

**Credit Hours:** 5

**Prerequisites:** CH\_HTH 6000; restricted to medical students only

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**CH\_HTH 6825: General Child Health - Inpatient**

Goals/Objectives: To provide additional experience in general pediatrics in inpatient care. CURRICULUM: The student will function as a member of the house staff team assuming many of the roles of the first year resident in patient care. This includes working up of patient's management plans, rounding, staffing, conferences, etc. Night coverage with supervision is included.

**Credit Hours:** 5

**Prerequisites:** Child Health Clerkship

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**CH\_HTH 6826: General Child Health - Outpatient**

Goals/Objectives: To provide additional experience in general pediatrics in outpatient care. CURRICULUM: The student will function as a member of the healthcare team. This includes taking histories, performing physical exams, and working up patient management plans. This may require working evening clinic and Saturday clinic in addition to regular daytime clinics.

**Credit Hours:** 5

**Prerequisites:** Child Health Clerkship

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**CH\_HTH 6827: Neonatology/Neonatal Intensive Care Unit**

Goals/Objectives: To gain experience: 1) in the evaluation, diagnosis, and management of sick newborns, and 2) in the performance of specialized procedures necessary for ICU care. CURRICULUM: The student will function as a first-year house officer, with his/her own neonatal ICU patients for initial work-up and management, under the supervision of the PL-2 or PL-3 and attending staff. (rotation at Columbia Regional Hospital)

**Credit Hours:** 5

**Prerequisites:** Child Health Clerkship

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**CH\_HTH 6828: Pediatric Intensive Care Unit**

Goals/Objectives: 1) To provide the student with the initial approach and management of children requiring care in the Pediatric Intensive Care Unit. 2) To provide the student with the basics of airway management in children. 3) To provide the student with an understanding of the preoperative assessment with preparation of pediatric patients. 4) To provide the student with an introduction to the perioperative management of common pediatric surgical problems. CURRICULUM: Students in this elective will spend time in both the Pediatric ICU and the operating rooms. They will be required to participate in daily rounds in the PICU and follow the medical/surgical patients admitted to the PICU.

**Credit Hours:** 5

**Prerequisites:** Child Health Clerkship

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**CH\_HTH 6829: Pediatric Neurology**

Pediatric Neurology

**Credit Hours:** 5

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**CH\_HTH 6912: Introduction to Adolescent Medicine**

The rotation is primarily an outpatient experience, though the student may be asked to do inpatient consultations with the attending physician on service. In addition to learning and practicing primary care of adolescent patients the elective will present an in-depth experience of adolescent medicine as a subspecialty, including, but not limited to, conditions such as eating disorders, disorders of puberty and menstruation, obesity, ADHD, and substance abuse. Additional teaching methods used include a pre-post test, lectures, and readings relevant to adolescent medicine. Completion of the Child Health Clerkship: CH\_HTH 6000 and CH\_HTH 6010.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**CH\_HTH 6913: Introduction to Pediatric Endocrinology**

The rotation is primarily an outpatient experience, though the student may be asked to do inpatient consultations with the attending physician on service. The elective will present an in-depth experience of diabetes/endocrinology as a subspecialty, including, but not limited to, exposure to disorders in growth and puberty, obesity, abnormalities in thyroid function and managing blood glucose levels in patients with type 1 diabetes. Additional teaching methods used may include lectures and readings relevant to this subspecialty.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

**Recommended:** Completion of the Child Health Clerkship (CH\_HTH 6000 or CH\_HTH 6010) is suggested but not required

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**DERM 6233: ABS Dermatology Research**

ABS Dermatology Research

**Credit Hours:** 5

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**DERM 6235: ABS Dermatology Research and Review**

ABS Dermatology Research and Review

**Credit Hour:** 5-10

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**DERM 6450: Dermatology I**

The Dermatology rotation is designed to provide the medical student with a broad general base in clinical dermatology for the non-dermatologist. During the rotation the student should: Enhance the visual diagnostic skills and related reasoning used in dermatology; Become familiar with a select list of dermatologic conditions commonly seen and best treated by the non-dermatologist; Gain familiarity with certain dermatologic conditions which require a high index of suspicion by all physicians because of their danger to life or risks to public health; Become familiar with dermatologic treatment regimens for the non-dermatologist and guidelines for appropriate referral of cases; Learn appropriate use of both systemic and topical dermatologic medications; Learn basic punch, shave, and excisional biopsy techniques; Become proficient in skin surveillance, especially early detection of skin cancer. Students are evaluated using a standard evaluation. The student's knowledge of subject matter is evaluated in the following settings: informal discussion during clinics, ward rounds, inpatient consultation rounds and scheduled conferences.

**Credit Hours:** 5

**Prerequisites:** Internal Medicine Clerkship

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**DERM 6750: Dermatology I - Rural**

The Dermatology rotation is designed to provide the medical student with a broad general base in clinical dermatology for the non-dermatologist. During the rotation the student should: Enhance the visual diagnostic skills and related reasoning used in dermatology. Become familiar with a select list of dermatologic conditions commonly seen and best treated by the non-dermatologist. Gain familiarity with certain dermatologic conditions which require a high index of suspicion by all physicians because of their danger to life or risks to public health. Become familiar with dermatologic treatment regimens for the non-dermatologist and guidelines for appropriate referral of cases. Learn appropriate use of both systemic and topical dermatologic medications. Learn basic punch, shave, and excisional biopsy techniques. Become proficient in skin surveillance, especially early detection of skin cancer.

**Credit Hours:** 5

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**DERM 6856: Dermatology II**

This elective rotation is an expansion of the objective goals outlined for Dermatology I. The student is expected to expand the depth and breadth of his/her dermatology experiences and knowledge. Enhance the visual diagnostic skills and related reasoning used in dermatology. Become familiar with a select list of dermatologic conditions commonly seen and best treated by the non-dermatologist. Gain familiarity with certain dermatologic conditions which require a high index of suspicion by all physicians because of their danger to life or risks to public health. Become familiar with dermatologic treatment regimens for the non-dermatologist and guidelines for appropriate referral of cases. Learn appropriate use of both systemic and topical dermatologic medications. Learn basic punch, shave, and excisional biopsy techniques. Become proficient in skin surveillance, especially early detection of skin cancer. As Dermatology II is an extension of the Dermatology I curriculum, Dermatology II students are expected to master the above objectives. In addition, they are expected to expand their clinical skills related to the diagnosis and treatment of dermatologic diseases and they will have increased responsibilities for patient education. It is expected that they will further their surgical skills including biopsies, simple excisions, and

basic cryotherapy. They will also become proficient in basic laboratory procedures including KOH and scabies prep.

**Credit Hours:** 5

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**DERM 6910: Clinical Dermatology Elective**

The 2 week elective in Dermatology will allow students to participate in a wide breadth of general, pediatric, and surgical dermatology. Students will participate in clinics and in weekly didactic sessions. Students will also complete the American Academy of Dermatology online student modules and the self-evaluation that is provided.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school. Must have completed at least 1 core clinical rotation

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**F\_C\_MD 6001: Family Medicine Clerkship**

Core learning experiences take place in ambulatory clinic settings. Students work with experienced clinicians and senior residents, spending time in University teaching practices and in community-based practices. Students also may spend time seeing patients in emergency room, hospital, nursing home settings and taking call with residents and practicing physicians. A high volume of patients of all ages with a wide range of problems is encountered. Many patients will have undifferentiated problems.

**Credit Hours:** 8

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**F\_C\_MD 6011: Rural Family Medicine Clerkship**

Rural Family Medicine Clerkship

**Credit Hours:** 8

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**F\_C\_MD 6021: Springfield Family Medicine Clerkship**

Core learning experiences take place in ambulatory clinic settings. Students work with experienced clinicians and senior residents, spending time in University teaching practices and in community-based practices. Students also may spend time seeing patients in emergency room, hospital, nursing home settings and taking call with residents and practicing physicians. A high volume of patients of all ages with a wide range of problems is encountered. Many patients will have undifferentiated problems.

**Credit Hours:** 8

**Prerequisites:** successful completion of the first two years of medical school

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**F\_C\_MD 6036: SCC Palliative Care Elective**

Students will learn a multidisciplinary approach to the care of the palliative care patient while working in a variety of clinical settings. This is an inpatient and outpatient experience in a variety of settings that represent different levels and types of care available to people with a terminal condition. Each week students will work with palliative care physicians at either Cox or Mercy Palliative Care Service and/or a Hospice agency. Students will have the opportunity to see patients undergoing palliative care assessment and observe nursing staff and professional therapy staff in their work with patients and families. Students will participate in various palliative care- related conferences. Students will participate in inpatient palliative care services as well as outpatient palliative care clinics. The student will work with faculty in

the Departments of Family and Community Medicine as well as Internal Medicine.

**Credit Hours:** 5

**Prerequisites:** Successful completion of 5 of 7 core clerkships, one of which must be either Family Medicine or Internal Medicine. IN\_MED 6002, 6012, 6022, or 6102. F\_C\_MD 6001, 6011, 6021, or 6101

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**F\_C\_MD 6101: Remediation Family Medicine Clerkship**

Enrolled students are those who received an unsatisfactory grade in a Family Medicine Clerkship at any Mizzou Med location or site. This course allows them the opportunity to rectify a deficiency.

**Credit Hours:** 8

**Prerequisites:** F\_C\_MD 6001 Family Medicine Clerkship, received unsatisfactory grade

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**F\_C\_MD 6251: ABS Evidence Based Medicine**

ABS Evidence Based Medicine

**Credit Hours:** 5

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**F\_C\_MD 6253: ABS Family and Community Medicine Research**

ABS Family and Community Medicine Research

**Credit Hour:** 5-10

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**F\_C\_MD 6255: ABS Family and Community Medicine Research and Review**

ABS Family and Community Medicine Research and Review

**Credit Hours:** 5

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**F\_C\_MD 6475: Family Medicine Elective (FP Orientation)**

This elective is for Integrated Residents in the Department of Family and Community Medicine only. Two core clinical rotations are required, including Family Medicine Clerkship. During this one year longitudinal experience, Integrated Residents will work closely with senior residents and faculty members to enhance the knowledge and skills needed to care for patients in a comprehensive family medicine continuity clinic. Integrated Residents are required to attend orientation activities during 15A. Regular attendance to Wednesday departmental Grand Rounds and Tuesday afternoon Resident Seminars is also expected.

**Credit Hours:** 5

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**F\_C\_MD 6477: Family Medicine Elective Preceptorship**

May be available as a rural offsite elective: contact the MU-AHEC Coordinator. Goals/Objectives: During this elective the student works closely with a family physician in private practice. Students both observe the preceptor's patient encounters and take primary responsibility for several patients each day, discussing diagnosis and formulating management plans with supervision by the preceptor. The Preceptorship also provides opportunities not available elsewhere in the medical school curriculum, including seeing the patient's illness in its context, assessing a community's health care system, and learning about practice management. Evaluations: Evaluation of the student is based on the preceptor's evaluation and comments. Notes: Site must be pre-approved by the Course Director.

**Credit Hours:** 5

**Prerequisites:** Students should have completed at least two clinical blocks, plus the Family Practice Clerkship

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**F\_C\_MD 6479: Family and Community Medicine Research**

Family and Community Medicine Research

**Credit Hours:** 5

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**F\_C\_MD 6481: Clinical Nutrition**

Clinical Nutrition

**Credit Hours:** 5

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**F\_C\_MD 6483: Preventive/Community Medicine**

Preventive/Community Medicine

**Credit Hours:** 5

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**F\_C\_MD 6485: Geriatrics-Family and Community Medicine Elective**

Goals/Objectives: This is an outpatient experience in a variety of settings. Each week students will: 1. Work with Dr. David Cravens and other health care providers at Lenoir Village, Lenoir Manor, Lenoir Health Care and Maplewood Apartments. These all represent different levels and types of care available to elders. a. Students will develop an understanding of the available care and residential options that elders utilize. 2. Work with several geriatricians in the SAGE Clinic and/or Geriatrics Clinic at Green Meadows. a. Students will improve their understanding of care of elders in the outpatient setting. b. Students will also see patients undergoing geriatric assessment and thus develop a better understanding of the multidisciplinary approach to geriatric assessment. 3. Additional experiences may be arranged depending on the student's interests. 4. Participate in the various conferences related to geriatrics. Evaluations: Final evaluation will be determined by the attending physicians supervising the student during the block.

**Credit Hours:** 5

**Prerequisites:** Must have completed all core clerkships

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**F\_C\_MD 6486: Evidence Based Medical Writing in Family Medicine**

Student will co-author a draft of an evidence-based article under the supervision of FCM faculty with evidence-based writing experience. Before writing begins, students complete an evidence-based medicine curriculum using online modules. FCM integrated residents will also participate in a departmental editorial review session.

**Credit Hours:** 5

**Prerequisites:** restricted to 4th year medical students

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**F\_C\_MD 6487: Family and Community Medicine Palliative Care Elective**

This is an inpatient and outpatient experience in a variety of settings that represent different levels and types of care available to people with terminal condition.

**Credit Hours:** 5

**Prerequisites:** F\_C\_MD 6001; restricted to 4th year medical students

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**F\_C\_MD 6775: Family Medicine Preceptorship - Rural**

Family Medicine Preceptorship - Rural

**Credit Hours:** 5

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**F\_C\_MD 6776: RURAL FAMILY MED ELECT**

Rural Family Medicine Elective

**Credit Hours:** 5

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**F\_C\_MD 6777: Rural Health Policy and Legislative Advocacy**

Elective content will focus on the intersection of rural medicine, health policy, and legislative advocacy. Course Goals: 1) To inform and educate students about rural health policy issues at the local, state, and national levels. 2) To train medical students to be informed advocates of rural health policy issues at the local, state, and national levels. To apply, medical students must complete the Rural Track Elective Application posted on the MU AHEC website <http://medicine.missouri.edu/ahec/rural-track-elective.html>. In the notes section of the application, the student must document a rationale for applying for this course. (Maximum length - 1 paragraph).

**Credit Hours:** 5

**Prerequisites:** M4 status. Applicants must complete either the Rural Track Summer Community Program or the Rural Track Clerkship Program prior to enrollment. Students will share first-hand experiences from rural track placement(s) with legislators to advocate for the MU Rural Track Pipeline Program and to influence rural health policy in Missouri

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**F\_C\_MD 6875: Family Medicine Onsite Externship**

Goals/Objectives: The student who is on the onsite track of the externship will be a member of the Family Practice Inpatient Team that is responsible for providing care to Family Practice patients in the hospital. The team consists of an attending, physician, two third-year residents, and two or three first-year residents. The student will be expected to function as a member of the team, attending rounds on a daily basis and assuming responsibility, under supervision, for the care of some of the patients. Each student will have 4-5 nights of call including weekend days. Students will be responsible for providing care, with supervision, to those patients admitted while they are on call. Students will also be expected to follow their patients after discharge, making home visits or nursing home visits and seeing them in follow-up at the clinic as indicated. Students will also have exposure to ambulatory family medicine. Each student will work closely in the clinic with one of the third-year residents assigned to the inpatient team. The student will attend each of the resident's clinics whether they are at Green Meadows, Fulton, or Fayette.

**Credit Hours:** 5

**Prerequisites:** Students should have completed at least two clinical blocks, plus the Family Practice Clerkship

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**F\_C\_MD 6876: Family Medicine Offsite Externship**

Several different types of experiences are available for the offsite track of the externship. Students have the opportunity to work at selected Indian Health Service sites that provide the appropriate mix of inpatient and outpatient experiences. A list of these IHS sites and the students' evaluations are available in the course office. These offer high volume and high levels of responsibility. Planning needs to begin early in the third year. Offsite externship experiences are also available in certain community-based family practices and in certain family practice residency programs. A list of pre-approved sites is available in the course office. All of the sites available for the offsite experience have been carefully

selected by the faculty based on previous experiences of fourth-year students. These sites offer an appropriate level of patient care responsibility with supervision. Offsite practices need to be approved in advance by the course director and often require planning 6 to 12 months in advance. Students considering offsite rotations will be expected to have a clear idea of how these experiences will offer unique advantages to their personal and professional development, and how they will meet the course criteria. Many offsite locations used in the past for the Family Medicine Clerkship will not satisfy the externship requirement. They still offer excellent experiences and could be taken as electives. Students on the offsite track will be evaluated with respect to their ability to collect, process, and analyze information, engage in clinical reasoning, and formulate appropriate diagnoses and treatment plans. Sites must be pre-approved by the Course director.

**Credit Hours:** 5

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**F\_C\_MD 6877: Rural Family Medicine Elective**

Rural Family Medicine Elective

**Credit Hours:** 5

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**F\_C\_MD 6878: Family Medicine Maternity Care-Advanced Selective**

Family Medicine Maternity Care-Advanced Selective

**Credit Hours:** 5

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**F\_C\_MD 6879: Palliative Care Selective**

This is an inpatient and outpatient experience in a variety of settings that represent different levels and types of care available to people with a terminal condition. Each day the student will work directly with palliative care physicians, as well as the rest of the multidisciplinary team, as part of the University Hospital Supportive and Palliative Care Service. They will also have the opportunity to work with a medical director of a local Hospice agency, who is a faculty member of the University of Missouri. Students will be expected to function as a member of the Palliative Care Team. Students will have the opportunity to actively participate in the assessment and care of patients under the direction of the Palliative Care Interdisciplinary team. Students will work alongside palliative care attending physicians, nursing staff, social workers, and pastoral care team members in their work with patients and families. Students will participate in various palliative care-related conferences including Interdisciplinary Team Meetings, didactics, patient remembrance and memorial services, self-care rounds, monthly team business meetings and the monthly Palliative Care hospital committee meeting. Additional experiences will include outpatient palliative care clinics at Ellis Fischel, bi-weekly community Hospice Interdisciplinary team meetings, patient home assessments and nursing visits with hospice staff, and completion of an oral presentation to the Palliative Care Team as part of their assessment and evidence of mastery of course objectives.

**Credit Hours:** 5

**Prerequisites:** Fourth year medical student. Must have completed 6 of the 7 core clerkships

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**F\_C\_MD 6928: Primary Care Sports Medicine Elective**

Students will work with a multi-disciplinary sports medicine team, providing hands on clinical services in an outpatient setting. Participants will gain experience working with primary care sports medicine physicians, orthopedic surgeons, physical therapists and cast technicians.



**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**F\_C\_MD 6929: Rural Family Medicine Elective Two-Week**

The student will work with Callaway Physicians attending and resident physicians primarily in the clinic setting to experience primary care delivered in the rural setting. During this time the students will have opportunities to participate in patient care in the clinic, procedures including minor dermatologic procedures, colposcopy, splinting, OB non stress testing and fetal heart monitoring, cardiac treadmill stress testing, and other procedures as available. Rotation length is two weeks.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**F\_C\_MD 7001: Topics in Family and Community Medicine**

Selected topics of interest related to family and community medicine.

**Credit Hours:** 3

**Prerequisites:** Understanding of research methods, statistics (basic) and graduate, post graduate or instructor' consent

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**F\_C\_MD 7300: Problems Community Health Medicine Practice**

Directed exploration of community health problems.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**F\_C\_MD 7310: The Health Care System**

Overview of health care system and relationship between its components. Focuses on changing nature of the system and issues confronting the future health care system.

**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**F\_C\_MD 7350: Special Readings in Community Health**

Extensive reading and critical analysis of classical and current studies in selected areas of community health.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**F\_C\_MD 7400: Problems in Community Health**

Intensive study of an area of community health.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**F\_C\_MD 7490: Research in Community Health**

Independent investigation of some problem in community health to be presented as a thesis. Graded on a S/U basis only.

**Credit Hour:** 1-99

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**F\_C\_MD 7492: Field Experience in Community Health Education**

Field practice in a selected community setting under faculty or other competent supervision .

