



**The University of Texas
Health Science Center at Houston
McGovern Medical School**

2025-2026 Academic Catalog*

*The current catalog is online and can be found at <https://catalog.uth.edu>.

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MCGOVERN MEDICAL SCHOOL

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About Us

Introduction

On November 11, 1968, the Coordinating Board of the Texas College and University System approved the establishment of a new four-year public school of medicine in the Texas Medical Center in Houston. On June 13, 1969, The University of Texas Medical School at Houston was created by act of the Legislature, and an appropriation for its initial cost became effective September 1, 1969. Three considerations led to the organization of the school: local, regional, and national shortages of physicians; the extraordinary, but until then underutilized, resources for medical education in Houston and in the Texas Medical Center; and the large number of well-qualified candidates seeking entry to medical school.

A dean and supporting staff were appointed in the spring of 1970. Two years were then devoted to assembling faculty, resources, and equipment; designing a curriculum; and organizing these various parts into an effective medical education institution. During this period, The University of Texas Medical School at Houston was accredited by the Association of American Medical Colleges (AAMC) Liaison Committee on Medical Education (LCME). The faculty grew rapidly, and effective instruction began, in both the basic sciences and clinical disciplines. New facilities were opened, major construction programs were initiated, and the renovation of what is now known as Memorial Hermann-Texas Medical Center was completed. In 1972, The University of Texas Medical School at Houston, along with five other degree programs, was incorporated into The University of Texas Health Science Center at Houston (UTHealth Houston).

In November 2015, after a transformational gift from the McGovern Foundation, the school was renamed John P. and Kathrine G. McGovern Medical School, placing a renewed emphasis on humanism, ethics, research, and scholarship.

Along with the Doctor of Medicine degree, McGovern Medical School offers a Master of Science in Clinical Research which began enrollment in 2002 and the Master of Science in Anesthesia which began enrollment in 2024.

Now, more than 50 years after incorporation, McGovern Medical School at UTHealth Houston has achieved a position of excellence among the notable institutions in the Texas Medical Center.

Mission Statement

The mission of the McGovern Medical School is to educate a diverse body of future physicians and biomedical scientists for a career dedicated to the highest ideals of their profession; to provide outstanding patient-centered care; and to conduct innovative research that benefits the health and well-being of the population of Texas and beyond.

Core Values

- Deliver compassionate patient care focusing on effectiveness, quality, safety, and service
- Provide a competency-based curriculum emphasizing integrity and professionalism
- Embrace a culture of lifelong learning, evidence-based practice, open inquiry, and scholarship
- Cultivate professional and respectful communication
- Support the health and well-being of students, faculty, and staff
- Promote interprofessional collaboration
- Support leadership and innovation in teaching, research, and service
- Advocate for excellent care for the underserved and for the reduction of health care disparities

Accreditation

University Accreditation

The University of Texas Health Science Center at Houston is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award baccalaureate, masters, doctoral, and professional degrees. Degree-granting institutions also may offer credentials such as certificates and diplomas at approved degree levels. Questions about the accreditation of The University of Texas Health Science Center at Houston may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website (www.sacscoc.org) (<https://www.sacscoc.org/>).

McGovern Medical School MD Program Accreditation

The McGovern Medical School is accredited by the Liaison Committee on Medical Education (LCME) located at:

655 K Street, NW, Suite 100, Washington, DC 20001
Telephone: 202.828.0596
<https://www.lcme.org/>; lcme@aamc.org

School Administration and Faculty

Administrative Officers

Deans

LaTanya J. Love, MD
Dean

Martin Citardi, MD

Vice Dean for Clinical Technology

Mark D. Hormann, MD

Vice Dean for Educational Programs

Sheela Lahoti, MD

Vice Dean for Admissions and Student Affairs

Bela Patel, MD

Vice Dean for Healthcare Quality

Jon E. Tyson, MD, MPH

Vice Dean for Clinical Research and Healthcare Quality

Nancy O. McNiel, PhD

Senior Associate Dean for Administrative Affairs

Kevin A. Morano, PhD

Senior Associate Dean for Faculty Affairs

Pamela Promecene-Cook, MD

Senior Associate Dean for Graduate Medical Education

Angela H. Smith, CPA

Senior Associate Dean for Finance

John H. Byrne, PhD

Associate Dean for Research

Wallace A. Gleason, Jr., MD

Associate Dean for Admissions and Student Affairs

Tien Ko, MD

Associate Dean for Harris Health Programs

Dana M. McDowelle, PhD

Associate Dean for Admissions and Student Affairs

Charles C. Miller, PhD

Associate Dean for Hospital Quality Initiatives

Thomas J. Murphy, MD

Associate Dean for Community Affairs and Health Policy

Philip R. Orlander, MD

Associate Dean for Educational Programs

Allison R. Ownby, PhD, MEd

Associate Dean for Educational Programs

Nahid Rianon, MD

Associate Dean for Faculty Affairs

Eric J. Thomas, MD, MPH

Associate Dean for Healthcare Quality

Sean C. Blackwell, MD

Assistant Dean for Healthcare Quality, Women's & Perinatal

Peter Doyle, MD

Assistant Dean for Harris County Programs

Hilary Fairbrother, MD

Assistant Dean for Educational Programs

J. Chase Findley, MD

Associate Dean for Accreditation and Educational Quality Improvement

Johnson George, MBA

Assistant Dean of Administration and Faculty Affairs

David Hall, MD

Assistant Dean for Admissions & Student Affairs

Peggy Hsieh, MEd, PhD

Assistant Dean for Educator Development

Samuel D. Luber, MD

Assistant Dean for Graduate Medical Education

Nany Perrier, MD

Assistant Dean for Admissions and Student Affairs

Bal Reddy, MD

Assistant Dean for Admissions and Student Affairs

John Riggs, MD

Assistant Dean for Professionalism

Kristina (Kristi) Tebo, MD

Assistant Dean of Global Health

Eugene C. Toy, MD

Assistant Dean for Educational Programs

Directors

Nathan Carlin, PhD

Director, The John P. McGovern Center for Humanities and Ethics

Samuel E. Neher, MS, EdD

Director, Accreditation and Continuous Quality Improvement

McGovern Medical School Departments and Faculty

The most current listing of faculty is available on each department's website.