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**Credit Hour:** 1-99

**Prerequisites:** Restricted to students specializing in community health education; consent of community health education faculty

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**F\_C\_MD 7750: Physical Function and Older Adults**

(same as ARCHST 7640, HMI 7750, H\_D\_FS 7750, NURSE 7750, P\_HLTH 7750, and SOC\_WK 7752). This course takes an interdisciplinary approach to understanding and improving the physical function and independence of older adults and explores approaches to alleviate disabling conditions that interfere with physical function and quality of life in old age. Graded on A-F basis only.

**Credit Hours:** 3

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**F\_C\_MD 7751: Psychosocial Function and Older Adults**

(same as ARCHS] 7650, HMI 7751, H\_D\_FS 7751, NURSE 7751, P\_HLTH 7751 and SOC\_WK 7751). This course takes an Interdisciplinary approach to understanding the psychosocial function of older adults and explores approaches to alleviate disabling conditions that interfere with psychosocial function and quality of life in old age. Graded on A/F basis only.

**Credit Hours:** 3

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**F\_C\_MD 8330: Statistical Aspects of Public Health**

Classification and summarization of data used in public health practice and research. Probability, sampling, hypothesis testing. Correct and incorrect use of statistics in the literature.

**Credit Hours:** 3

**Corequisites:** concurrent registration in F\_C\_MD 8420 or instructor's consent

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**F\_C\_MD 8410: Principles and Practices in Medical Education**

An examination of the past and present influences on the education of physicians, the application of adult education principles and the future approaches to medical education.

**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**F\_C\_MD 8411: Learning Strategies in Preclinical & Clinical Educ. of Physicians**

Examination of curricular strategies in preclinical and clinical education of medical students and graduate medical education. Emphasis will be placed on different types of instructional strategies.

**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**F\_C\_MD 8420: Principles of Epidemiology**

Examines methods of study of disease frequency and distribution in populations. Utilizes small group discussions for understanding of current medical literature.

**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**F\_C\_MD 8421: Clinical Epidemiology/Evidence Based Medicine**

(same as V\_P BIO 8421). Advanced epidemiologic theory and methods in the study and control of infectious and noninfectious diseases.

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**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**F\_C\_MD 8422: Clinical Research Methods I**

Principles of designing, implementing and reviewing research in the health sciences.

**Credit Hours:** 3

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**F\_C\_MD 8423: Clinical Research Methods II**

This is a continuation of the Clinical Research Methods I (CRM\_I) introductory course on the multi-method approach to clinical research. Similar to the previous course, it covers both quantitative and qualitative research methods, but includes advanced applications.

**Credit Hours:** 3

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**F\_C\_MD 8424: Comparative Effectiveness Research**

Advanced research class that presents a framework for analyzing observational studies and randomized trials for comparative effectiveness. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** Two recent semester-length courses in statistics such as NURSE 8020 or STAT 2500 or above; Working knowledge of managing and analyzing data in SPSS or SAS; Research methods; or consent of instructor

**Recommended:** One semester of epidemiology is strongly recommended

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**F\_C\_MD 8425: Participatory Approaches for Health and Health Systems**

(same as NURSE 8425). Focuses on the use of participatory approaches for the design of health and health-system interventions. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** NURSE 8100 or F\_C\_MD 8420 or instructor consent

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**F\_C\_MD 8430: Applications of Evidence-Based Medicine I**

Students will participate in editing, presentation and publication of evidence-based reviews of current medical literature.

**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**F\_C\_MD 8431: Applications of Evidence-Based Medicine II**

Students will participate in editing, presentation and publication of evidence-based reviews of current medical literature.

**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**F\_C\_MD 8450: Research in Community Health**

Original research in community health not leading to a thesis but requiring a formal research report.

**Credit Hour:** 1-99

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**F\_C\_MD 8491: Field Experience in Family and Community Medicine**

Supervised teaching experience in the preclinical, clinical, and residency programs.

**Credit Hour:** 1-6

**Prerequisites:** instructor's consent

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**HMI 4420: Fundamentals of Bioinformatics**

(cross-leveled with HMI 7420). The purpose of this course is to provide perspective on the fundamentals of exploration of biological knowledge using computers. As technologies such as microarray, sequencing, and biomarkers become more pervasive, they are impacting not only the development of science, but also domains such as health care, nutrition, and ethics. This course provides a description of fundamental bioinformatics concepts such as sequencing, proteomics, metabolomics, and biological pathways, and illustrates them with short informatics experiments. Mainly online resources will be used, so no programming is necessary. Also, the course includes a short primer of molecular biology, so background in molecular biology is not required.

**Credit Hours:** 3

**Prerequisites:** Departmental consent required

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**HMI 4440: Health Information Technology**

(cross-leveled with HMI 7440). In this course, the student will learn 1) the visual basic programming language and how to design a visual basic application 2) the SQL database language and how to design and operate a database, and 3) HTML, HTML5, javascript and vbscript languages and how to design a client-server database application using Visual Basic and a web database application. Applications will be healthcare focused.

**Credit Hours:** 3

**Prerequisites:** Departmental consent required

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**HMI 6495: Health Care Management**

Health Care Management

**Credit Hours:** 5

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**HMI 6935: Healthcare Ethics for Physicians**

Students will participate in 8-two hour lecture-discussion sessions over the 2-week period. In each session, the instructor lectures for one hour and then the class discusses concepts and cases for one hour. Topics may include ethical theories and frameworks, decision-making capacity, informed consent, truth-telling and deception, medical errors, confidentiality, surrogate decision-making, medical futility, end-of-life care and euthanasia, the physician-patient relationship, paternalism, vaccinations, newborn screening, gene therapy, treating minors, treating individuals with disabilities, deception of third-party payers, problematic documentation techniques, sexual harassment and discrimination, and conflicts of interest. When not participating in the lecture-discussion session, students will use their time reading the assigned material. This should take about two hours per day. There are no required student presentations but a high level of participation in discussion is expected. Two take-home exams will be given.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**HMI 6938: Biomedical Informatics**

Students will participate in 10-two hour lecture-discussion sessions over the 2-week period. These sessions will cover current and future developments in biomedical informatics. Selected topics include: electronic health records; public health informatics; imaging; practice management systems; information exchanges; data standards; privacy and security; consumer informatics; mobile technology; search engines; telehealth; bioinformatics databases; next generation sequencing; regulatory pathways; emerging trends.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**HMI 7410: Introduction to the US Health Care System**

This is a survey course about the American health system, meant to provide a conceptual foundation for students to think critically about the US health system and to build upon in their future related courses. It includes concepts and language in health care, public health, and personal health and provides an understanding of how these domains of health interrelate. Particular focus is given to health care delivery, including how health care services are organized, delivered, paid for, and measured. Selected key, forward-looking issues are covered. The roles of management, leadership, and physicians are highlighted. A resource bank and regular flow of good information sources is developed. Business writing skills are emphasized.

**Credit Hours:** 3

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**HMI 7420: Fundamentals of Bioinformatics**

(cross-leveled with HMI 4420). The purpose of this course is to provide perspective on the fundamentals of exploration of biological knowledge using computers. As technologies such as microarray, sequencing, and biomarkers become more pervasive, they are impacting not only the development of science, but also domains such as health care, nutrition, and ethics. This course provides a description of fundamental bioinformatics concepts such as sequencing, proteomics, metabolomics, and biological pathways, and illustrates them with short informatics experiments. Mainly online resources will be used, so no programming is necessary. Also, the course includes a short primer of molecular biology, so background in molecular biology is not required.

**Credit Hours:** 3

**Prerequisites:** Open to undergraduates with dual enrollment

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**HMI 7430: Introduction to Health Informatics**

(same as INFOINST 7430). Introduction to the use of clinical information systems in healthcare. Topics include clinical data, standards, electronic medical records, computerized provider order entry, decision support, telemedicine, and consumer applications.

**Credit Hours:** 3

**Prerequisites:** departmental consent

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**HMI 7431: Foundation of Public Health Informatics**

This course will cover foundational knowledge relevant to Public Health Informatics (PHI). The purpose of this course is to expose students to emerging research and application areas in the field of PHI. It will enhance abilities to know when and how to use theories, concepts, and tools of informatics applied to public health. The emphasis of the course is on the use of informatics tools and practices in public health and the

existing and evolving relationship between clinical and public health systems. The focus is on PHI including topics such as data exchange and standards, interoperability, use of informatics tools, applying informatics to public health communication and dissemination, surveillance systems, public health policy and project management.

**Credit Hours:** 3

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**HMI 7432: Health Database Management and Public Health Data Systems**

This course will cover foundational knowledge relevant to database management and public health data systems for Public Health Informatics (PHI). The purpose of this course is to provide students with concepts relevant to the effective use of data, information, and knowledge tools to build, manage, merge, retrieve, and analyze public health data from appropriate health data systems. The emphasis of the course is to use, develop and adapt public health information systems as needed to support public health efforts through use of public health informatics tools and practices to support existing and evolving relationships between clinical and public health systems. The focus is to plan, develop, implement, manage and evaluate database management systems and health data systems that meet the needs of public health practice through PHI.

**Credit Hours:** 3

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**HMI 7440: Health Information Technology**

(cross-leveled with HMI 4440). In this course, the student will learn 1) the visual basic programming language and how to design a visual basic application 2) the SQL database language and how to design and operate a database, and 3) HTML, HTML5, javascript and vbscript languages and how to design a client-server database application using Visual Basic and a web database application. Applications will be healthcare focused.

**Credit Hours:** 3

**Prerequisites:** college algebra and statistics

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**HMI 7471: Introduction to Accounting and Finance in Health Care**

This course introduces the current financial environment in which providers operate and the fundamentals of financial accounting, with an emphasis on accounting and financial management principles and concepts that are critical to decision making for department-level management of health services organizations. This course provides the foundation for the second healthcare financial management course offered in the second year of this program.

**Credit Hours:** 3

**Prerequisites:** Graduate standing or consent of instructor

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**HMI 7564: Health Ethics Theory**

An introduction to health ethics theory and methodology. We discuss metaethics and normative ethics theories, normative ethics in health ethics and methods of ethics case work up.

**Credit Hours:** 3

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**HMI 7566: HIPAA, Social Media, and the Ethics of Health Information**

An introduction to how the increasing use of distance-based technologies, computers, and online communications may impact the ethical delivery of health care. Examples of questions to be addressed: Is

it possible that the increasing use of computers in healthcare has made things worse? How should HIPAA be interpreted and why is there such confusion about it? Should patients be able to "post" negative comments about providers on social media sites? What should be done about the increasing amounts of personal information healthcare corporations are collecting on patients?

**Credit Hours:** 3

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**HMI 7567: Health Organizational Ethics**

Examples of questions to be addressed: Should hospitals and doctors try to maximize profits? Do providers have a moral obligation to serve people who cannot pay? Is it okay to deceive an insurance company if it means better patient care? What should employees do if their employer is committing fraud? Is it ethical for hospitals to drug-test employees and investigate their private lives? What is the ethical way to hire and fire healthcare staff? What should you do if your supervisor is evil?

**Credit Hours:** 3

**Prerequisites:** HMI 7564 or equivalent course, or permission of instructor

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**HMI 7750: Physical Function and Older Adults**

(same as F\_C\_MD 7750, ARCHST 7640, H\_D\_FS 7750, NURSE 7750, P\_HLTH 7750, and SOC\_WK 7752). This course takes an interdisciplinary approach to understanding and improving the physical function and independence of older adults and explores approaches to alleviate disabling conditions that interfere with physical function and quality of life in old age. Graded on A-F basis only.

**Credit Hours:** 3

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**HMI 7751: Psychosocial Function and Older Adults**

(same as ARCHST 7650, F\_C\_MD 7751, H\_D\_FS 7751, NURSE 7751, P\_HLTH 7751 and SOC\_WK 7751). This course takes an Interdisciplinary approach to understanding the psychosocial function of older adults and explores approaches to alleviate disabling conditions that interfere with psychosocial function and quality of life in old age. Graded on A- basis only.

**Credit Hours:** 3

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**HMI 8090: Thesis Research in Health Management and Informatics**

Research leading to a thesis. May be repeated to maximum of 9 hours.

**Credit Hour:** 1-6

**Prerequisites:** Advisor's consent

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**HMI 8401: Topics in Health Management and Informatics**

Organized study of selected topics. Subjects will vary from semester to semester. May be repeated for credit with departmental consent.

**Credit Hours:** 3

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**HMI 8435: Information Security, Evaluation and Policy**

The purpose of this course is to provide an extensive overview, practical applications and analyses of functionality and usability evaluations of health care information technology, and to discuss the impact of security on the present and future health care settings.

**Credit Hours:** 3

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**HMI 8437: Data Warehousing and Data/Text Mining for Health Care**

An introduction to the basic concepts of data warehouse and data/text mining, creating an understanding of why we need those technologies and how they can be applied to healthcare problems.

**Credit Hours:** 3

**Prerequisites:** HMI 8441

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**HMI 8441: Biomedical and Health Vocabularies and Ontologies**

Basic and advanced concepts of controlled terminologies and their use in the representation of biomedical information and knowledge, with emphasis on terminology management in the health care enterprise. Syntactic and semantic structure of controlled terminologies are examined and a number of representative terminologies are analyzed.

**Credit Hours:** 3

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**HMI 8443: Enterprise Information Architecture for Knowledge Driven Healthcare Systems**

Organization and development of infrastructure necessary to support an enterprise information system for patient care. Components of architecture are introduced in a problem-based approach, case examples are presented as the basis for addressing specific attributes of the components, as well as problems facing the design of an enterprise information system for health care.

**Credit Hours:** 3

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**HMI 8450: Methods of Health Services Research**

Writing intensive course provides students with basic understanding of literature search, experimental designs, evaluation methods, ethics, reporting and application of health services research. Practical research problems are discussed and students prepare a professional, managerially relevant research proposal.

**Credit Hours:** 3

**Prerequisites:** HMI 7410; Satisfactory completion of a college-level course in statistics

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**HMI 8451: Individual Executive Management Studies**

Students will investigate and address important issues in their organizations. Students will use scientific evidence and techniques to solve applied problems. They will develop data collection protocols, collect and analyze data, draw conclusions, and develop recommendations using basic research methods tools. They will provide actionable and feasible recommendations based on their analysis.

**Credit Hours:** 3

**Prerequisites:** HMI 7410, HMI 8450 or permission of instructor

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**HMI 8453: Executive Management Studies**

Students will use scientific evidence and techniques to solve applied problems in health care organizations. Students will serve as professional consultants, working within small teams to develop project specifications and plans in collaboration with their clients. They will develop data collection protocols, collect and analyze data, draw conclusions and develop recommendations using basic research methods tools. They will provide actionable, feasible recommendations to their clients based on their analysis. Graded on A/F basis only.

**Credit Hours:** 3

**Prerequisites:** HMI 7410; Graduate standing or permission of the instructor

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**HMI 8460: Administration of Health Care Organizations**

Analyzes health care organizations, emphasizing organizational structure, and strategy, and managerial leadership. Topics include governance, adaptation, design, interorganizational networks, and organizational performance.

**Credit Hours:** 3

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**HMI 8461: Managing Human Resources in Health Care Organizations**

Provides a framework for understanding and thinking strategically about employee relations and management of people in organizations, drawing on insights from social sciences to explore how psychological, economic, social, and cultural forces influence human resources management in health care.

**Credit Hours:** 3

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**HMI 8470: Strategic Planning and Marketing for Health Care Organizations**

Analysis of strategic planning and services management and marketing concepts, techniques, and tools in the health care industry. Includes analyzing the environment, assessing the organization's strengths and weaknesses, formulating strategy to achieve competitive advantage, and implementing strategy through service management and marketing.

**Credit Hours:** 3

**Prerequisites:** HMI 7410, and HMI 8524

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**HMI 8472: Financial Management for Health Care Organizations**

Application of concepts, tools and techniques of financial management and their interrelationships as they apply to current and future operation of health care organizations. Prerequisites: For Residential students: HMI 7410, HMI 7471, HMI 8460, HMI 8524. For Executive students: HMI 7410, HMI 8460, HMI 8524, and satisfactory completion of college-level courses in managerial accounting and financial management or satisfactory completion of HMI's online accounting and finance module.

**Credit Hours:** 3

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**HMI 8478: Knowledge Management in Health Care**

Representing clinical terms, concepts and knowledge in a form for manipulation by intelligent systems. Theoretical formalisms and conceptual representations of medical information. Examination of knowledge engineering tools and decision support systems.

**Credit Hours:** 3

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**HMI 8485: Problems in Health Management and Informatics**

Intensive study of an area of health services management.

**Credit Hour:** 1-6

**Prerequisites:** instructor's consent

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**HMI 8515: Problems in Medical Ethics and Clinical Ethics Consultation Practicum**

The Problems in Medical Ethics Course is a practicum based course with a hands-on clinical ethics consultation component. The course will provide the student with a tailored learning experience that will encourage

and develop skills and a working knowledge about health care ethics, and the ability to respond effectively when confronted with the difficult ethical dilemmas that may be encountered at multiple levels in the complex arena of health care. Specifically students will cultivate skills which will optimize their ability to work as an ethics consultant in a multidimensional and diverse society as well as an inclusive health care environment. The course is designed with flexibility in mind, however there are mandatory onsite components which will require the student to attend structured meetings, consultations and presentations.

**Credit Hours:** 5

**Prerequisites:** M-4 status for medical students. For Graduate students, HMI 7564 - Health Ethics Theory and HMI 8565 - Health Care Ethics and permission of instructor

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**HMI 8524: Health Economics**

Building upon previous knowledge of basic economic theories, concepts, and tools, the structure, organization, activities, functions, and problems of health and medical care are considered from an economics perspective.

**Credit Hours:** 3

**Prerequisites:** microeconomics

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**HMI 8544: Managerial Epidemiology (Population Health Management)**

Examination of basic epidemiological concepts and methods as applied to health services management. Equal emphasis on applications of epidemiology to health services planning, quality monitoring, policy development, system development, and finance.

**Credit Hours:** 3

**Prerequisites:** Restricted to HMI students only

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**HMI 8545: Methods in Public Health Informatics/Biostatistics**

This course will cover foundational statistical knowledge and methods relevant to Public Health Informatics (PHI). The purpose of this course is to teach students to identify and perform appropriate statistical methods for the data analysis of data from many commonly used experimental designs in the field of PHI. The emphasis of the course is on the understanding of theoretical assumptions underlying these statistical methods. The focus of this course is to perform selected statistical analyses using, SPSS and/or R and to interpret statistical results, in a manner relevant to public health informatics in the context of public health. This course builds upon previous knowledge of basic statistics, concepts, and tools by applying them specifically to the public health field.

**Credit Hours:** 3

**Recommended:** college algebra

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**HMI 8546: Public Health Information and Visualization (GIS) in Public Health**

This course will cover foundational knowledge of Geographic Information Systems (GIS) relevant to Public Health Informatics (PHI). The purpose of this course is to learn basic descriptive and analytical functions of GIS for research and application areas in the field of PHI. The course emphasis is for students to gain hands-on experience in the use of GIS, mapping, and spatial data analysis software such as ArcGIS, R, and Instant Atlas. The focus is on the use of geographic information systems (GISs) in the analysis of public health data. No previous knowledge

of mapping or GIS is required, but one is expected to have a working knowledge of MS Office, Windows operating systems, and Biostatistics (prerequisites Methods in Public Health Informatics/Biostatistics). This course builds upon previous knowledge of basic statistics, concepts, and tools by applying them in a GIS context specific to Public Health Informatics.

**Credit Hours:** 3

**Prerequisites:** HMI 8545

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#### **HMI 8550: Health Data Analytics**

The purpose of this course is to provide you with an applied approach to analyze healthcare data. It will enhance abilities to know when and how to use theories, concepts, and tools of data analysis and statistics to evaluate and analyze health care data systematically. The emphasis of the course is on the use of data analysis in the health care field. The focus is on applying data analysis to health care data, problems and issues in the health care system, and on the data application necessary to make decisions based on the analysis. This course builds upon previous knowledge of basic statistics and analytics, concepts, and tools by applying them specifically to the health care system.

**Credit Hours:** 3

**Prerequisites:** college algebra and statistics or permission of instructor

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#### **HMI 8565: Health Care Ethics**

Explores ethics issues and controversies facing clinicians and healthcare administrators. Topics may include end-of-life care, imperiled newborns, maternal-fetal conflict, procreative liberty, genetic screening and enhancement, organ procurement and allocation, rationing, public health, workplace relationships, and conflicts of interest.

**Credit Hours:** 3

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#### **HMI 8571: Decision Support in Health Care Systems**

Applies principles and techniques of computer-assisted decision making to solve health care problems. Clinical and managerial applications of artificial intelligence, including expert systems reviewed. Advantages of integrating decision support programs with databases are discussed.

**Credit Hours:** 3

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#### **HMI 8573: Decision Making for Health Care Organizations**

Applies and integrates data and decision making techniques with process analytic and improvement tools and techniques. Also includes applications of spread sheets and relational databases in healthcare settings.

**Credit Hours:** 3

**Prerequisites:** Restricted to HMI students

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#### **HMI 8574: Health Care Law**

Survey of the function and methods of law as applied to health care administration and health care.

**Credit Hours:** 3

**Prerequisites:** HMI 7410, HMI 7471, HMI 8460, HMI 8524. Non HMI students with a Graduate or professional school career may be able to take the course with instructor consent

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#### **HMI 8575: Health Policy and Politics**

Overview and critical analysis of health policy issues in the United States, including how the dynamics of the policy making process have shaped outcomes, successful and unsuccessful, of a number of important policy initiatives.

**Credit Hours:** 3

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#### **HMI 8580: Project Management**

This course is designed to provide an in-depth understanding of the fundamentals of project management and its application to the provision of health care. A problem-based approach is used to frame both the theoretical underpinnings of project management and hands-on practical application. Students will develop an understanding of the foundations of project management designed to enable them to successfully complete the certification exam to become a certified project manager. Course content includes project scope development, project work breakdown, financial control, and human resources management for projects.

**Credit Hours:** 3

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#### **HMI 8610: Consumer Health Informatics**

Consumer health informatics explores the branch of medical informatics that analyzes consumers' needs for information; studies and implements methods of making information accessible to consumers; and models and integrates consumers' preferences into medical information systems.

**Credit Hours:** 3

**Prerequisites:** HMI 7430 or instructor's consent

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#### **HMI 8689: Field Experience in Health Management and Informatics**

Supervised field experience in approved health agencies and institutions. Opportunity for observation and service participation in various fields of health. Graded on an A-F basis only.

**Credit Hours:** 3

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#### **HMI 8810: Research Methods in Informatics**

(same as INFOINST 8810). Research Methods in Health and Bioinformatics is a writing intensive course that provides students with an understanding of research proposal development, literature searching, research synthesis, research designs, evaluation methods, and ethics. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** Second semester or later in PhD program or instructor's consent

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#### **HMI 8870: Knowledge Representation in Biology and Medicine**

(same as INFOINST 8870). The main topics presented in the course are: logic systems, knowledge representation methods, production systems and representation of statistical and uncertain knowledge. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** HMI 7430 and HMI 7440

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#### **HMI 9440: Technology Evaluation in Health Care Systems Research**

(same as NURSE 9470). Examines technology applications and evaluator methods used to determine outcomes, efficiencies,

effectiveness, satisfaction, and cost of using technology. May be repeated for credit.

**Credit Hours:** 3

**Prerequisites or Corequisites:** NURSE 9410 or faculty consent

**Prerequisites:** 6.0 credit of graduate statistics

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**IN\_MED 6002: Medicine Clerkship**

Students spend eight weeks on the medicine inpatient service at University Hospital and Harry S. Truman Veterans Hospital where they learn to care for adult patients with acute and chronic illnesses. Teaching emphasizes the principles of differential diagnosis and problem solving as well as the integration of basic science information into the art of patient care. Students also gain clinical experience in medical interviewing and physical examination.

**Credit Hours:** 8

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**IN\_MED 6012: Rural Medicine Clerkship**

Rural Medicine Clerkship

**Credit Hours:** 8

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**IN\_MED 6022: Springfield Medicine Clerkship**

Students learn to care for adult patients with acute and chronic illnesses. Teaching emphasizes the principles of differential diagnosis and problem solving as well as the integration of basic science information into the art of patient care. Students also gain clinical experience in medical interviewing and physical examination.

**Credit Hours:** 8

**Prerequisites:** successful completion of the first two years of medical school

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**IN\_MED 6035: SCC Medical Intensive Care**

Internists and medical sub-specialists frequently encounter patients with critical conditions that require unique skills. During this rotation medicine students will: 1. Provide assessment, management and follow-up of critically ill patients under the supervision of the medical critical care attending. 2. Be intimately involved in this multidisciplinary approach to patient care. 3. Work collaborative with medical attending physicians, nurses, pharmacists, respiratory therapists and nutritional support staff. 4. Work in a coordinated fashion with consulting physicians and services, social services, physical therapy workers, and the radiology, pathology laboratory departments and chaplain services.

**Credit Hours:** 5

**Prerequisites:** Successful completion of IN\_MED 6002 or IN\_MED 6012 or IN\_MED 6022 or IN\_MED 6102

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**IN\_MED 6102: Remediation Medicine Clerkship**

Enrolled students are those who received an unsatisfactory grade in a Medicine Clerkship at any Mizzou Med location or site. This course allows them the opportunity to rectify a deficiency.

**Credit Hours:** 8

**Prerequisites:** IN\_MED 6002 Medicine Clerkship, received unsatisfactory grade

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**IN\_MED 6261: ABS Medicine Investigation**

ABS Medicine Investigation

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**Credit Hours:** 5

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**IN\_MED 6263: ABS Internal Medicine Research**

ABS Internal Medicine Research

**Credit Hour:** 5-10

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**IN\_MED 6265: ABS IN MED RSCH/REVIEW**

ABS in Medicine Research Review

**Credit Hours:** 5

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**IN\_MED 6267: ABS Quality Improvement and Patient Safety**

ABS Quality Improvement and Patient Safety

**Credit Hours:** 5

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**IN\_MED 6365: ABS Internal Medicine Research and Review**

ABS Internal Medicine Research and Review

**Credit Hour:** 5-10

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**IN\_MED 6450: Dermatology I**

The Dermatology rotation is designed to provide the medical student with a broad general base in clinical dermatology for the non-dermatologist. During the rotation the student should: Enhance the visual diagnostic skills and related reasoning used in dermatology; Become familiar with a select list of dermatologic conditions commonly seen and best treated by the non-dermatologist; Gain familiarity with certain dermatologic conditions which require a high index of suspicion by all physicians because of their danger to life or risks to public health; Become familiar with dermatologic treatment regimens for the non-dermatologist and guidelines for appropriate referral of cases; Learn appropriate use of both systemic and topical dermatologic medications; Learn basic punch, shave, and excisional biopsy techniques; Become proficient in skin surveillance, especially early detection of skin cancer. Students are evaluated using a standard evaluation. The student's knowledge of subject matter is evaluated in the following settings: informal discussion during clinics, ward rounds, inpatient consultation rounds and scheduled conferences. A slide (Kodachrome) practical and written examination at the end of the block will be administered at UMC on the last day of the block. Material covered is from the student slide set given in CD format, the AAD Core Curriculum website ([www.aad.org/education/titlepage.htm](http://www.aad.org/education/titlepage.htm)), weekly student lectures, and Unknowns Conference.

**Credit Hours:** 5

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**IN\_MED 6500: Cardiology Consultation Service**

On the inpatient cardiology consultation block, the senior student gains experience in cardiology consultation at either the University Hospital or the Harry S Truman VA Hospital. Through active participation in the consult service the student is provided the opportunity to acquire knowledge of cardiovascular anatomy, physiology, cardiovascular pharmacology, prevention of cardiovascular disease, risk factors for cardiac disease, lipid disorders, chronic coronary artery disease management and its complications, cardiac arrhythmias and conduction abnormalities, hypertension, valvular heart disease, cardiomyopathy, pericardial disease, pulmonary heart disease, peripheral vascular disease, cerebral vascular disease, adult congenital heart disease, and pre- and post-operative assessment of patients with or without cardiac problems. Students will be evaluated using the standard department

student elective evaluation form submitted to the Internal Medicine Education Office. Each faculty working with the student will have the opportunity to contribute to the final grade. The final evaluation will be based on student performance on the cardiology consultation service and active participation in the cardiology conferences. Students' skills in performing a history and physical exam, the quality of their presentation, the quality of their knowledge base, the quality of their interactions will constitute the basis of grade assignment.

**Credit Hours:** 5

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**IN\_MED 6507: Endocrinology/Metabolism**

The Endocrinology rotation is designed to enable the student to deal with clinical problems in Diabetes endocrinology and metabolism with particular emphasis on the more common problems in an ambulatory setting. During the rotation the student will have the opportunity to see patients with a wide range of endocrine disorders. These patients will be used as the focus for teaching with the emphasis placed on differential diagnosis, pathophysiology, management, and how the disorder affects the patient as a whole. By the end of the rotation the student should be able to evaluate and manage (with supervision) patients with: 1. Diabetes Mellitus 2. Hypoglycemia 3. Thyroid disorders including goiters, thyroid nodules, hyperthyroidism and hypothyroidism 4. Adrenal disorders including adrenal incidentalomas, Cushing and Hyperaldosteronism 5. Pituitary problems including hypopituitarism, conditions due to pituitary hormone excess that including Cushing's disease, acromegaly and prolactinoma. 6. Calcium abnormalities including hyperparathyroidism, hypoparathyroidism, hypercalcemia, hypocalcaemia and osteoporosis. 7. Polycystic ovarian syndrome. Evaluations: The course grade will be based on students' skill in performing a history and physical exam, the quality of the presentation, the quality of their knowledge base and the quality of their interactions.

**Credit Hours:** 5

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**IN\_MED 6508: General Internal Medicine Outpatient**

General Internal Medicine Outpatient

**Credit Hours:** 5

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**IN\_MED 6509: Internal Medicine Off-Site Elective**

Internal Medicine Off-Site Elective

**Credit Hours:** 5

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**IN\_MED 6511: Quality Improvement and Patient Safety**

Quality Improvement and Patient Safety

**Credit Hours:** 5

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**IN\_MED 6513: Infectious Diseases**

The goals of the Infectious Diseases elective will be to: 1. Teach the student how to be an effective consultant. 2. Assist the student in his/her knowledge of disease processes. 3. Help the student improve his/her history taking and physical examination skills. 4. Enhance the student's knowledge regarding the use of antimicrobial agents. 5. Improve the student's understanding of the diagnosis and management of commonly-encountered infectious diseases with attention to the use of the history and readily available laboratory tests..

**Credit Hours:** 5

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**IN\_MED 6515: Problems in Medical Ethics**

Problems in Medical Ethics

**Credit Hours:** 5

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**IN\_MED 6517: Geriatrics-Internal Medicine Elective**

Geriatrics-Internal Medicine Elective

**Credit Hours:** 5

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**IN\_MED 6671: General Medicine - Offsite**

This course was established to accommodate fourth year medical students who wish to take an elective at another medical institution. There is no specific maximum number of students who will be permitted to enroll in this course.

**Credit Hours:** 5

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**IN\_MED 6700: Cardiology Consultation Services - Rural**

Cardiology Consultation Services - Rural

**Credit Hours:** 5

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**IN\_MED 6702: Immunology/Rheumatology - Rural**

Immunology/Rheumatology - Rural

**Credit Hours:** 5

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**IN\_MED 6704: General Internal Medicine Outpatient - Rural**

General Internal Medicine Outpatient - Rural

**Credit Hours:** 5

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**IN\_MED 6705: Pulmonary Medicine - Rural**

Rural Pulmonary Medicine general elective.

**Credit Hours:** 5

**Prerequisites:** IN\_MED 6002. Restricted to fourth year medical student

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**IN\_MED 6707: General Internal Medicine Outpatient - Rural**

The 4th year medical student will work with an IM community-based faculty member at a rural training site. Students will see patients in clinic, perform the history and physical examination, and develop an assessment and plan for these patients on their own. They will then discuss with the community-based faculty member and see the patient together. The 4th year student will complete oral presentations and document encounters as directed by the community-based faculty member. Course may be repeated for credit.

**Credit Hours:** 5

**Prerequisites:** IN\_MED 6002, 4th year medical student

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**IN\_MED 6750: DERMATOLOGY 1-RURAL**

Dermatology 1 - Rural

**Credit Hours:** 5

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**IN\_MED 6800: Coronary Care Unit**

During the Coronary Intensive Care Unit rotation, the medical student is provided the opportunity to acquire knowledge in the evaluation



and management of acute and chronic coronary artery disease, life threatening cardiac arrhythmia's, acute severe congestive heart failure, acute valvular disease, acute infective endocarditis, hypertensive emergencies, cardiac tamponade, aortic dissection, aortic pulmonary embolism, life threatening complications of cardiac therapy, hypotension, and shock. The Coronary Intensive Care rotation allows the student to evaluate and treat these patients in close conjunction with medical residents, cardiology fellows and cardiology faculty. Students will be evaluated using the standard Department student elective evaluation form submitted to the Internal Medicine Education Office. Each faculty working with the student will have the opportunity to contribute to the final grade. The final evaluation will be based on student performance on the cardiology consultation service and active participation in the cardiology conferences. Students' skills in performing a history and physical exam, the quality of their presentation, the quality of their knowledge base, the quality of their interactions will constitute the basis of grade assignment.

**Credit Hours:** 5

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#### **IN\_MED 6801: Diabetes Mellitus Externship**

Diabetes Mellitus Externship

**Credit Hours:** 5

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#### **IN\_MED 6802: Gastroenterology**

Medical students will be assigned to the inpatient GI consultation service, where they will see and evaluate patients, read about their problems, and present them to the GI fellow and/or teaching attending. They should attend all endoscopic procedures on the patients they follow on the inpatient service. They should also attend a sampling of outpatient procedures each week in the Endoscopy Center. As time permits, they may be assigned to one or more GI clinics during the rotation as well. Medical students will be expected to attend all GI conferences during the rotation. Students are also encouraged to attend Internal Medicine Grand Rounds and Internal Medicine Morning Report. They may also be assigned to give one formal presentation during their rotation. It is recommended that they read the entire GI-Liver section of the Internal Medicine textbook that they used on their third-year Internal Medicine Clerkship. Ongoing feedback is provided to the student during the rotation. At the end of the rotation, a formal written evaluation will be prepared by the inpatient attending, in conjunction with the GI fellow with whom the resident/medical student worked with. Conference participation is factored in.

**Credit Hours:** 5

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#### **IN\_MED 6803: Subinternship in Internal Medicine**

The internal medicine subinternship builds on the skills begun during the internal medicine clerkship and prepares the student for the internship year. 1. Students will refine and further develop skills in: a. Physical exam, history taking, chart review, and written notes; b. Problem list development and management plan; data interpretation and synthesis; c. Oral presentation; d. Interpersonal relations with patients, families, staff and peers ; e. Time management i. Self-directed learning ii. Evidence-based medicine 2. Expand knowledge base in general internal medicine 3. Assume primary responsibility for inpatient care 4. Further develop in the role of primary care giver Patient management skills, medical record keeping, presentation skills, knowledge base, and ability to handle responsibility will be carefully observed by both the senior ward resident and the attending physician. Students will receive constructive feedback/suggestions for improvement throughout the rotation from both the

attending and the senior ward resident. The attending, with input from the senior ward resident and the third year students, will report the final scores using the Department of Internal Medicine standard electives evaluation form. Students will meet with the attending physician at the end of the block to discuss their performance. Students will not receive elective credit for three weeks rotations.

**Credit Hours:** 5

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#### **IN\_MED 6804: Geriatrics - Internal Medicine @ VA**

Geriatrics - Internal Medicine @ VA

**Credit Hours:** 5

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#### **IN\_MED 6805: Hematology and Medical Oncology Chronic Care**

The specific objective of the course is to assist the student in developing a greater understanding for the care of chronically ill patients with hematologic and neoplastic diseases. The student's evaluation is based predominantly on his/her performance in presentation and in written chart notes of patients under the student's care. This evaluation will be by the attending physician with whom the student has worked. The standard department student elective evaluation form will be used to document student performance.

**Credit Hours:** 5

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#### **IN\_MED 6806: Immunology/Rheumatology**

The overall curricular objectives of this elective include: 1. Basic Information. The student should be able to: a. Perform a medical history and screening physical examination with attention to symptoms and signs of rheumatic disease. Understand the basic pathophysiology and clinical diagnosis of common arthritic and musculoskeletal diseases in adults. b. Understand the natural history of rheumatic diseases, particularly rheumatoid arthritis, soft tissue rheumatism, degenerative joint disease, systemic lupus erythematosus and spondyloarthropathies. c. Understand the short and long term management of rheumatic conditions and apply these principles together with overall clinical judgment in the management of individual patients. These therapeutic measures include: 1. drug therapy, 2. physical rehabilitative measures, and 3. surgical intervention. d. Learn the uses and pitfalls of laboratory tests in practice. e. Formulate ways to approach the emotional problems of patients with chronic disease. f. Understand the value of the comprehensive approach in arthritis treatment including patient education, the role of the allied health professional and community resources.

**Credit Hours:** 5

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#### **IN\_MED 6807: Medical Intensive Care**

Under the supervision of the medical critical care attending, the medical students are part of a team providing assessment, management, and follow-up of critically ill patients. Students will be intimately involved in this multidisciplinary approach to patient care. As a member of the ICU patient management team, the student will work collaboratively with residents, fellows, medical attendings, nurses, pharmacists, respiratory therapists and the nutritional support staff. The team will work in a coordinated fashion with consulting physicians and services, social services, physical therapy workers, and the radiology and pathology laboratory departments, and chaplain services.

**Credit Hours:** 5

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**IN\_MED 6808: Nephrology Advanced Elective**

This elective builds on the knowledge and skills students have acquired in the third year course in Internal Medicine. Students will have the opportunity to perform histories and physicals, participate in the decision-making process of patient management, and be responsible for daily follow-up in patients with fluid and electrolyte problems, acid-base disturbances, acute and chronic renal failure and a variety of renal diseases. The focus in these areas will be at a much higher level of responsibility and management than in the third-year course.

**Credit Hours:** 5

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**IN\_MED 6809: Pulmonary Medicine Diagnostic Services**

The Pulmonary Medicine Service is designed to allow students to participate in the diagnosis and care of hospitalized patients with an acute pulmonary problem as well as continuity follow up of existing known disease processes. This service evaluates and assists in management of adult patients at the University or VA Medical Centers. Either rotation includes intensive care unit patients with primary surgical or cardiac diagnoses, the rotation at the VA Medical Center also includes intensive care unit patients with primary medical diagnoses. The rotation will introduce the student to major clinical entities including the diagnosis and management of infectious lung disorders, neoplasms of the lungs, chronic obstructive pulmonary disease, asthma, acute respiratory failure, occupational pulmonary disease and interstitial lung disorders. The student will be introduced to the variety of diagnostic tests including radiographic studies, fiberoptic bronchoscopy, pulmonary function testing, cardiopulmonary exercise testing, surgical lung biopsy, thoracentesis and pleural biopsy, and arterial blood sampling. Students also participate in consultation on patients requiring outpatient pulmonary clinic evaluation. Each student is encouraged to spend extra time in the pulmonary function lab, and have pulmonary function tests and cardiopulmonary exercise tests done on themselves, depending on available time. Each student rotating through the pulmonary service will be expected to evaluate and present patients fully on a daily basis to the pulmonary consult team, including the attending physician. The student will have an opportunity to assist fellows and faculty with procedures such as bronchoscopy and thoracentesis. Students will have the opportunity to interpret pulmonary function tests, chest radiographs and other radiographic studies such as computed tomography and nuclear medicine studies of the thorax.

**Credit Hours:** 5

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**IN\_MED 6820: General Medicine - Offsite**

This course was established to accommodate fourth year medical students who wish to take an elective at another medical institution. There is no specific maximum number of students who will be permitted to enroll in this course.

**Credit Hours:** 5

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**IN\_MED 6821: Internal Medicine Off-Site Selective**

Internal Medicine Off-Site Selective

**Credit Hours:** 5

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**IN\_MED 6850: DERMATOLOGY 2**

DERMATOLOGY 2

**Credit Hours:** 5

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**IN\_MED 6911: Cardiology Procedure Service**

The Cardiology Procedure Service is designed to allow students to participate in the cardiology procedures involved in the diagnosis and care of hospitalized patients with an acute cardiac problem as well as continuity follow up of existing known disease processes. Sterile technique will be taught by the attending and students will demonstrate competence with sterile technique.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**IN\_MED 6914: Pulmonary Medicine Procedure Service**

The Pulmonary Medicine Procedure Service is designed to allow students to participate in the pulmonary procedures involved in the diagnosis and care of hospitalized patients with an acute pulmonary problem as well as continuity follow up of existing known disease processes. Sterile technique will be taught by the attending and students will demonstrate competence with sterile technique.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**IN\_MED 6932: Adult Diabetes and Endocrinology**

During the elective rotation, students will participate in clinical activities of the division-inpatient and outpatient. The Diabetes and Endocrine Service has a strong ambulatory curriculum with daily outpatient clinics held at the Cosmopolitan International Diabetes and Endocrinology Center. These clinics provide the student with the opportunity to evaluate patients with a wide variety of endocrine disorders. These patients will be used as the focus for teaching with the emphasis placed on differential diagnosis, pathophysiology, management, and how the disorder affects the patient as a whole. If interested, students can get involved in inpatient consultations in conjunction with the fellow on call and inpatient nurse practitioner. The student will participate in Tuesday afternoon endocrine conferences that include case conferences, basic science conferences, Journal clubs, Endocrine lectures, research conferences and Endocrine board review sessions. Endocrine board review sessions will be optional for the students. In addition to this they will also participate in diabetes patient education session/sessions.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

**Recommended:** Completion of Medicine Clerkship

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**MED\_ID 5041: Structure and Function of the Human Body I**

Biochemical principles, cell biology, human development, histology and gross anatomy with clinical correlates utilizing patient examples and non-invasive techniques.

**Credit Hours:** 6

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**MED\_ID 5042: Interviewing**

Development of skills needed to obtain a history of the patient's present illness, past medical history and other pertinent background information. Vitally important to medical practice, these skills are role modeled, practiced and evaluate with detailed feedback. Additional emphasis

is placed on the doctor-patient relationship, ethics and the role of the physician as a therapeutic agent.

**Credit Hours:** 3

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**MED\_ID 5043: Structure and Function of the Human Body II**

Study of the structure and function of the body's metabolic, nervous and muscular systems.

**Credit Hours:** 6

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**MED\_ID 5044: Physical Examination**

Introduction to the doctor-patient relationship and systematic physical examination of the patient. Certification in basic life support is also included.

**Credit Hours:** 3

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**MED\_ID 5045: Structure and Function of the Human Body III**

Study of the structure and function of the body's cardiovascular, gastrointestinal, and urinary systems.

**Credit Hours:** 6

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**MED\_ID 5046: Psychosocial Aspects of Medicine**

A brief study of the history of medicine and the impact of key events on current medical practice. Study of the biopsychosocial model, biomedical ethics and specific psychosocial problems encountered by physicians such as compliance, problems based in human sexuality, substance abuse and death and dying.

**Credit Hours:** 3

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**MED\_ID 5047: Structure and Functions of the Human Body IV**

Study of the structure and function of the endocrine, reproductive, vascular systems. The classification of pathogenic and non-pathogenic organisms, mechanisms of infection, the immune response and the interaction between pharmacologic agents and exogenous organisms.

**Credit Hours:** 6

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**MED\_ID 5048: Clinical Epidemiology and Preventive Medicine**

Application of clinical epidemiology to understanding measurement of population characteristics and to the critical analysis of the literature through analysis of study designs and interpretation of the results and causal relationships. Study of prevention, screening and health maintenance as important aspects of health care.

**Credit Hours:** 3

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**MED\_ID 5051: Ambulatory Clinical Experience I**

Ambulatory Clinical Experience I

**Credit Hour:** 1

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**MED\_ID 5052: Ambulatory Clinical Experience II**

Ambulatory Clinical Experience II

**Credit Hour:** 1

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**MED\_ID 5053: Ambulatory Clinical Experience III**

Ambulatory Clinical Experience III

**Credit Hour:** 1

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**MED\_ID 5054: Ambulatory Clinical Experience IV**

Ambulatory Clinical Experience IV

**Credit Hour:** 1

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**MED\_ID 5180: FULL-TIME ENROLLMENT FOR POST-SOPHOMORE FELLOWS**

FULL-TIME ENROLLMENT FOR POST-SOPHOMORE FELLOWS

**Credit Hours:** 18

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**MED\_ID 5201: Summer Clinical Practicum Family Medicine**

Summer Clinical Practicum Family Medicine

**Credit Hours:** 0

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**MED\_ID 5205: Individualized Study**

Individualized Study

**Credit Hour:** 1-5

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**MED\_ID 5207: Summer Clinical Practicum Internal Medicine**

Summer Clinical Practicum Internal Medicine. 4 week course. Zero credit hours, 4 FA hours.

**Credit Hours:** 0

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**MED\_ID 5209: Summer Clinical Fellowship**

Summer Clinical Fellowship

**Credit Hours:** 0

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**MED\_ID 5213: Leadership Practicum**

Leadership Practicum

**Credit Hours:** 0

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**MED\_ID 5215: Summer Clinical Practicum - Medical Education**

Summer Clinical Practicum - Medical Education- Zero billing hours and 4 FA hours

**Credit Hours:** 0

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**MED\_ID 5217: Summer Clinical Practicum - Rural Track**

This represents non-credit clinical and research experiences that medical students may take during the summer following their first (M1) year of medical school. 8 weeks. Zero Credit.

**Credit Hours:** 0

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**MED\_ID 5253: Post-Sophomore Fellowship**

Post-Sophomore Fellowship

**Credit Hours:** 3

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**MED\_ID 5341: Structure/Function Human Body I - Remediation**

Structure/Function Human Body I - Remediation

**Credit Hours:** 6

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**MED\_ID 5342: Interviewing - Remediation**

Interviewing - Remediation

**Credit Hours: 3**

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**MED\_ID 5343: Structure/Function Human Body II - Remediation**

Structure/Function Human Body II - Remediation

**Credit Hours: 6**

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**MED\_ID 5344: Physical Exam - Remediation**

Physical Exam - Remediation

**Credit Hours: 3**

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**MED\_ID 5345: Structure/Function Human Body III**

Structure/Function Human Body III

**Credit Hours: 6**

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**MED\_ID 5346: Psychosocial Aspects Med - Remediation**

Psychosocial Aspects Med - Remediation

**Credit Hours: 3**

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**MED\_ID 5347: Structure/Function Human Body IV - Remediation**

Structure/Function Human Body IV - Remediation

**Credit Hours: 6**

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**MED\_ID 5348: Clinical Epidemiology and Preventive Medicine - Remediation**

Clinical Epidemiology and Preventive Medicine - Remediation

**Credit Hours: 3**

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**MED\_ID 5351: Ambulatory Clinical Experience I- Remediation**

Ambulatory Clinical Experience I- Remediation

**Credit Hour: 1**

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**MED\_ID 5352: Ambulatory Clinical Experience II- Remediation**

Ambulatory Clinical Experience II- Remediation

**Credit Hour: 1**

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**MED\_ID 5353: Ambulatory Clinical Experience III-Remediation**

Ambulatory Clinical Experience III-Remediation

**Credit Hour: 1**

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**MED\_ID 5354: Ambulatory Clinical Experience IV- Remediation**

Ambulatory Clinical Experience IV- Remediation

**Credit Hour: 1**

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**MED\_ID 5551: Pathophysiology I**

Pathophysiologic mechanisms of cell injury, inflammation and repair, hemodynamic disturbances, genetic disorders, autoimmune response, immune deficiency and hypersensitivity reactions.

**Credit Hours: 6**

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**MED\_ID 5552: Diagnostic Tests and Medical Decisions**

Assessment of the appropriate use and interpretation of common diagnostic tests and their contribution to medical decisions and the care of patients. Includes emphasis on the review of systems, interactive hypothesis testing, differential diagnosis probability, sensitivity and specificity, and cost benefit and cost effectiveness analysis.

**Credit Hours: 3**

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**MED\_ID 5553: Pathophysiology II**

Pathophysiologic mechanisms of cardiovascular disease, diseases of the respiratory system, disorders of the blood, and nutritional diseases.

**Credit Hours: 6**

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**MED\_ID 5554: Psychopathology and Behavioral Medicine**

Presentation and discussion of the U.S. health care system and health care reform, financing and resource allocation, and the impact of change on individuals, communities, employers and the government. Included are analyses of the ethical and legal implications of health care and health care reform.

**Credit Hours: 3**

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**MED\_ID 5555: Pathophysiology III**

Pathophysiologic mechanisms of the digestive, endocrine and urogenital systems.

**Credit Hours: 6**

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**MED\_ID 5556: Clinical Practicum**

A continuation of Block 6 objectives and a clinical practicum and review comprise this block.

**Credit Hours: 3**

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**MED\_ID 5557: Pathophysiology IV**

Pathophysiology of infectious diseases, reproductive disorders, musculoskeletal and soft tissues diseases, diseases affecting the nervous system and skin diseases.

**Credit Hours: 6**

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**MED\_ID 5558: Physician as a Person**

Exploration of the physician as a person, the balance between professional and personal demands, family life, membership in a community, the stresses and rewards of the medical profession, professional ethics and the doctor-patient relationship. A four week clinical review completes this block.

**Credit Hours: 3**

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**MED\_ID 5561: Advanced Physical Diagnosis I**

Advanced Physical Diagnosis I

**Credit Hour: 1**

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**MED\_ID 5562: Advanced Physical Diagnosis II**

Advanced Physical Diagnosis II

**Credit Hour:** 1

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**MED\_ID 5563: Advanced Physical Diagnosis III**

Advanced Physical Diagnosis III

**Credit Hour:** 1

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**MED\_ID 5564: Advanced Physical Diagnosis IV**

Advanced Physical Diagnosis IV

**Credit Hour:** 1

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**MED\_ID 5570: Advanced Clinical Skill Practicum**

This course is designed for MD/PhD students and other medical students away on research or post-sophomore fellowship leave. Approval to enroll must be obtained from the Director of the MD/PhD program or the Faculty Director of Clinical curriculum. Graded on S/U basis only.

**Credit Hours:** 0

**Prerequisites:** Advanced Physical Diagnosis; must have satisfactorily completed the second year of medical school

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**MED\_ID 5751: Pathophysiology I - Remediation**

Pathophysiology I - Remediation

**Credit Hours:** 6

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**MED\_ID 5752: Diagnosis Test/Med Decision - Remediation**

Diagnosis Test/Med Decision - Remediation

**Credit Hours:** 3

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**MED\_ID 5753: Pathophysiology II - Remediation**

Pathophysiology II - Remediation

**Credit Hours:** 6

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**MED\_ID 5754: Psychopathology/Behavioral Med - Remediation**

Psychopathology/Behavioral Med - Remediation

**Credit Hours:** 3

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**MED\_ID 5755: Pathophysiology III - Remediation**

Pathophysiology III - Remediation

**Credit Hours:** 6

---

**MED\_ID 5756: Clinical Practicum - Remediation**

Clinical Practicum - Remediation

**Credit Hours:** 3

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**MED\_ID 5757: Pathophysiology IV - Remediation**

Pathophysiology IV - Remediation

**Credit Hours:** 6

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**MED\_ID 5758: Physician as a Person - Remediation**

Physician as a Person - Remediation

**Credit Hours:** 3

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**MED\_ID 5761: Advanced Physical Diagnosis I- Remediation**

Advanced Physical Diagnosis I- Remediation

**Credit Hour:** 1

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**MED\_ID 5762: Advanced Physical Diagnosis II- Remediation**

Advanced Physical Diagnosis II- Remediation

**Credit Hour:** 1

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**MED\_ID 5763: Advanced Physical Diagnosis III- Remediation**

Advanced Physical Diagnosis III- Remediation

**Credit Hour:** 1

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**MED\_ID 5764: Advanced Physical Diagnosis IV- Remediation**

Advanced Physical Diagnosis IV- Remediation

**Credit Hour:** 1

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**MED\_ID 5850: Contemplating Medicine, Patients, Self and Society**

The purpose of the longitudinal COMPASS course is to foster the development of patient-centered physicians in relation to patients, self and society. This is accomplished through an innovative longitudinal small group experience using a variety of learning methods including group discussion, reflective writing, storytelling, reading and case problem solving. The small group membership includes students from each of the 4 medical school classes and 2 faculty Guides. Curricular themes and small group session titles for the 4 year course recur on a two year cycle. The content and focus of each session is unique. Students in the first, second and third years of medical school will receive a final course grade (satisfactory or unsatisfactory) at the end of their M4 year. The final course grade will reflect the student's performance in the small group sessions and performance on the capstone assignment.

**Credit Hour:** 1-5

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**MED\_ID 5950: Remediation of MED\_ID 5850**

Medical Students who receive an unsatisfactory grade in MED\_ID 5850 Contemplating Medicine, Patients, Self and Society will enroll for this course in order to remediate their grade.

**Credit Hours:** 3

**Prerequisites:** MED\_ID 5850

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**MED\_ID 6030: SCC Advanced Biomedical Sciences Elective**

Students will work under the supervision of an MU faculty member at MU's Springfield Clinical Campus in a pre-approved learning experience. Activities that fulfill this requirement may include, but are not limited to: Anatomy dissection at Missouri State University (MSU), research project at a Springfield based clinical location or lab (Cox, Mercy, MSU), PBL case writing, and cross cultural medicine (global health study abroad). ABS elective content and requirements will be similar to those offered at MU's Columbia Clinical Campus.

**Credit Hours:** 5

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**MED\_ID 6031: SCC Advanced Clinical Selective**

Students will work under the supervision of a faculty preceptor at the Springfield Clinical Campus. Students will see patients in the outpatient clinic and/or inpatient hospital setting, perform a history and exam, and

develop a patient-centered assessment and plan. They will then discuss their findings, assessment and plan with the faculty preceptor and go see the patient together. The student will complete oral patient presentations and document patient encounters in the medical record as directed by the faculty preceptor. Students will enhance their knowledge, skills, and attitudes about patient-centered care through active participation in direct patient care activities while under the supervision of a faculty preceptor. Students will integrate previously acquired knowledge and concepts and apply them to the care and management of patients.

**Credit Hours:** 5

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**MED\_ID 6032: SCC General Elective**

Students will work under the supervision of a faculty preceptor at the Springfield Clinical Campus. Students will see patients in the outpatient clinic and/or inpatient hospital setting, perform a history and exam, and develop a patient-centered assessment and plan. They will then discuss their findings, assessment and plan with the faculty preceptor and go see the patient together. The student will complete oral patient presentations and document patient encounters in the medical record as directed by the faculty preceptor. Students will enhance their knowledge, skills, and attitudes about patient-centered care through active participation in direct patient care activities while under the supervision of a faculty preceptor. Students will integrate previously acquired knowledge and concepts and apply them to the care and management of patients.

**Credit Hours:** 5

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**MED\_ID 6100: Advanced Elective**

Advanced Elective - 0 Credit

**Credit Hours:** 3

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**MED\_ID 6200: ABS Advanced Basic Science**

ABS Advanced Basic Science

**Credit Hours:** 5

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**MED\_ID 6235: ABS DERMATOLOGY RSCH&REV**

ABS Dermatology Research and Review

**Credit Hours:** 5

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**MED\_ID 6243: ABS EMERGENCY MED RSCH**

ABS Emergency Medicine Research

**Credit Hours:** 5

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**MED\_ID 6244: ABS Quality Improvement and Patient Safety Elective**

The 4th year student will work with leaders in the Office of Clinical Effectiveness to identify an improvement project to be conducted during the elective. Students will have self-paced readings/didactic expectations, and will be expected to review and report on medical literature relevant to the care process(es) targeted for improvement. To complete their project, the student will present the improvement work to patient safety and quality improvement leaders, as well as stakeholders in the care process(es) identified for improvement efforts.

**Credit Hours:** 5

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**MED\_ID 6390: ABS Individualized Study in Medicine-M1**

Goals/Objectives: Participate in PBL as a tutor under the guidance of an experienced faculty tutor. Review the literature appropriate to each case. Update one PBL case that is used in the course of the block OR update a problem solving exam OR write a new problem solving exam. Students must submit the case or exam electronically to the course coordinator. Evaluation: Student's performance as tutor will be evaluated by the supervising faculty member and the tutor group members. Notes: During a four-week block, the fourth year student will tutor an M-1 PBL group (Monday, Wednesday, & Friday mornings) under the supervision of a senior faculty member. Contact course coordinator for case update details. Submission date for case update is set two weeks after the tutoring session ends. The student will attend all tutor preparation meetings and prepare for PBL through reading, self-directed study and discussions with faculty. Complete student mid-block and end-of-block evaluation as directed.

**Credit Hours:** 5

**Prerequisites:** M4s registering for PBL tutoring must be in good standing and not on probation. M4s must not have come before the CSP for an automatic vote for dismissal

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**MED\_ID 6391: ABS Individualized Study in Medicine-M2**

ABS Individualized Study in Medicine-M2

**Credit Hours:** 5

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**MED\_ID 6393: ABS Interdisciplinary Research**

ABS Interdisciplinary Research

**Credit Hour:** 5-10

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**MED\_ID 6394: ABS Cross-Cultural Medicine**

ABS Cross-Cultural Medicine

**Credit Hours:** 5

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**MED\_ID 6395: ABS Interdisciplinary Research and Review**

ABS Interdisciplinary Research and Review

**Credit Hour:** 5-10

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**MED\_ID 6396: ABS Medical Practice Organization**

ABS Medical Practice Organization

**Credit Hour:** 5-10

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**MED\_ID 6397: ABS Academic Tutoring for M1/M2 Students**

ABS Academic Tutoring for M1/M2 Students

**Credit Hours:** 5

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**MED\_ID 6398: ABS County Public Health**

ABS County Public Health

**Credit Hours:** 5

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**MED\_ID 6399: ABS Case Writing**

ABS Case Writing

**Credit Hours:** 5

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**MED\_ID 6690: Elective Individual Study in Medicine - M1**  
Elective Individual Study in Medicine - M1

**Credit Hours:** 5

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**MED\_ID 6691: Elective Individual Study in Medicine - M2**

Goals/Objectives: Participate in PBL as a tutor under the guidance of an experienced faculty tutor. Evaluations: the student's performance as tutor will be evaluated by the supervising faculty member and the tutor group members. Notes: During the four-week block, the fourth year student will tutor a M-2 PBL group (Tuesday and Thursday afternoons) under the supervision of a senior faculty member.

**Credit Hours:** 5

**Prerequisites:** M4s registering for PBL tutoring must be in good standing and not on probation. M4s must not have come before the CSP for an automatic vote for dismissal

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**MED\_ID 6692: Case/Exam Writing Elective**

The fourth year medical student will work as part of a team in order to develop learning materials for the first and second year students. Students will work closely with faculty advisors and clinical mentors to develop educationally sound learning materials. Under the guidance of faculty preceptors, medical students will author one original PBL case including a comprehensive tutor guide and multiple choice examination questions covering the case objectives, AND one original Clinical Reasoning Exam including an annotated key.

**Credit Hours:** 5

**Prerequisites:** fourth year medical student in good standing

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**MED\_ID 6693: Simulation Preparation for Internship**

This course is meant to increase the medical students' knowledge and skillsbase in preparation for the first year of internship. In order to accomplish this, the students will be exposed to a variety situations common to first year residents through activities created with simulation. Throughout the course, students will demonstrate how to provide effective and efficient patient-centered care, while improving their communication skills and professionalism with patients and other healthcare providers. Students will understand the role of simulation in medical education and develop skills in debriefing of scenarios throughout the course. At the end of the course, students will be expected to complete a simulation capstone project. Prerequisites: Class level: 4th year medical student. Approval by Simulation Director and Completion of all Core Clerkship Requirements.

**Credit Hours:** 5

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**MED\_ID 6890: Computer Applications in Medicine**

Computer Applications in Medicine

**Credit Hours:** 5

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**MED\_ID 6924: Rural Track Clinical Elective**

Students will enhance their knowledge, skills, and attitudes about patient-centered care through active participation in direct patient care activities while under the supervision of a faculty preceptor. Students will integrate previously acquired knowledge and concepts and apply them to the care and management of patients.

**Credit Hours:** 2

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**Prerequisites:** successful completion of the first two years of medical school

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**MED\_ID 6925: Springfield Clinical Campus Elective**

Students will work under the supervision of a faculty preceptor at the Springfield Clinical Campus. Students will see patients in the outpatient clinic and/or inpatient hospital setting, perform a history and exam, and develop a patient-centered assessment and plan. They will then discuss their findings, assessment and plan with the faculty preceptor and go see the patient together. The student will complete oral patient presentations and document patient encounters in the medical record as directed by the faculty preceptor.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**MED\_ID 6933: Joint Commission Tracers: Assessing Quality Patient Care Using Joint Commission Criteria**

Quality patient care is the core of the academic medical center's mission, accomplished through exemplary education, research, and clinical care. In order to assure that patients receive quality care, the Center for Medicare and Medicaid Services (CMS) requires that health care organizations demonstrate quality through a process of accreditation, which has been delegated to The Joint Commission (TJC), an independent, non-for-profit organization. TJC promotes the continuous improvement of health care by evaluating organizations and "inspiring them to excel in providing safe and effective care of the highest quality and value." Failure of a health system to meet TJC requirements can result in loss of an organization's ability to participate in Medicare/Medicaid programs, which has a crippling effect on delivering patient care. Tracers are the tool TJC utilizes to evaluate the quality of patient care in an organization. During the two-week course, the student will: 1) attend tracer orientation. 2) conduct ten tracers (approximately 1 hour each) in inpatient and invasive procedure areas. 3) conduct a literature search on tracers and quality care, and prepare 3 to 4 page synthesis. 4) complete a pre- and post- survey on the tracer process. 5) complete a one-page written reflection of the student's tracer experience at the end of each week.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**MED\_ID 6934: Sexual and Gender Minority Health Issues Across the Lifecourse**

The purpose of this course is to increase student's familiarity with sexual and gender minority health issues likely to be seen in practice. Integral to the course structure is improved cultural competency in not only appropriate language and terms used within the community but also a sense of the social-cultural issues each generation has faced growing up in America.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**MPP 2010: The Science of Sex, Drugs and Rock'n'Roll**

This course will examine the data and theories for how drugs affect the body, for the physiology of reproduction and, for how sound affects

the body. These topics will be used to motivate an understanding, and provide training in applying, the key scientific principles. Graded on A-F basis only.

**Credit Hour:** 1

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**MPP 2015: Toxins, The Good, The Bad, and the Beautiful**

In this course, the students will explore toxins. We will discuss how toxins are formed, the "value" of the toxin to the organism that makes it, how the toxin is delivered, the effect of the toxin on the target animal and on humans. In addition, we will discuss how toxins have led to new therapies and drugs. We will also analyze some famous cases of apparent toxin poisoning. In all cases, the students will be urged to critically evaluate the data and the theories and encouraged to think of novel uses of toxins and of experiments that would provide important new information about the toxins and their effects.

**Credit Hours:** 3

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**MPP 2015W: Toxins, The Good, The Bad, and the Beautiful - Writing Intensive**

In this course, the students will explore toxins. We will discuss how toxins are formed, the "value" of the toxin to the organism that makes it, how the toxin is delivered, the effect of the toxin on the target animal and on humans. In addition, we will discuss how toxins have led to new therapies and drugs. We will also analyze some famous cases of apparent toxin poisoning. In all cases, the students will be urged to critically evaluate the data and the theories and encouraged to think of novel uses of toxins and of experiments that would provide important new information about the toxins and their effects.

**Credit Hours:** 3

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**MPP 2020: Bodily Fluids and Functions**

In this course, the students will study body fluids. We will learn about how the fluids are formed and the functions of the fluids. We will also critically evaluate some theories about the formation and function of the fluids.

**Credit Hours:** 3

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**MPP 2020W: Bodily Fluids and Functions - Writing Intensive**

In this course, the students will study body fluids. We will learn about how the fluids are formed and the functions of the fluids. We will also critically evaluate some theories about the formation and function of the fluids.

**Credit Hours:** 3

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**MPP 3202: Elements of Physiology**

Beginning course for sophomore and above designed to cover the basic functional aspects of major organ systems of the body.

**Credit Hours:** 5

**Prerequisites:** sophomore standing

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**MPP 3290: Undergraduate Research**

Laboratory experience and opportunity to explore research in medical pharmacology and physiology.

**Credit Hour:** 1-3

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**MPP 3333: Fundamentals of Human Physiology**

This course presents the basic concepts of physiology using a problem based approach. The major organs systems are discussed with the relevance to everyday physiology as well as clinical and animal applications discussed.

**Credit Hours:** 3

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**MPP 3337: Human Physiology Laboratory**

This lab course will involve experiments to illustrate basic physiology concepts.

**Credit Hours:** 2

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**MPP 3500: Introduction to Human Physiology**

This is an online course that will introduce students to basic concepts in human physiology, with a focus on the integrated function of organ system in homeostasis/human health. The final section of the course will expose students to important issues in exercise physiology, specifically the impact of exercise on cardiovascular and metabolic functions.

**Credit Hours:** 3

**Recommended:** Cell Biology, Biochemistry

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**MPP 4001: Undergraduate Topics in Medical Pharmacology and Physiology**

Selected topics not in regularly offered courses.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**MPP 4085: Undergraduate Problems in Medical Pharmacology and Physiology**

This course is designed to provide well-qualified undergraduate students the opportunity to engage in advanced study in topics in pharmacology or physiology with individual faculty members. Topics will be drawn from recent primary literature. Graded on A-F basis only.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**MPP 4085W: Undergraduate Problems in Medical Pharmacology and Physiology - Writing Intensive**

This course is designed to provide well-qualified undergraduate students the opportunity to engage in advanced study in topics in pharmacology or physiology with individual faculty members. Topics will be drawn from recent primary literature. Graded on A-F basis only.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**MPP 4202: Medical Physiology**

Medical Physiology is intended for health scientists. Fat, bone, digestion, nutrition, appetite and brain health will be emphasized for health reform and updates for nervous, muscle, heart, vasculature, liver, renal, lung and endocrine systems with analysis for preventative medicine. May be repeated for credit. Graded on A-F basis only.

**Credit Hours:** 4

**Prerequisites:** Nutrition or Biochemistry

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**MPP 4204: Medical Pharmacology**

(cross-leveled with MPP 7424). Medical pharmacology teaches the science of drug actions in medicine today, and principles of pharmacokinetics/dynamics. Future health professionals will learn prescription judgment and quality/cost improvements for patient safety. An online laboratory will teach drug database information technology.

**Credit Hours:** 5

**Prerequisites or Corequisites:** BIO\_SC 3700 or MPP 3202 or MPP 4202 or equivalent physiology course from other colleges

**Recommended:** nutrition or biochemistry courses are recommended but not required

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**MPP 4204H: Medical Pharmacology-Honors**

Medical pharmacology teaches the science of drug actions in medicine today, and principles of pharmacokinetics/dynamics. Future health professionals will learn prescription judgment and quality/cost improvements for patient safety. An online laboratory will teach drug database information technology. Prerequisites or

**Credit Hours:** 5

**Corequisites:** BIO\_SC 3700 or MPP 3202 or MPP 4202 or equivalent physiology course from other colleges; Honors eligibility required

**Recommended:** nutrition or biochemistry courses are recommended but not required

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**MPP 4310: Mammalian Cell Function**

An overview of the structure and function of mammalian cells including topics in membrane physiology and transport, cell signaling, compartmentalization and metabolism, cell proliferation and differentiation and the structure and function of certain specialized cells (e.g. muscle cells, epithelial cells and neurons). Laboratory and/or discussion sessions will be included as part of the course with laboratory topics to be determined. We will devote approximately 75% of the lecture to generalized cell functions, and 25% to deal with topics concerning specialized cells. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** instructor's consent. For graduate credit, students will be required to participate in laboratory exercises

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**MPP 4417: Diagrams, Figures and Graphs**

(cross-leveled with MPP 7717). In this course, we will examine what features optimize the drawing of diagrams, figures and graphs for communication to different audiences. Graded on A-F basis only.

**Credit Hour:** 1

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**MPP 6525: Pharmacology**

Pharmacology

**Credit Hours:** 5

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**MPP 7300: Physics in Cell and Developmental Biology**

(same as PHYSICS 7310 and BIO\_SC 7310). Introduction to physical mechanisms and their modeling in cellular processes and development.

**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**MPP 7302: Drug Discovery and Action**

This course is designed to provide the student with an in depth knowledge of specific aspects of cardiovascular physiology with major emphasis on cardiac structure and function. Topics are covered in 1, 3-4 hour session per week and are based on reading assignments from the literature. The following topics have been addressed in previous offerings but the specific topics may vary from year to year: Heart muscle structure related to function; Contractile proteins structures and function; Regulation of protein synthesis; Regulation of myocardial hypertrophy; Regulation of myocardial metabolism; Myocardial mechanics systolic and diastolic function; Mechanisms of length dependent contraction; Control of electrical-mechanical coupling processes; Mechanisms for adrenergic regulation of myocardial function.

**Credit Hour:** 1

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**MPP 7310: Mammalian Cell Function**

An integrated course covering the structure and function of mammalian cells as relevant to clinical translational research including topics in membrane physiology and transport, cell signaling, cell proliferation, differentiation, compartmentalization and metabolism. Graded on A-F basis only.

**Credit Hour:** 3-5

**Prerequisites:** instructor's consent

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**MPP 7422: Medical Physiology**

Medical Physiology is intended for health scientist. Fat, bone, digestion, nutrition, appetite and brain health will be emphasized for health reform and updates for nervous, muscle, heart, vasculature, liver, renal, lung and endocrine systems with analysis for preventive medicine. May be repeated for credit. Graded on A-F basis only.

**Credit Hours:** 4

**Prerequisites:** Nutrition or Biochemistry

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**MPP 7424: Pharmacology and Translational Medicine**

(cross-leveled with MPP 4204). Pharmacology teaches the science of drug actions in medicine today and principles of pharmacokinetics/dynamics. Future medical researchers will learn molecular probes for medical research and translational science to improve health care. An online laboratory will teach drug database information technology. Graded on A-F basis only.

**Credit Hours:** 5

**Prerequisites or Corequisites:** BIO\_SC 3700 or MPP 3202 or MPP 4202 or equivalent physiology course from other colleges

**Recommended:** nutrition or biochemistry courses are recommended but not required

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**MPP 7717: Diagrams, Figures, and Graphs**

(cross-leveled with MPP 4417). In this course, we will examine what features optimize the drawing of diagrams, figures and graphs for communication to different audiences. Graded on A-F basis only.

**Credit Hour:** 1

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**MPP 8000: Scientific Discovery Leading to Life Science Innovations**

(same as BIOL\_EN 8000). This course explains the scientific discovery process from idea to product release, examining problem identification, need validation, and commercialization. Clinical, business and

engineering perspectives are examined to understand translating innovation into clinical practice. May be repeated for credit. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** must be enrolled in a graduate degree program

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**MPP 8001: Graduate Topics in Medical Pharmacology and Physiology**

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**MPP 8004: Regulatory Issues in Clinical Research and Clinical Trials**

The goal of the course is to highlight key FDA regulatory issues for conducting human clinical trials and clinical research. For clinical trials, FDA has set up several compliance programs and guidance documents as a part of human subject protection (HSP)/ Bioresearch Monitoring (BIMO) initiatives. The aim of the program was to strengthen FDA oversight and protection of subjects in clinical trials and to preserve confidentiality of data. The HSP/BIMO initiative comprehends all FDA regulated clinical trials including human drugs and biological drug products, devices, foods, and veterinary medicine. The course is designed for students in medical professions, management, biomedical engineering, and related areas. Adequate knowledge regarding FDA guidance in conducting human clinical trials and clinical research will help professionals steer drug/device development and commercialization in their respective field. This course will be offered online only. An introduction to essential disciplines for conducting clinical trials and clinical research will be provided. The basics of good clinical practices (GCPs), biostatistics and clinical epidemiology in relation to clinical trials will be presented. Several relevant case studies for conducting clinical trials, both nationally and internationally, will be discussed. The importance of data collection and data management while conducting clinical trials will be explained. Graded on A-F basis only.

**Credit Hours:** 3

**Recommended:** Knowledge in biomedical sciences, clinical sciences

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**MPP 8050: Non-Thesis Research in Medical Pharmacology and Physiology**

Opportunities for graduate research in physiology or pharmacology not leading to dissertation. Graded on A-F basis only.

**Credit Hour:** 1-5

**Prerequisites:** instructor's consent

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**MPP 8085: Graduate Problems in Medical Pharmacology and Physiology**

Guided study to strengthen knowledge in physiology and pharmacology. Graded on A-F basis only.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**MPP 8090: Thesis Research in Medical Pharmacology and Physiology**

Research for Master's Students in physiology or pharmacology, leading to dissertation. Graded on a S/U basis only.

**Credit Hour:** 1-99

**Prerequisites:** instructor's consent

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**MPP 8410: Neural Control**

An integrated course covering the physiology and pharmacology of the autonomic nervous system and the central nervous system. Graded on A-F basis only.

**Credit Hour:** 1

**Prerequisites:** instructor's consent

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**MPP 8411: Mammalian Pharmacology and Physiology**

An integrated course covering the basic concepts in physiology and pharmacology of the cardiovascular, gastrointestinal, endocrine, renal, and respiratory systems with an emphasis of applying the key concepts to clinically relevant examples. Graded on A-F basis only.

**Credit Hours:** 5

**Prerequisites:** instructor's consent

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**MPP 8412: Seminar in Medical Pharmacology and Physiology**

Instruction in critical evaluation, review, and summary of scientific data and practice in oral presentation of scientific research seminar. Taught in conjunction with weekly department seminar series.

**Credit Hour:** 1

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**MPP 8415: Responsible Conduct of Research thru Engagement, Enactment and Empowerment NIH and other Federal Age**

The emphasis is on the scientific research ethics problems in interdisciplinary work. Student involvement can include designing mock misconduct trials or writing advocacy letters to change current policy.

**Credit Hours:** 2

**Prerequisites:** instructor's consent

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**MPP 8417: Scientific Communication**

A course to foster and improve students ability to communicate orally and in writing. Student enrolled in the course will be expected to write a report and present a seminar on a topic related to one of the lab rotation projects to the mentor of the rotation and other interested faculty members and students. Graded on A-F basis only.

**Credit Hours:** 2

**Prerequisites:** instructor's consent

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**MPP 8420: Skills in Biomedical Research**

This course focuses on introducing graduate students to the basics of biomedical research. Course objectives are to provide new graduate students with a basic understanding of laboratory safety issues and fundamental skills that are integral to research including principles of experimental design, theory and practical application of modern research techniques, written and oral communication of research information, and scientific record keeping standards. Graded on S/U basis only.

**Credit Hours:** 2

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**MPP 9090: Thesis Research in Medical Pharmacology and Physiology**

Research for PhD students in physiology or pharmacology, leading to dissertation. Graded on a S/U basis only.

**Credit Hour:** 1-99

**Prerequisites:** instructor's consent

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**MPP 9421: Neural Pharmacology**

Biochemical and behavioral actions of drugs affecting the nervous system. Effects of drugs on synaptic mechanism including neurotransmitter metabolism and receptor interactions. Graded on A-F basis only.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**MPP 9422: Medical Pharmacology and Physiology Journal Club**

On a weekly basis, individual students are assigned current high profile journal articles to present to their fellow students and faculty in a journal club setting. Each student in the course is required to read the paper in advance and participate in discussions of the figures and general topics that is being presented. Graded on S/U basis only.

**Credit Hour:** 1

**Prerequisites:** enrolled in MPP PhD graduate program

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**MPP 9423: Oncological Pharmacology**

An in-depth study of the causes and treatments of cancers including discussions of mutagenesis and carcinogenesis, principles of cancer chemotherapy and recent developments with targeted therapeutics. The basis for genetic differences in cancer drug responsiveness including genetics predisposition's to disease and drug toxicity (pharmacogenetics) and genetic polymorphism's associated with disease susceptibility, adverse drug responses and drug resistance (pharmacogenomics) will also be discussed.

**Credit Hour:** 1-3

**Prerequisites:** MPP 8411

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**MPP 9425: Receptor Pharmacology**

The goal of this course is to facilitate the student's efforts to obtain a solid working knowledge of receptor pharmacology, physiology and molecular biology that can be of benefit in the future. The course will explore a variety of receptor issues, primarily in a discussion format organized by the faculty members involved in the course. The course is divided into two related components. The first component will cover general principles of quantifying ligand - receptor interactions and subsequent responses, summarize some of the methods of receptor identification and characterization and evaluate the various schemes of receptor typing and subtyping. The second component will explore specific characteristics of receptors from some of the major receptor families with an emphasis on understanding mechanisms of receptor activation and regulation as well as exploring concepts about the structural basis for discrete receptor functions. A typical list of receptors to be covered in the course may include the tyrosine kinase receptors, G protein-coupled receptors, cytokine receptors, ligand activated transcription factors (nuclear receptors), adhesion receptors such as integrins, and ligand activated ion channels.

**Credit Hour:** 1-2

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**MPP 9426: Transmembrane Signaling**

This course is for advanced level graduate students. The course is designed to develop state of the art knowledge and understanding of current research issues in the cell signaling. The major emphasis is on

receptor and non-receptor mediated transmembrane signaling events underlying physiological and pharmacological responses of the cells. Students are also involved in class presentations, and the development and critical review of new research proposals, all focused on cellular signaling.

**Credit Hours:** 4

**Prerequisites:** basic courses in biochemistry and or cell and molecular biology or equivalent

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**MPP 9427: Drug Metabolism**

(same as V\_BSCI 9427). The course is concerned with the absorption, distribution, metabolism and elimination of drugs using a comparative approach. The pharmacokinetic aspects of elimination are stressed.

**Credit Hour:** 1-3

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**MPP 9428: Clinical Biodetection**

Interdisciplinary approach to clinical translational applications of physiology and pharmacology and related life, physical, chemical, and engineering sciences.

**Credit Hours:** 2

**Prerequisites:** instructor's consent

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**MPP 9429: Principles and Frontiers of Molecular Pharmacology**

An in-depth examination of pharmacodynamics, structure-activity relationships, pharmacokinetics/drug metabolism, and toxicology, followed by a consideration of emerging concepts regarding membrane receptors and channels and their role in biology and medicine.

**Credit Hours:** 5

**Prerequisites:** Students must have completed a physiology, biochemistry or cell biology course

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**MPP 9430: Cardiovascular Physiology**

This course is designed to provide the student with an in depth knowledge of specific aspects of cardiovascular physiology with major emphasis on cardiac structure and function. Topics are covered in 1, 3-4 hour session per week and are based on reading assignments from the literature. The following topics have been addressed in previous offerings but the specific topics may vary from year to year: Heart muscle structure related to function; Contractile proteins structures and function; Regulation of protein synthesis; Regulation of myocardial hypertrophy; Regulation of myocardial metabolism; Myocardial mechanics systolic and diastolic function; Mechanisms of length dependent contraction; Control of electrical-mechanical coupling processes; Mechanisms for adrenergic regulation of myocardial function.

**Credit Hours:** 3

**Prerequisites:** MPP 4310 and MPP 8411 or the equivalent (e.g., UM first year medical school curriculum, V\_BSCI 8421, or BIO\_SC 3700 with supporting courses)

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**MPP 9431: Control of Energy Metabolism**

(same as V\_BSCI 9431). This advanced elective is in a lecture/discussion format using primary literature to explore how cells organize and regulate metabolism to meet energy demands.

**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**MPP 9432: Mammalian Membrane Physiology**

This course is designed to stimulate active learning of the concepts of modern membrane physiology. Throughout the course, a balance will be maintained between examining classic papers in the field and current literature, including not only theories that have held up over time, but areas in which there is current dispute as the best model that describes the observations.

**Credit Hour:** 1-3

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**MPP 9434: Microvascular Circulatory Function**

(same as V\_BSCI 9425). An in-depth study of microcirculatory structure and function in various tissues with emphasis on recent developments in the understanding of the mechanisms involved in nutrient supply, edema formation, lymphatic function and fluid balance.

**Credit Hours:** 4

**Prerequisites:** V\_BSCI 8420 and V\_BSCI 8421 or equivalent and instructor's consent

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**MPP 9435: Skeletal Muscle**

(same as V\_BSCI 9435). Skeletal muscle mechanics, contractions theories, transgenic models, development, gene expression regulation, adaptation to exercise, aging, metabolic functions, and inactivity induced chronic diseases.

**Credit Hour:** 1-3

**Prerequisites:** course director's consent required for enrollment

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**MPP 9436: Renal Physiology**

Mechanisms in mammalian renal physiology presented with particular emphasis on current techniques and concepts.

**Credit Hour:** 1-3

**Prerequisites:** V\_BSCI 8420 and V\_BSCI 8421 or equivalent and instructor's consent

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**MPP 9437: Neural Control of the Circulation**

(same as V\_BSCI 9467). Course objectives include developing a general understanding of CNS mechanisms in the regulation of the cardiovascular system, including autonomic, neurohumoral and body fluid homeostatic mechanisms, gaining knowledge of the major advances and topics in the field and becoming familiar with some of the methods used to study CNS cardiovascular regulation. Graded on A-F basis only.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**NEUROL 6003: Neurology Clerkship**

Students see patients with neurological disorders in the outpatient clinics, in hospital settings, and on consultation services.

**Credit Hours:** 4

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**NEUROL 6013: Rural Neurology Clerkship**

Rural Neurology Clerkship

**Credit Hours:** 4

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**NEUROL 6023: Springfield Neurology Clerkship**

Students see patients with neurological disorders in the outpatient clinics, in hospital settings, and on consultation services.

**Credit Hours:** 4

**Prerequisites:** successful completion of the first two years of medical school

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**NEUROL 6103: Remediation Neurology Clerkship**

Enrolled students are those who received an unsatisfactory grade in a Child Health Clerkship at any Mizzou Med location or site. This course gives the student an opportunity to rectify their deficiency.

**Credit Hours:** 4

**Prerequisites:** NEUROL 6003 Neurology Clerkship, received unsatisfactory grade

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**NEUROL 6301: ABS Neurology Mech of Disease**

ABS Neurology Mech of Disease

**Credit Hour:** 5-10

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**NEUROL 6303: ABS Neurology Research**

ABS Neurology Research

**Credit Hours:** 5

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**NEUROL 6305: ABS Neurology Research and Review**

ABS Neurology Research and Review

**Credit Hours:** 5

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**NEUROL 6755: Adult Neurology - Rural**

Adult Neurology - Rural

**Credit Hours:** 5

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**NEUROL 6756: Neurology - Rural**

Rural Neurology general elective.

**Credit Hours:** 5

**Prerequisites:** NEUROL 6003. Restricted to fourth year medical students

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**NEUROL 6829: PEDIATRIC NEUROLOGY**

Pediatric Neurology

**Credit Hours:** 5

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**NEUROL 6845: Neurology**

Neurology

**Credit Hours:** 5

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**NEUROL 6850: Advanced Neurology**

Advanced Neurology

**Credit Hours:** 5

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**NEUROL 6918: Epilepsy and Clinical Neurophysiology**

The medical student will work as part of the ambulatory and inpatient epilepsy team. One week will be spent in the outpatient unit and one inpatient. The inpatient rotation will consist of rounding on epilepsy

patients and being an integral part of patient care. A significant portion of the inpatient week will be spent in the Epilepsy Monitoring Unit. During the outpatient rotation, the student will rotate with one of two epileptologists and participate in their care.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**NEUROL 6921: Neurology Outpatient Experience**

The student will work as part of the ambulatory neurology team. During the outpatient rotation, the student will have an opportunity to participate in the care of patients with physicians specializing in the following: Epilepsy, Movement Disorders, Neuromuscular Disorders, Dementia and Behavioral Neurology, Multiple Sclerosis, Sleep Disorders, and Vascular Neurology.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**NEUROL 6922: Neurology/Stroke Inpatient Experience**

The student will work as part of the inpatient neurology team. During the rotation, the student will have an opportunity to participate in the care of patients on the general and stroke inpatient services. Students may elect to spend one week on each service or both weeks on either. Opportunities may be available to students in the following areas: Intensive/Critical Care Unit and Neuro-Interventional procedures.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**NEUROL 6923: Neuromuscular Disorders**

One week will be spent in the outpatient unit and one inpatient. The inpatient experience will consist of rounding on neuromuscular patients and being an integral part of patient care. A significant portion of the experience will be spent in Electromyography (EMG). During the outpatient experience, the student will rotate with one of three neuromuscular specialists and participate in patient care, and participate in MDA clinic.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**OB\_GYN 6004: Obstetrics/Gynecology Clerkship**

Students rotate on the obstetric service, the gynecology service and the gynecologic oncology service, seeing a broad range of patients in both inpatient and outpatient settings. In addition, they attend lectures and interactive case presentations.

**Credit Hours:** 8

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**OB\_GYN 6014: Rural Obstetrics/Gynecology Clerkship**

Rural Obstetrics/Gynecology Clerkship

**Credit Hours:** 8

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**OB\_GYN 6024: Springfield Obstetrics and Gynecology Clerkship**

Students rotate on the obstetric service, the gynecology service and the gynecologic oncology service, seeing a broad range of patients in both inpatient and outpatient settings. In addition, they attend lectures and interactive case presentations.

**Credit Hours:** 8

**Prerequisites:** successful completion of the first two years of medical school

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**OB\_GYN 6104: Remediation OB/GYN Clerkship**

Enrolled students are those who received an unsatisfactory grade in a OB/GYN Clerkship at any Mizzou Med location or site. This course gives the student an opportunity to rectify their deficiency.

**Credit Hours:** 8

**Prerequisites:** OB\_GYN 6004 Clerkship, received unsatisfactory grade

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**OB\_GYN 6311: ABS OB/Gynecology Mechanism of Disease**

ABS OB/Gynecology Mechanism of Disease

**Credit Hour:** 5-10

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**OB\_GYN 6313: ABS OB/Gynecology Research**

ABS OB/Gynecology Research

**Credit Hours:** 5

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**OB\_GYN 6315: ABS OB/Gynecology Research and Review**

ABS OB/Gynecology Research and Review

**Credit Hour:** 5-10

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**OB\_GYN 6563: OB/GYN Clinical Reproductive Endocrinology**

OB/GYN Clinical Reproductive Endocrinology

**Credit Hours:** 5

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**OB\_GYN 6564: OB/GYN Reproductive Endocrinology Research**

OB/GYN Reproductive Endocrinology Research

**Credit Hours:** 5

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**OB\_GYN 6565: Reproductive Medicine and Infertility Offsite**

The 4th year student will work as a member of the Reproductive Endocrinology and Infertility team, providing hands-on clinical and surgical services in the inpatient, outpatient and consultative settings. The medical student will participate in daily outpatient clinic and any observe surgical services related to care of those patients. Students will learn using a variety of evidence-based resources, on-line resources and from clinical dialogue with the members of the care team.

**Credit Hours:** 5

**Prerequisites:** Successful completion of the first two years of medical school and the OB/GYN Clerkship

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**OB\_GYN 6570: Gynecologic Endoscopy - St. Luke's**

Gynecologic Endoscopy - St. Luke's

**Credit Hours:** 5

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**OB\_GYN 6571: Clinical Reproductive Endocrinology and Infertility - St. Luke's**

Clinical Reproductive Endocrinology and Infertility - St. Luke's

**Credit Hours:** 5**OB\_GYN 6572: OB/GYN Ultrasonography - St. Luke's**

OB/GYN Ultrasonography - St. Luke's

**Credit Hours:** 5**OB\_GYN 6573: Maternal-Fetal Medicine and Ultrasound - St. Luke's**

Maternal-Fetal Medicine and Ultrasound - St. Luke's

**Credit Hours:** 5**OB\_GYN 6574: Clinical GYN Oncology/Pathology - St. Luke's**

Clinical GYN Oncology/Pathology - St. Luke's

**Credit Hours:** 5**OB\_GYN 6575: Obstetrics/Gynecology - St. Luke's**

Obstetrics/Gynecology - St. Luke's

**Credit Hours:** 5**OB\_GYN 6580: Obstetrics/Gynecology-Moberly Regional**

Obstetrics/Gynecology-Moberly Regional

**Credit Hours:** 5**OB\_GYN 6583: Obstetrics/Gynecology Offsite Advanced Elective**

Obstetrics/Gynecology Offsite Advanced Elective

**Credit Hours:** 5**OB\_GYN 6765: OB/GYN - Rural**

OB/GYN - Rural

**Credit Hours:** 5**OB\_GYN 6766: Gynecology Rural Elective**

Students will build upon their gynecologic examinations skills and their knowledge of both the common and more unusual gynecologic conditions that they obtain during other clerkships.

**Credit Hours:** 5**Prerequisites:** OB\_GYN 6004, SURGRY 6006**OB\_GYN 6865: Maternal-Fetal Medicine Selective**

Goals/Objectives: To expose the student to high-risk obstetrical experiences in the Maternal Fetal Medicine division. All obstetrical selectives are done at Women's and Children's Hospital.

**Credit Hours:** 5**Prerequisites:** Ob-Gyn Clerkship**OB\_GYN 6866: Obstetrical**

Goals/Objectives: To provide the student with additional obstetrical experience in the Labor and delivery suite. All obstetrical electives are done at the Missouri Ob/Gyn Associates Clinic and Women's and Children's Hospital. Evaluations: The student will be graded on their ward

performance. An evaluation for this rotation will be completed by the appropriate faculty and resident physicians. Notes: While on this rotation students will have exposure to various faculty members, residents, and fellow medical students. Students will participate in the evaluation of patients on labor and delivery including those presenting for evaluation of first trimester problems and labor evaluations. Some participation in operative procedures and labor management is expected. Students will have exposure to antenatal testing and ultrasonography including the interpretation of ultrasounds and limited participation in genetic counseling and invasive ante-partum diagnostic procedures is expected. Night call will be required and can be worked into the core rotation's student call schedule. Teaching will be on an ongoing bases with Dr. Floyd keeping daily routine with the students expected to participate in management decisions.

**Credit Hours:** 5**Prerequisites:** Ob-Gyn Clerkship. Core reading for this rotation will include Obstetrics, Normal and Problem Pregnancies, latest edition, edited by Gabbe, Niebyl and Simpson**OB\_GYN 6867: Obstetrical/Gynecological Outpatient**

Obstetrical/Gynecological Outpatient

**Credit Hours:** 5**OB\_GYN 6868: Urogynecology Selective**

The 4th year medical student will work as part of a team providing hands-on clinical services in an inpatient, outpatient, and consultative setting. Students will participate in daily morning report, weekly didactic sessions, weekly surgical procedures and Friday afternoon seminars. Students will learn using a variety of evidence-based resources and direct faculty interaction. Successful completion of one of the core Obstetrics and Gynecology Clerkship courses: OB\_GYN 6004 or OB\_GYN 6014, and/or OB\_GYN 6104.

**Credit Hours:** 5**Prerequisites:** Successful completion of the first two years of medical school**OB\_GYN 6930: Obstetrics/Gynecology Outpatient Two-Week Elective**

The 3rd or 4th year medical student will work as part of a team providing hands-on clinical services in an outpatient setting. Students will participate in daily clinic evaluations of patients. Students will learn using a variety of evidence-based resources and direct faculty teaching. Students will also participate in weekly teaching didactics within the OB/GYN department such as Grand Rounds.

**Credit Hours:** 2**Prerequisites:** Successful completion of the first two years of medical school**OB\_GYN 6937: Ultrasound Two Week Elective**

To provide additional clinical ultrasound experience in the outpatient setting. Students will learn how to integrate acquired knowledge and concepts; then apply them in the management of patients in an outpatient OB/GYN setting.

**Credit Hours:** 2**Prerequisites:** Successful completion of the first two year of medical school

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**OB\_GYN 6960: Gynecologic/Oncology Surgery**

Goals/Objectives: To provide the student with additional surgical and gynecological clinical experience. All gynecologic surgical electives are performed at Ellis Fischel Cancer Center and the University Hospital. Evaluations: An evaluation for this rotation will be completed by the elective chairmen and appropriate resident physicians. The students will be graded on their clinic, ward, and operating room performance. Notes: While on this rotation, students will have exposure to faculty members, three residents, and other fellow medical students. They will have the opportunity to assist in gynecologic oncology surgical cases, attend tumor clinics where they will encounter various procedures such as colposcopies, cryotherapy, and cervical and endometrial biopsies. A copy of a representative weekly schedule is available from the department student coordinator. In addition, students will be required to make two ten minute presentations with audio-visual aids on assigned topics. The students will not take night call, but are expected to attend patient rounds on weekdays and weekends with the residents. The department also holds conferences on Tuesdays and Thursdays which are to be attended. Core reading for this rotation will include Clinical Gynecologic Oncology by DiSaia and Creasman."

**Credit Hours:** 5**Prerequisites:** Ob-Gyn Clerkship

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**OB\_GYN 6964: Obstetrics/Gynecology Offsite Advanced Selective**

Obstetrics/Gynecology Offsite Advanced Selective

**Credit Hours:** 5

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**OPHTH 6321: ABS Age-Related Mechanism of Degeneration**

ABS Age-Related Mechanism of Degeneration

**Credit Hour:** 5-10

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**OPHTH 6323: ABS Ophthalmology Research**

ABS Ophthalmology Research

**Credit Hour:** 5-10

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**OPHTH 6325: ABS Ophthalmology Research and Review**

ABS Ophthalmology Research and Review

**Credit Hours:** 5

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**OPHTH 6585: Ophthalmology**

Ophthalmology

**Credit Hours:** 5

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**OPHTH 6936: Introduction to Ophthalmology**

Welcome to the Ophthalmology Elective. This curriculum is designed to introduce you to the specialty of ophthalmology, which involves the recognition, diagnosis, and management of diseases of the eye. Students will work in the outpatient setting seeing patients at the University Eye Institute. Students will participate in didactic sessions each week. During this 2 week elective, students will become familiar with the screening eye examination, learn to perform a more comprehensive ocular examination, learn about common ocular abnormalities and treatments, and become familiar with the common ophthalmic instruments.

**Credit Hours:** 2**Prerequisites:** successful completion of the first two years of medical school

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**PSCHTY 6005: Psychiatry Clerkship**

Students see patients with psychiatric disorders in the outpatient clinics, in hospital settings and on consultation services.

**Credit Hours:** 6

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**PSCHTY 6015: Rural Psychiatry Clerkship**

Rural Psychiatry Clerkship

**Credit Hours:** 6

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**PSCHTY 6025: Springfield Psychiatry Clerkship**

Students see patients with psychiatric disorders in the outpatient clinics, in hospital settings and on consultation services.

**Credit Hours:** 8**Prerequisites:** successful completion of the first two years of medical school

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**PSCHTY 6105: Remediation Psychiatry Clerkship**

Enrolled students are those who received an unsatisfactory grade in a Psychiatry Clerkship at any Mizzou Med location or site. This course gives the student an opportunity to rectify their deficiency.

**Credit Hours:** 6**Prerequisites:** PSCHTY 6005 Psychiatry Clerkship, received unsatisfactory grade

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**PSCHTY 6363: ABS Psychiatry Research**

ABS Psychiatry Research

**Credit Hour:** 5-10

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**PSCHTY 6365: ABS Psychiatry Research and Review**

ABS Psychiatry Research and Review

**Credit Hour:** 5-10

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**PSCHTY 6367: ABS Psychopharmacology**

ABS Psychopharmacology

**Credit Hour:** 5-10

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**PSCHTY 6630: Narrative Med and the Meaningful Life**

The 4th year medical student will attend didactics and participate in discussions. They will complete suggested readings (short stories, poems and essays), assessments and writing assignments/projects. May be repeated for credit.

**Credit Hours:** 5**Prerequisites:** 4th year medical student, all core clerkships

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**PSCHTY 6730: Adult Outpatient Psychology - Rural**

Adult Outpatient Psychology - Rural

**Credit Hours:** 3

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**PSCHTY 6731: Psychiatry Rural Elective**

The 4th year medical student will participate in the evaluation of adult psychiatric patients and child psychiatric patients in a clinical setting.

**Credit Hours:** 5

**Prerequisites:** PSCHTY 6005; restricted to 4th year medical students

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**PSCHTY 6835: Psychiatry Outpatient Clinic**

Psychiatry Outpatient Clinic

**Credit Hours:** 5

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**PSCHTY 6836: Psychiatry Adult Inpatient Service**

Psychiatry Adult Inpatient Service

**Credit Hours:** 5

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**PSCHTY 6837: Psychosomatic Medicine**

Psychosomatic Medicine

**Credit Hours:** 5

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**PSCHTY 6838: Forensic Psychiatry**

Forensic Psychiatry

**Credit Hours:** 5

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**PSCHTY 6839: Child/Adolescent Psychiatry**

Child/Adolescent Psychiatry

**Credit Hours:** 5

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**PSCHTY 6840: Geriatric Psychiatry**

Geriatric Psychiatry

**Credit Hours:** 5

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**PSCHTY 6939: Two Week - Psychiatry Adult Inpatient Service**

The student will work as a member of an inpatient multidisciplinary team and participate in the evaluation and treatment of adults on an acute care inpatient psychiatry service at MUPC. Typical activities include following several patients, observing and conducting psychiatric evaluation, collecting collateral information, reviewing medical records, participation in staffings, rounds and therapeutic groups and documentation in the medical record.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**PSCHTY 6940: Two Week - Child and Adolescent Psychiatry**

The student will work as a member of an inpatient multidisciplinary team and participate in the evaluation and treatment of children and adolescents on an acute care child inpatient psychiatry service at MUPC. Typical activities include following several patients, observing and conducting psychiatric evaluation, collecting collateral information, reviewing medical records, participation in staffings, rounds and therapeutic groups and documentation in the medical record.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**PSCHTY 6941: Two Week - Psychiatry Consultation and Liaison**

Students will participate in the psychiatric consultation process for medical rehabilitation, medical and surgical inpatients. The types of patients seen present with a wide spectrum of psychiatric conditions such as depression, substance abuse, anxiety disorders, delirium, dementia, somatoform disorders, personality disorders, psychotic disorders and organic behavior/mood disorders. Typical duties include bedside evaluation in collaboration with attendings and residents, documentation and presentation of findings and recommendations and participation in rounds.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**PTH\_AS 2000: Basic Pathology**

Provides nonmedical students with a general understanding of the essential nature of disease, including mechanisms of its development and cause/effect relationships.

**Credit Hours:** 2

**Prerequisites:** 5 hours Biological Science or equivalent and 5 hours Chemistry or PTH\_AS 2201

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**PTH\_AS 2201: Human Anatomy Lecture**

A systems-based survey of human gross anatomy including structure, function and history. Internet access required: lectures and assignments will be online. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** Minimum cumulative MU GPA of 2.5 required

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**PTH\_AS 2203: Human Anatomy Laboratory**

A systems-based survey of human gross anatomy. Internet access required: most materials will be online. One on-campus laboratory meeting per week. Graded A-F only.

**Credit Hours:** 2

**Prerequisites or Corequisites:** PTH\_AS 2201

**Prerequisites:** Minimum cumulative MU GPA of 2.5

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**PTH\_AS 2600: Cytology Female Genital Tract**

A definitive study of normal and abnormal cellular changes occurring within the organ system by means of light microscopy with histologic correlation.

**Credit Hours:** 10

**Prerequisites:** instructor's consent

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**PTH\_AS 2610: Respiratory Cytology**

A definitive study of the normal and abnormal cellular changes occurring within the system by means of light microscopy, with histologic correlation.

**Credit Hours:** 4

**Prerequisites:** instructor's consent

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**PTH\_AS 2615: Cytology of Body Fluids**

Normal and abnormal cellular changes within pleural, peritoneal, pericardial and cerebrospinal fluids by means of light microscopy, with histologic correlation.

**Credit Hours:** 4

**Prerequisites:** instructor's consent

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**PTH\_AS 2620: Gastrointestinal Cytology**

A definitive study of the normal and abnormal cellular changes occurring within the system by means of light microscopy, with histologic correlation.

**Credit Hours:** 4

**Prerequisites:** instructor's consent

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**PTH\_AS 2625: Oral Cytology**

Studies normal and abnormal cellular changes within the oral cavity and oropharynx by means of light microscopy, with histologic correlation.

**Credit Hours:** 2

**Prerequisites:** instructor's consent

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**PTH\_AS 2630: Urinary Cytology**

Studies normal and abnormal cellular morphology from kidney, ureter and bladder samples, with histologic correlation.

**Credit Hours:** 4

**Prerequisites:** instructor's consent

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**PTH\_AS 2685: Special Problems in Cytology**

Relating hematologic morphologic findings in conventional body fluid cytology; also review of techniques used in chromosome cultures and karyotyping, with emphasis on sex-related abnormalities.

**Credit Hours:** 2

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**PTH\_AS 3400: Fundamentals of Medical Technology I**

Emphasizes diseases and basic laboratory methods used in clinical laboratory areas: microbiology, hematology, immunology, virology, tissue typing, blood banking and chemistry.

**Credit Hours:** 3

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**PTH\_AS 3410: Fundamentals of Medical Technology II**

Continuation of PTH\_AS 3400.

**Credit Hours:** 3

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**PTH\_AS 3415: Fundamentals of Medical Technology III**

Continuation of PTH\_AS 3400 and PTH\_AS 3410.

**Credit Hours:** 3

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**PTH\_AS 3420: Clinical Practicum**

Presentation and application of concepts and laboratory method used in areas of immunochemistry, toxicology, mycology, uranalysis and cytogenetics.

**Credit Hours:** 3

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**PTH\_AS 3425: Hemostasis**

Lectures and laboratory exercises in basic theory and techniques of hemostasis including platelet function and disorders, plasma coabulation system, acquired and inherited themostatic disorders.

**Credit Hours:** 2

**Prerequisites:** PTH\_AS 3400, PTH\_AS 3410, PTH\_AS 3415

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**PTH\_AS 3430: Clinical Immunology**

Antigen-antibody reactions and their role in determining infectious, auto-allergic and inflammatory disease states.

**Credit Hours:** 3

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**PTH\_AS 3435: Blood Banking**

Principles and techniques of transfusion practices related through lectures and experience in the blood bank laboratory.

**Credit Hours:** 3

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**PTH\_AS 3440: Clinical Hematology**

Lectures and laboratory regarding procedures for diagnosing hematologic disorders. Experience in collection of specimens from patients; staining, counting and identifying blood and bone marrow cells.

**Credit Hours:** 6

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**PTH\_AS 3445: Clinical Microbiology**

Diagnostic procedures related to the isolation and identification to infectious microorganisms; bacteria and parasites. Emphasis on human pathogens and their sensitivity patterns with commonly used antibiotics.

**Credit Hours:** 6

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**PTH\_AS 3450: Clinical Chemistry**

Principles of quantitative analysis applied to the measurement of substances in biological fluids. Significance of these findings in the diagnosis and treatment of disease.

**Credit Hours:** 6

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**PTH\_AS 3455: Principles of Management and Education**

Lectures and discussion of management techniques and theories used in supervising laboratory personnel. Analysis of educational objectives and exam questions.

**Credit Hour:** 1

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**PTH\_AS 3460: Research and Instructional Techniques**

Involves library and laboratory research. Includes development of oral and written communications skills.

**Credit Hours:** 3

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**PTH\_AS 3485: Problems in Medical Technology**

Individual supervised work in a area of interest in medical technology.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**PTH\_AS 3500: Cytology of the Female Genital Tract**

A definitive study by means of light microscopy of normal and abnormal cellular changes occurring within the female genital tract along with histologic correlation.

**Credit Hours:** 8

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3510: Cytology of Respiratory Tract**

A definitive study by means of light microscopy of normal and abnormal cellular changes occurring with the respiratory tract along with immunohistologic correlation. Prerequisite: senior standing and instructor's consent.

**Credit Hours:** 4

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**PTH\_AS 3515: Cytology of Urinary Tract**

A definitive study by means of light microscopy of normal and abnormal cellular changes occurring within the urinary tract along with histologic correlation.

**Credit Hours:** 4

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3520: Cytology of Gastrointestinal Tract**

A definitive study by means of light microscopy of normal and abnormal cellular changes occurring within the gastrointestinal tract along with histologic correlation.

**Credit Hours:** 5

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3525: Cytology of Body Fluids**

A definitive study of light microscopy of normal and abnormal cellular changes occurring within body fluid along with histologic correlation.

**Credit Hours:** 4

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3530: Cytology of Breast**

A definitive study by means of light microscopy of normal and abnormal cellular changes occurring within the breast with histologic correlation.

**Credit Hours:** 2

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3535: Fine Needle Aspiration Cytology**

A definitive study by means of light microscopy of normal and abnormal cellular changes occurring within the fine needle aspirations from various body sites along with histologic correlation.

**Credit Hours:** 2

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3540: Special Procedures in Cytology**

Study of hematologic findings in body fluid cytology: chromosome cultures and karyotyping. Emphasizing sex-related abnormalities; hormonal evaluation of smears from the female genital tract and their clinical significance.

**Credit Hours:** 2

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3545: Clinical Management**

Procedures and processes helpful in operating in cytology laboratory, especially at the supervisory level.

**Credit Hour:** 1

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3550: Technical Application with Research in Cytotechnology**

Research is an area of interest in cytology resulting in a written and oral presentation.

**Credit Hours:** 2

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3555: Cytologic Preparation**

Independent applications of techniques used to prepare cytologic material.

**Credit Hours:** 2

**Prerequisites:** senior standing and instructor's consent

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**PTH\_AS 3560: Practical Cytotechnology**

Independent application of techniques used to examine cytology material an manage a cytology laboratory.

**Credit Hours:** 6

**Prerequisites:** senior standing and instructor's consent

---

**PTH\_AS 3585: Problems in Cytotechnology**

Individual supervised work in an area of interest in cytology.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**PTH\_AS 3600: Elementary Histology**

Simplified gross and microscopic anatomy of normal organs and tissues commonly found in the routine histopathology laboratory.

**Credit Hours:** 3

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**PTH\_AS 3610: Basic Histotechnology**

Theories and technical application of procedures used in the preparation of tissue sections and slides of microscopic examination; including instrumentation, fixation, dehydration, clearing infiltration, embedding, mirotomy, H&E staining and coverslipping.

**Credit Hours:** 6

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**PTH\_AS 3615: Special Staining Techniques**

Principles and procedures for special staining techniques for carbohydrates, connective tissues, blood, fat and lipids, pigments and minerals, bacteria and fungi, nerve, and other special cell stains.

**Credit Hours:** 6

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**PTH\_AS 3620: Applied Histotechnology**

Application of basic histological techniques in the preparation of histologic sections and slides in a clinical setting.

**Credit Hours:** 9

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**PTH\_AS 3625: Research and Instructional Techniques**

Involves library and laboratory search. Includes development of oral and written communications skills.

**Credit Hours:** 3

**Prerequisites:** senior students admitted to Histotechnology Curriculum

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**PTH\_AS 3630: Clinical Management**

Supervisory techniques and procedures helpful in operating a histopathology laboratory: including laboratory safety, workload recording, and personnel management in a laboratory situation.

**Credit Hours:** 2

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**PTH\_AS 3635: Basic Disease Processes**

Special readings and discussions of basic disease processes of interest to the anatomic pathology laboratory.

**Credit Hours:** 2

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**PTH\_AS 3680: Advances Histotechnology**

Advanced and specialized techniques used in the preparation and processing of muscle, nerve and rectal biopsies; special techniques in cytology; electron microscopy; enzyme and immunohistochemistry; plastic embedding and neuropathologic techniques.

**Credit Hours:** 6

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**PTH\_AS 3685: Problems in Histotechnology**

Individual supervised work in a specialized area of histotechnology.

**Credit Hour:** 1-3

**Prerequisites:** instructor's consent

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**PTH\_AS 4200: General Pathology**

Basic pathological mechanisms of human disease. Introductory principles of clinical laboratory measurements of altered organ system function studied.

**Credit Hours:** 5

**Prerequisites:** PTH\_AS 7200, PTH\_AS 7220, PTH\_AS 7310; and instructor's consent

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**PTH\_AS 4205: General Pathology Laboratory**

Gross and microscopic applied study of basic pathological disease mechanisms. Laboratory assessment of these basic disease mechanisms.

**Credit Hours:** 3

**Prerequisites:** PTH\_AS 7200, PTH\_AS 7220, PTH\_AS 7310; or the equivalents; and instructor's consent

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**PTH\_AS 4210: Seminar in Pathology and Anatomical Sciences**

Presentation and discussion of original investigations and current literature.

**Credit Hour:** 1

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**PTH\_AS 4220: Forensic Pathology and Death Investigation**

Forensic Pathology and Death Investigation.

**Credit Hours:** 2

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**PTH\_AS 4220W: Forensic Pathology and Death Investigation - Writing Intensive**

Forensic Pathology and Death Investigation.

**Credit Hours:** 2

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**PTH\_AS 4222: Gross Human Anatomy (The Health Professions)**

Gross structure and neuroanatomy of the human body; dissection of extremities, back, head, neck abdomen and thorax.

**Credit Hours:** 7

**Prerequisites:** instructor's consent

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**PTH\_AS 4250: Interpretations of Lab Procedures in Primary Health Care**

Discussion and analysis of selected laboratory test procedures used in office and clinic settings involved with primary health care.

**Credit Hour:** 1

**Prerequisites:** graduate level Physiology course and departmental consent

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**PTH\_AS 6331: ABS Advanced Medical Neurosciences**

ABS Advanced Medical Neurosciences

**Credit Hour:** 5-10

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**PTH\_AS 6333: ABS Pathology/Anatomical Science Research**

ABS Pathology/Anatomical Science Research

**Credit Hours:** 5

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**PTH\_AS 6335: ABS Pathology/Anatomical Science Research and Review**

ABS Pathology/Anatomical Science Research and Review

**Credit Hours:** 5

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**PTH\_AS 6341: ABS Science Anatomical Science Teaching**

ABS Science Anatomical Science Teaching

**Credit Hours:** 5

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**PTH\_AS 6343: ABS Surgical Anatomy**

ABS Surgical Anatomy

**Credit Hours:** 5

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**PTH\_AS 6345: ABS Surgical Anatomy of the Head and Neck**

ABS Surgical Anatomy of the Head and Neck

**Credit Hours:** 5

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**PTH\_AS 6347: ABS Surgical Anatomy of the Back and Limbs**

ABS Surgical Anatomy of the Back and Limbs

**Credit Hours:** 5

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**PTH\_AS 6349: ABS Surgical Anatomy of the Pelvis and Perinium**

ABS Surgical Anatomy of the Pelvis and Perinium

**Credit Hour:** 5-10

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**PTH\_AS 6600: Anatomic Pathology**

Anatomic Pathology

**Credit Hours:** 5

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**PTH\_AS 6602: Clinical Pathology**

Clinical Pathology

**Credit Hours:** 5

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**PTH\_AS 6604: Forensic Pathology**

Forensic Pathology

**Credit Hours:** 5

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**PTH\_AS 6606: Anatomic/Clinical Pathology**

Anatomic/Clinical Pathology

**Credit Hours:** 5

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**PTH\_AS 6608: Anatomy Elective**

Anatomy Elective

**Credit Hours:** 5

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**PTH\_AS 6916: Anatomic Pathology Two-Week**

This is a two week rotation. Students will learn how to integrate information and apply previously acquired knowledge and concepts to the assessment and interpretation of surgical pathology, cytopathology, and/or autopsy cases. Students will learn about the procedures necessary to arrive at anatomic pathology diagnoses and the work that goes into specimen processing and examination so as to produce diagnoses.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**PTH\_AS 6917: Clinical Pathology - Laboratory Medicine**

Students will learn how to integrate information and apply previously acquired knowledge and concepts to the assessment and interpretation of clinical laboratory tests. Students will learn about the procedures necessary to arrive at clinical pathology diagnoses and the work that goes into specimen processing and examination so as to produce diagnoses.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the first two years of medical school

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**PTH\_AS 7020: Forensic Pathology and Death Investigation**

Summary of Forensic Death Investigation from beginning to end. Will include some of the current laboratory techniques seen on "CSI" Team taught by experts in the fields including medical examiners, death investigators, forensic anthropologists, police CSI teams, lawyers and others.

**Credit Hours:** 2

**Prerequisites:** Basic Biology

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**PTH\_AS 7220: Human Histology and Organology**

Detailed study of cytology, histology and microscopic anatomy.

**Credit Hours:** 4

**Prerequisites:** 10 hours of Biological Sciences and instructor's consent

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**PTH\_AS 7222: Gross Human Anatomy (The Health Professions)**

Gross/human structure through dissection. Graded on A-F basis only.

**Credit Hours:** 7

**Prerequisites:** Acceptance into Physical Therapy Programs or instructor's consent

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**PTH\_AS 7230: Mammalian Reproduction**

Reproduction in mammals, with emphasis on the neuroendocrine control of the hormones involved in reproductive process: biosyntheses, biologic actions, role.

**Credit Hours:** 3

**Prerequisites:** graduate standing in one of Animal, Biologic, Medical, or Veterinary Sciences, instructor's consent

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**PTH\_AS 7300: Advanced Pathology**

Demonstration and simulation study of gross, microscopic and clinical laboratory pathology of major human organ systems.

**Credit Hours:** 5

**Prerequisites:** PTH\_AS 4200 and PTH\_AS 4205 or equivalent and instructor's consent

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**PTH\_AS 7320: Autonomic Nervous System**

A comprehensive consideration of the autonomic nervous system in man, with emphasis on morphology.

**Credit Hours:** 2

**Prerequisites:** PTH\_AS 2201, Comparative Anatomy or equivalent, and instructor's consent

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**PTH\_AS 7330: Hematopoietic Organs**

Morphological and functional relationships of the blood-forming organs.

**Credit Hours:** 2

**Prerequisites:** Basic Histology and instructor's consent

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**PTH\_AS 7350: Advanced Pathology Laboratory**

Demonstration and simulation and character of work depend upon needs, qualifications, and of major human organ systems.

**Credit Hours:** 3

**Prerequisites:** PTH\_AS 4200 and PTH\_AS 4205 or equivalent and instructor's consent

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**PTH\_AS 7400: Seminars in Translational Medicine**

Students participate in regular seminars and discussion groups with other students interested in clinical and translational sciences. Students, working together with faculty in biomedical sciences and those working in clinical and translational fields, identify seminar topics. Learning objectives and written assignments are arranged on an individual basis. The course is open to all graduate level students and students enrolled in professional schools, for 0-5 credit hours, with instructor's approval. Graded on S/U basis only.

**Credit Hour:** 0-5

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**PTH\_AS 7450: Precision Medicine Informatics**

This course will introduce students with the theoretical and practical aspects of precision medicine informatics. Topics include: complex diseases, computational genomics/proteomics, informatics of molecular interactions and biological pathways, somatic mutations, signal transduction and cancer, biomarker discovery, machine learning and data mining for PMI, networks methods for PMI, knowledge representation and reasoning for PMI. The course will consist of a set of didactic lectures, computational assignments, in-class demonstrations of PMI methods and discussions of recent publications. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** INFOINST 8005 with C or better or INFOINST 7010 with C or better or instructor's consent

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**PTH\_AS 8000: Comparative Pathology**

(same as V\_PBIO 8430). Biochemical and morphologic lesions related to the mechanism of disease expression in plants and animals.

**Credit Hours:** 3

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**PTH\_AS 8010: Current Issues in Anatomical Sciences**

Survey of the recent literature in integrative anatomy, including functional, evolutionary, developmental and translational anatomy, conducted through readings and discussion. Grade determined by participation and presentation of weekly readings. May be repeated for a maximum of 10 hours. Graded on S/U basis only.

**Credit Hour:** 1

**Prerequisites:** instructor's consent

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**PTH\_AS 8090: Advanced Pathology**

Open only to properly qualified graduate students, with counsel of faculty. Focus of MS-related research in evolutionary morphology, genomics, neuroscience, pathobiology or laboratory sciences. Graded on S/U basis only.

**Credit Hour:** 1-99

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**PTH\_AS 8100: Fundamentals of Evolutionary Biology**

Principles of modern evolutionary biology. Topics include: phylogeny, paleobiology, developmental processes, genetic and phenotypic variation, form and function, speculation, macroevolution, and molecular mechanisms.

**Credit Hours:** 3

**Prerequisites:** instructor's consent

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**PTH\_AS 8150: Fundamentals of Evolutionary Morphology**

This course is a survey of the fundamentals of modern evolutionary morphology. Topics will include: patterns of vertebrate evolution, comparative methods, development and ontogeny, constraint, functional morphology, evolutionary innovations, and experimental methods. Graded on A-F basis only.

**Credit Hours:** 3

**Prerequisites:** instructor's consent required

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**PTH\_AS 8201: Human Anatomy: Back and Upper Limb**

Developmental, gross, and clinical anatomy of the human back and upper limb, including skeletal, muscular, nervous, and vascular tissues. Graded on A-F basis only.

**Credit Hours:** 2

**Prerequisites:** instructor's consent required

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**PTH\_AS 8202: Human Anatomy: Thorax and Abdomen**

Developmental, gross, and clinical anatomy of the human thorax and abdomen. Graded on an A-F basis only.

**Credit Hours:** 2

**Prerequisites:** instructor's consent required

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**PTH\_AS 8203: Human Anatomy: Head, Neck and Neuroanatomy**

Developmental, gross and clinical anatomy of the human head, neck and neuroanatomy. Graded on A-F basis only.

**Credit Hours:** 2

**Prerequisites:** instructor's consent required

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**PTH\_AS 8204: Human Anatomy: Pelvis and Lower Limb**

Developmental, gross and clinical anatomy of the human pelvis and lower limb. Graded A-F basis only.

**Credit Hours:** 2

**Prerequisites:** instructor's consent required

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**PTH\_AS 8285: Problems in Pathology and Anatomical Sciences**

Regions or systems which may include developmental, microscopic, and gross anatomy.

**Credit Hour:** 1-99

**Prerequisites:** instructor's consent

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**PTH\_AS 8290: Research in Pathology and Anatomical Sciences**

Research unrelated to thesis work in evolutionary morphology, genomics, neuroscience, pathobiology or laboratory sciences.

**Credit Hour:** 1-99

**Prerequisites:** instructor's consent

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**PTH\_AS 8310: Anatomy of the Human Nervous System**

A comprehensive consideration of the morphology of the nervous system, emphasizing correlation of structure and function.

**Credit Hours:** 3

**Prerequisites:** PTH\_AS 2201, Comparative Anatomy or equivalent, and instructor's consent

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**PTH\_AS 8450: Human Anatomy Teaching Practicum**

Provides practical experience teaching clinically oriented human anatomy in lecture and laboratory settings. For students pursuing doctoral degrees in Pathobiology. Enrollment is limited to students who have completed PTH\_AS 8201, PTH\_AS 8202, PTH\_AS 8203, and PTH\_AS 8204. Graded on S/U basis only. May be repeated for credit.

**Credit Hour:** 1

**Prerequisites:** instructor's consent

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**PTH\_AS 8500: Seminar in Translational Neuroscience**

Students participate in seminars and discussion groups. Masters students identify seminar topics and present existing data with findings. PhD students identify seminar topics, conduct research and present findings. Learning objective and written assignments are arranged individually. May be repeated for credit. Graded on S/U basis only.

**Credit Hour:** 1-5

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**PTH\_AS 9090: Research in Pathology and Anatomical Sciences**

Open only to properly qualified graduate students, with counsel of faculty. Focus of PhD-related research in evolutionary morphology, genomics, neuroscience or pathobiology. Graded on S/U basis only.

**Credit Hour:** 1-99

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**PTH\_AS 9290: Research in Pathology and Anatomical Sciences**

Open only with instructor's consent. Courses with specialized lectures in various topics such as evolutionary morphology, genomics, neuroscience and pathobiology, depending on faculty expertise and student demand. Graded on S/U basis only.

**Credit Hour:** 1-99

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**RADIOL 4328: Introductory Radiation Biology**

(same as BIO\_SC 4328, NU\_ENG 4328, V\_M\_S 7328). Concepts of ionizing radiations, their actions on matter through effects on simple chemical systems, biological molecules, cell, organisms, man.

**Credit Hours:** 3

**Prerequisites:** junior standing Sciences/Engineering; one course in Biological Sciences and Physics/Chemistry; or instructor's consent

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**RADIOL 6371: ABS Radiology Mechanism of Disease**

ABS Radiology Mechanism of Disease

**Credit Hour:** 5-10

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**RADIOL 6373: ABS Radiology Research**

ABS Radiology Research

**Credit Hour:** 5-10

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**RADIOL 6375: ABS Radiology Research and Review**

ABS Radiology Research and Review

**Credit Hour:** 5-10

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**RADIOL 6645: Radiology**

Goals/Objectives: General survey of all subspecialties of radiology. Evaluations: Written evaluations performed by both faculty and residents.

**Credit Hours:** 5

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**RADIOL 6650: Advanced Radiology**

Advanced Radiology

**Credit Hours:** 5

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**RADIOL 6745: Radiology - Rural**

Radiology - Rural

**Credit Hours:** 5

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**RADIOL 6931: Introduction to Radiology**

This two week elective will provide students with exposure to chest and body imaging (1 week per area). They will participate in 2-3 didactic sessions focused on the basics of radiology and imaging that is important to all fields of medicine, as well as video lectures one day a week along with the upperclassmen that are doing their 4 week elective at that time. Videos present a case based learning plan involving common emergent situations that may be encountered during their clinical training.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**RADIOL 7328: Introductory Radiation Biology**

(same as BIO\_SC 7328, NU\_ENG 7328, V\_M\_S 7328). Concepts of ionizing radiations, their actions on matter through effects on simple chemical systems, biological molecules, cell, organisms, man.

**Credit Hours:** 3

**Prerequisites:** Sciences/Engineering; one course in Biological Sciences and Physics/Chemistry; or instructor's consent

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**RADIOL 8085: Problems in Radiology**

Supervised investigation in an aspect of radiological science usually culminating in a written report.

**Credit Hour:** 1-3

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**RADIOL 8090: Problems in Radiology**

Supervised investigation in an aspect of radiological science usually culminating in a written report.

**Credit Hour:** 1-3

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**SURGRY 6006: Surgery Clerkship**

Emphasis is placed on the diagnosis and treatment of disorders requiring surgical intervention. Each student has a faculty mentor-advisor, attends faculty discussion sessions that cover objectives in the required textbooks and takes call under the supervision of surgical residents. Students are assigned patients from all surgical specialties, participate in preoperative examinations and evaluations, assist during surgical procedures and follow the postoperative management process.

**Credit Hours:** 8

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**SURGRY 6016: Rural Surgery Clerkship**

Rural Surgery Clerkship

**Credit Hours:** 8

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**SURGRY 6026: Springfield Surgery Clerkship**

Emphasis is placed on the diagnosis and treatment of disorders requiring surgical intervention. Students are assigned patients from all surgical specialties, participate in preoperative examinations and evaluations, assist during surgical procedures and follow the postoperative management process.

**Credit Hours:** 8

**Prerequisites:** successful completion of the first two years of medical school

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**SURGRY 6039: SCC Vascular Surgery Selective**

The 4th year vascular surgery student will function similar to a "junior house officer" and be actively involved in the diagnosis and management of vascular disorders. They will work in the clinics, participate in ward rounds, teaching conferences, and will be a full member of the vascular team in and out of the operating room.

**Credit Hours:** 5

**Prerequisites:** Fourth Year Medical Student. Successful completion of 5 of the 7 core clerkships. One of the 5 must be the Surgery Clerkship. SURGRY 6006, 6016, 6026, or 6106

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**SURGRY 6106: Remediation Surgery Clerkship**

Enrolled students are those who received an unsatisfactory grade in a Surgery Clerkship at any Mizzou Med location or site. This course gives the student an opportunity to rectify their deficiency.

**Credit Hours:** 8

**Prerequisites:** SURGRY 6006 Surgery Clerkship, received unsatisfactory grade

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**SURGRY 6383: ABS Surgery Research**

ABS Surgery Research

**Credit Hour:** 5-10

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**SURGRY 6385: ABS Surgery Research and Review**

ABS Surgery Research and Review

**Credit Hours:** 5

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**SURGRY 6655: Surgical Off-Site Elective**

Surgical Off-Site Elective

**Credit Hours:** 5

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**SURGRY 6658: Burn Unit**

Burn Unit

**Credit Hours:** 5

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**SURGRY 6661: Surgery Research Elective**

Surgery Research Elective

**Credit Hours:** 5

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**SURGRY 6671: Oncology Multidisciplinary**

Oncology Multidisciplinary

**Credit Hours:** 5

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**SURGRY 6672: Neuro-Oncology/Radiosurgery**

Neuro-Oncology/Radiosurgery

**Credit Hours:** 5

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**SURGRY 6686: Neurosurgery B**

Neurosurgery B

**Credit Hours:** 5

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**SURGRY 6687: Advanced Neurosurgery**

Advanced Neurosurgery

**Credit Hours:** 5

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**SURGRY 6688: Orthopaedic Surgery Reserach Elective**

Student will identify interest in surgical clinical research and other topical areas of orthopaedic surgery. The research will define concepts relevant to the practice of orthopaedic surgery. The student will engage in self-directed learning and evaluation of new information.

**Credit Hours:** 5

**Prerequisites:** SURGRY 6006; level M4

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**SURGRY 6759: General Surgery Externship - Rural**

General Surgery Externship - Rural

**Credit Hours:** 5

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**SURGRY 6770: Surgery Rural Elective**

The 4th year surgery student will function as a surgical extern and be integrated into the pre-operative, operative, and post-operative care of surgical patients. The student will function as surgical extern with close supervision and one-on-one instruction.

**Credit Hours:** 5

**Prerequisites:** SURGRY 6002 and SURGRY 6006

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**SURGRY 6774: Otolaryngology - Rural**

Otolaryngology - Rural

**Credit Hours:** 3

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**SURGRY 6780: Urology - Rural**

Urology - Rural

**Credit Hours:** 5

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**SURGRY 6781: Orthopaedic Surgery A - Rural**

Orthopaedic Surgery A - Rural

**Credit Hours:** 5

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**SURGRY 6860: EMERGENCY MEDICINE**

EMERGENCY MEDICINE

**Credit Hours:** 5

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**SURGRY 6926: Ambulatory Otolaryngology**

The student will recognize all subspecialty areas included on this rotation: facial trauma, otology/neurotology, head and neck surgical oncology, facial plastic surgery, sinus surgery, pediatric ENT, laryngology and allergy. The student will be exposed to a broad spectrum of patients (adult and pediatric) in both procedural and clinical settings. Students will demonstrate improved technical skills during the 2 week rotation.

**Credit Hours:** 2

**Prerequisites:** successful completion of the first two years of medical school

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**SURGRY 6938: SCC Urology Two Week Elective**

Students will work under the supervision of a faculty preceptor at the Springfield Clinical Campus. Students will see patients in the outpatient clinic and/or inpatient hospital setting, perform a history and physical exam, and develop a patient-centered assessment and plan. They will discuss their findings, assessment and plan with the faculty preceptor and see the patient together. The student will complete oral patient presentations and document patient encounters in the medical record as directed by the faculty preceptor. Students will gain significant exposure to the Urologic operating room environment and procedural treatments, including open, laparoscopic, robotic, and endoscopic procedures.

**Credit Hours:** 2

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**SURGRY 6944: SCC Vascular Surgery 2-week**

This course is intended as an introduction to the specialty of vascular surgery. The vascular surgery student will be actively involved in the diagnosis and management of vascular disorders. They will work in the clinics, participate in ward rounds, teaching conferences, and will be a full member of the vascular team in and out of the operating room.

**Credit Hours:** 2

**Prerequisites:** Successful completion of the Surgery Clerkship

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**SURGRY 6955: Ambulatory ENT/Urology**

Goals/Objectives: This elective will offer students an exposure to ambulatory care in urology and otolaryngology. Students will see a broad range of patients and numerous outpatient procedures. Students will have close supervision during this experience. Both services have a combined outpatient population of 24,000 visits per year. Students will be exposed to numerous situations they would face in a primary care office. Clinic is offered five days per week by each service. Observation in the O.R. is available and attendance at teaching conferences is required. There will be a written exam given at the completion of the 2 weeks of ENT.

**Credit Hours:** 5

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**SURGRY 6957: Cardiothoracic Surgery**

Cardiothoracic Surgery

**Credit Hours:** 5

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**SURGRY 6958: Surgical off-Site Selective**

Surgical off-Site Selective

**Credit Hours:** 5

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**SURGRY 6959: General Surgery Externship**

Goals/Objectives: 1. Provide the student with ability to function as a first year general surgery house officer with close supervision and one-on-one instruction. 2. Become familiar with pre-operative, operative, and post-operative care of general surgical patients. 3. Become familiar with the graded responsibility structure necessary to ethically conduct post-graduate surgical residency training. 4. Develop bedside patient care skills. 5. Develop reading and clinical research skills necessary for contemporary surgical care.

**Credit Hours:** 5

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**SURGRY 6971: Surgical Critical Care**

The Surgical Critical Care student will acquire a broad exposure to assessment and management of critically ill and injured patients. The student will participate in daily rounds and patient care with the Surgical Critical Care service. Students will become an active member of the multidisciplinary ICU team and remain under the close supervision of Acute Care Surgery Faculty and Residents. Participation with the members of the multidisciplinary critical care team creates an excellent practical learning environment, while didactic conferences/case presentations compliment the experience.

**Credit Hours:** 5

**Prerequisites:** Surgery Clerkship

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**SURGRY 6972: Surgical Oncology**

Surgical Oncology

**Credit Hours:** 5

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**SURGRY 6973: Head and Neck Surgical Oncology**

Head and Neck Surgical Oncology

**Credit Hours:** 5

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**SURGRY 6974: Otolaryngology**

Goals/Objectives: The Otolaryngology student rotation offers learning through participation in daily care of patients, case discussion in conferences, and didactic conferences. All subspecialty areas are included on this rotation, including facial trauma, otology, neurotology, head and neck surgical oncology, facial reconstruction, sinus surgery, pediatric ENT and allergy. Significant outpatient experience is provided and the extent of operating room participation to the student's needs and preferences. The student sees a full spectrum of patients (adult and pediatric) at the University and the VA. The student sees and learns about a variety of outpatient problems during the outpatient segment of this rotation. A wide variety of surgical procedures are observed in the operating room. The residents and faculty encourage an individually tailored learning experience for the student. Supplemental texts and other teaching aids are encouraged. Clinical research projects are available for interested and committed students.

**Credit Hours:** 5

**Prerequisites:** Surgery Clerkship

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**SURGRY 6975: Pediatric Surgery**

Goals/Objectives: To gain a working knowledge of a) diagnosis, b) preoperative care, c) surgery, and d) postoperative care of the 1) congenital 2) traumatic 3) oncologic and 4) common surgical conditions affecting infants and children. This rotation is designed for the student planning a career that includes the care of infants and children. CURRICULUM: Attendance on daily rounds and participation in pediatric surgery clinic are mandatory. The student should also be present in radiology for all inpatient and outpatient contrast studies on surgical patients and consults. Operating room exposure can be individualized; the student is expected to be present, but not necessarily scrubbed, for the key portion of each case. Pediatric Surgical texts can be found in the Medical Library under RD 137, in the Pediatric or Surgery libraries, in the bookstore. Rowe - Essentials of Pediatric Surgery, Holder - Pediatric Surgery, Welch - Pediatric Surgery (4th ed.), Coran - Surgery of the Neonate.



**Credit Hours:** 5

**Prerequisites:** Surgery Clerkship

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**SURGRY 6976: Plastic Surgery**

Goals/Objectives: The plastic surgery student rotation is considered "hands on" experience for the student rotating in the division of plastic surgery. This is a busy rotation with good opportunity for clinical exposure. The patient population includes all subspecialty areas of plastic surgery including hand and microsurgery, head and neck cancer surgery, congenital deformities, burns, facial trauma, and major reconstruction, as well as cosmetic surgery. On this rotation, the student is expected to have an in-depth opportunity to learn, practice, and hone surgical suturing techniques and to first or second assist on many major surgical procedures. The graphic specialty of plastic surgery is best appreciated by participation and observation and there will be ample opportunity for this. In addition to the ward and major operating room duties, the student will obtain ambulatory patient care exposure by participating in the clinics, in the evaluation of new patients, and the after care of surgery patients. In addition, a significant percentage of the surgery is done as an outpatient and the student should have the opportunity to gain appreciation of the nuances of surgery done in the ambulatory environment. Incumbent to these considerations are exposure and appreciation of cost containment in plastic surgical procedures.

**Credit Hours:** 5

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**SURGRY 6977: Acute Care Surgery**

Students will participate in patient care, gather pertinent patient data, and develop plans of care for the patients on the surgery service. Case presentations will be given to the surgical team each day. Night and weekend call should be expected.

**Credit Hours:** 5

**Prerequisites:** Surgery and Internal Medicine Clerkship

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**SURGRY 6979: Vascular Surgery**

Vascular Surgery

**Credit Hours:** 5

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**SURGRY 6980: Urology**

The goal of the rotation is to provide a comprehensive urologic experience for those students who may be interested in Urology as a career as well as those students who simply want a more in-depth experience before pursuing another specialty. At the conclusion of the rotation, the student will be able to competently manage common urologic conditions such as hematuria, incontinence, and erectile dysfunction and recognize those patients who need referral to a specialist. To accomplish this, emphasis is placed on the management of both outpatients and inpatients. Active participation in the operating room is expected and the student will assist in a wide variety of urologic procedures. Students will also participate in outpatient procedures such as cystoscopy and vasectomy. Basically, the student will function as an extern on the University Urologic Service with appropriate patient care responsibilities.

**Credit Hours:** 5

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**SURGRY 6981: Orthopaedic Surgery Sub-Internship**

Goals/Objectives: Rotation for students actively interested (more aggressive) students in orthopaedics as a career. Emphasis will be placed on surgical indications, operative technique and post-operative care of orthopaedic patients. The student will be assigned by Ortho faculty to two different orthopaedic teams (sports medicine, foot and ankle, total joint, general, pediatrics, trauma, and hand) for two weeks at a time. Each student would be given an extensive reading schedule, a list of topics to be covered, given a written or oral examination including both services emphasized at the end of block. Brief oral presentation, to the residency or service on which they are working, on orthopaedic subject of choice pertaining to Ortho service/residency assigned. CURRICULUM: The student will spend two weeks on two different university teams during this rotation. The student will be expected to participate in all aspects of the orthopaedics services they are assigned. This will include outpatient clinics, elective and emergent OR time, routine day-to-day care of patients on the orthopaedic service, and consultations. The student will take four nights of call with the Ortho residents assigned to service. The student will be evaluated by the attending and residents on the two services to which they have been assigned.

**Credit Hours:** 5

**Prerequisites:** Surgery Clerkship

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**SURGRY 6982: Introduction to Orthopaedic Surgery**

Goals/Objectives: Rotations for students interested in a career in primary care. The student will learn physical diagnosis and outpatient as well as surgical treatment of common orthopedic conditions. Each student will be given a list of topics that will be covered, a reading list to which the student would be obligated to read and given a short written and/or oral examination of the musculoskeletal system emphasized. Brief oral presentation, to the residency or service on which they are working, on an orthopedic subject of choice pertaining to Ortho service/residency assigned. The student will be assigned for the four weeks by Ortho Faculty to a preceptor from one of the following areas: sports medicine, foot and ankle, total joint, general, pediatrics, trauma or hand. CURRICULUM: The student on this rotation will be expected to learn to diagnose and manage commonly seen orthopedic conditions in the assigned orthopedic area. The student will participate in outpatient clinics, OR cases, rounds and conferences. The student will take two call nights with the Ortho Resident assigned to service. Basic techniques of splinting and cast application will be learned by sessions with the orthopedic cast technician.

**Credit Hours:** 5

**Prerequisites:** Surgery Clerkship

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**SURGRY 6983: Advanced Orthopaedic Surgery**

Advanced Orthopaedic Surgery

**Credit Hours:** 5

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**SURGRY 6985: Neurosurgery A**

Goals/Objectives: This course will provide the conscientious student an opportunity to acquire the following: 1. The ability to perform comprehensive neurological evaluation of the patient including both history taking and physical examination. This will entail a review of basic neuroanatomy and neurophysiology and a correlation of that information with the requirements of clinical medicine. 2. A basic understanding of neurosurgical diseases and their evaluation and management. Of particular importance will be the emphasis placed upon the initial

evaluation of patients with central and peripheral nervous system trauma and neoplasms, cerebrovascular disease, congenital diseases of the nervous system, pain problems, diseases of the spine and lumbar discs.

**CURRICULUM:** In order to direct the objectives of this course, students will be exposed to the following: 1. Individualized teaching sessions with the faculty. 2. Combined conferences with neurology, neuroradiology and neuropathology. 3. Outpatient clinics at the UMHSC and EFCC (Ellis Fischel). 4. The inpatient services of neurosurgery at UMHSC. 5. The operating room at UMHSC. **Evaluations:** The progress of the student will be evaluated through personal interaction with the faculty and residents and through an oral examination at the end of the course.

**Credit Hours:** 5

**Prerequisites:** Surgery Clerkship

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**SURGRY 6986: Bariatric Surgery**

Bariatric Surgery

**Credit Hours:** 5

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**SURGRY 6988: Critical Care Neurosurgery**

**Goals/Objectives:** The student will gain experience with the clinical evaluation of patients with critical care neurosurgical problems such as head trauma, subarachnoid hemorrhage, and spinal cord injury. The student will perform neurologic assessments, evaluate laboratory data and participate in the decision making on patients with these disorders. **CURRICULUM:** 1. Daily inpatient rounds in the MNICU, SICU and CCU on the neurosurgical patients. 2. Individualized teaching with faculty. 3. **Conferences:** Neurosurgery Grand Rounds, Neuro-radiology, Neuro-pathology, Neuroscience. **Evaluations:** By interactions with faculty and residents and oral examination at the end of the rotation.

**Credit Hours:** 5

**Prerequisites:** Surgery Clerkship

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**SURGRY 6989: Pediatric Neurosurgery**

**Goals/Objectives:** To provide interested students the opportunity to acquire exposure and knowledge in the field of pediatric neurosurgery. This elective will allow the student to learn about clinical entities such as craniofacial anomalies, hydrocephalus, neuroendoscopy, congenital and central nervous system anomalies, and trauma of the CNS. The student becomes part of a team and closely interacts with the attending physician, neurosurgery residents, and clinical nurse specialist. **CURRICULUM:** 1. Daily inpatient rounds. 2. Individualized teaching with faculty. 3. **Clinics:** Chiari and Pediatric Neurosurgery. 4. **Conferences:** Neurosurgery Grand Rounds, Neuro-radiology, Neuro-pathology, Neuroscience. **Prerequisites:** Surgery Clerkship

**Credit Hours:** 5

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