Anesthesiology, Critical Care and Pain Medicine

<https://med.uth.edu/anesthesiology/>

Biochemistry and Molecular Biology

<https://med.uth.edu/bmb/>

Cardiothoracic and Vascular Surgery

<https://med.uth.edu/cvs/>

Dermatology

<https://med.uth.edu/dermatology/>

Diagnostic and Interventional Imaging

<https://med.uth.edu/radiology/>

Emergency Medicine

<https://med.uth.edu/emergencymedicine/>

Family and Community Medicine

<https://med.uth.edu/familymedicine/>

Integrative Biology and Pharmacology

<https://med.uth.edu/ibp/>

Internal Medicine

<https://med.uth.edu/internalmedicine/>

Microbiology and Molecular Genetics
<https://med.uth.edu/mmg/>

Neurobiology and Anatomy
<https://med.uth.edu/nba/>

Neurology
<https://med.uth.edu/neurology/>

Neurosurgery
<https://med.uth.edu/neurosurgery/>

Obstetrics, Gynecology and Reproductive Sciences
<https://med.uth.edu/obgyn/>

Ophthalmology and Visual Science
<https://med.uth.edu/ophthalmology/>

Orthopedic Surgery
<https://med.uth.edu/ortho/>

Otorhinolaryngology-Head and Neck Surgery
<https://med.uth.edu/orl/>

Pathology and Laboratory Medicine
<https://med.uth.edu/pathology/>

Pediatric Surgery
<https://med.uth.edu/pediatricsurgery/>

Pediatrics
<https://med.uth.edu/pediatrics/>

Physical Medicine and Rehabilitation
<https://med.uth.edu/pmr/>

Psychiatry and Behavioral Sciences
<https://med.uth.edu/psychiatry/>

Surgery
<https://med.uth.edu/surgery/>

Departments and Chairs

Anesthesiology, Critical Care and Pain Medicine

Holger K. Eltzschig, MD, PhD

Biochemistry and Molecular Biology

Vasanthi Jayaraman, PhD, interim

Cardiothoracic and Vascular Surgery

Anthony Estrera, MD

Dermatology

Ronald P. Rapini, MD

Diagnostic and Interventional Imaging

Susan D. John, MD

Emergency Medicine

Samuel Luber, MD, MPH, *ad interim*

Family and Community Medicine

Carlos A. Moreno, MD, MSPH

Integrative Biology and Pharmacology

Carmen Dessauer, PhD

Internal Medicine

David D. McPherson, MD

Microbiology and Molecular Genetics

Michael Lorenz, PhD

Neurobiology and Anatomy

Pramod K. Dash, PhD

Neurology

Louise D. McCullough, MD, PhD

Neurosurgery

Jacques Morcos, MD

Obstetrics, Gynecology and Reproductive Sciences

Sean C. Blackwell, MD

Ophthalmology and Visual Science

Timothy J. McCulley MD

Orthopedic Surgery

Walter R. Lowe, MD

Otorhinolaryngology- Head & Neck Surgery

Martin J. Citardi, MD

Pathology and Laboratory Medicine

Md Amer Wahed, MD

Pediatric Surgery

Kevin P. Lally, MD

Pediatrics

Mary E. Aitken, MD, MPH

Physical Medicine and Rehabilitation

Gerard Francisco, MD

Psychiatry and Behavioral Sciences

Jair C. Soares, MD, PhD

Surgery

Richard J. Andrassy, MD

Affiliated Hospitals and Outpatient Facilities

McGovern Medical School at UTHealth Houston (McGovern Medical School) is affiliated with several inpatient hospitals, including Memorial Hermann-Texas Medical Center (Memorial Hermann Hospital System), Children's Memorial Hermann Hospital, Lyndon B. Johnson Hospital (Harris Health System), The University of Texas MD Anderson Cancer Center, TIRR Memorial Hermann, John S. Dunn Behavioral Sciences Center at UTHealth Houston, and UTHealth Houston Harris County Psychiatric Center (HCPC), providing a broad range of clinical services. As such, the students are exposed to a large and diverse population, with an appropriate balance of common and rare disorders.

Please see affiliated hospitals (<https://med.uth.edu/>) for further information.

Ambulatory care and training are provided at the UT Physicians clinics, at eight community health centers operated by the Harris Health System, and at several other clinical outreach programs and WIC (Women, Infants and Children) clinics located throughout the greater Houston community. Please see UT Physician clinic locations (<https://www.utphysicians.com/locations/>) for further information.

Tuition and Fees

Tuition and fees are subject to change and become effective on the date enacted. The Texas Legislature does not set the specific amount for any particular student fee. Student fees are authorized by state statute; the specific fee amounts and the determination to increase fees are made by the university administration and The University of Texas System Board of Regents.

For a current list of tuition and fees for all McGovern Medical School academic programs please refer to the Bursar's Office website here (<https://www.uth.edu/bursars/student-resources/tuition-fees/mcgovern-medical-school/>).

For other fee information, see UTHealth Houston Required Fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/required-fees-all-schools/>), Program-specific Required Fees, Course and Lab Fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/mcgovern-medical-school/>) and Student Services Fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/student-service-fees/>).

For information on Cost of Attendance (<https://www.uth.edu/sfs/cost-of-attendance.htm>) (COA) and other financial information please refer to the UTHealth Houston Student Financial Services (<https://www.uth.edu/sfs/>) website. The COA is an estimated cost of a student's educational and living expenses for the period of enrollment. It includes tuition, fees, books/supplies, room and board, and other expenses.

Academic Standards

For information regarding policies and procedures of the following programs see the respective websites.

MD Degree (<https://med.uth.edu/oep/policies/>)

MSCR Degree (p. 13)

MSA Degree (p. 8)

UTHealth Houston Handbook of Operating Procedures (HOOP)

Students are charged with knowledge of and compliance with all UTHealth Houston regulations concerning student conduct and discipline as set forth in the UTHealth Houston HOOP (<https://www.uth.edu/hoop/>).

Reasonable Accommodation

Individuals seeking reasonable accommodations related to disability, pregnancy and parenting, or religion must initiate the accommodation process by contacting their school's designated Section 504 Coordinator (<https://www.uth.edu/hoop/section-504-coordinators.htm>) and completing a request form found on the University Relations & Equal Opportunity (UREO) webpage (<https://www.uth.edu/hr/service-areas/university-relations-equal-opportunity/>).

Accommodations are not retroactive, and require advance notice to implement. To allow adequate time to evaluate the request, engage in the interactive process, and make arrangements for any accommodation to be provided, requestors are strongly urged to contact UREO as soon as possible.

For more information, visit HOOP Policy 101, Disability and Pregnancy Accommodations (<https://www.uth.edu/hoop/policy.htm?id=1448050>), HOOP Policy 232, Pregnant and Parenting Students (<https://www.uth.edu/hoop/policy.htm?id=32d838cb-8f11-40f7-b8e5-f42719d41202>), and HOOP Policy 112, Religious Accommodations (<https://www.uth.edu/hoop/policy.htm?id=1448072>).

HOOP Policy 186, Student Conduct and Discipline

All students are required to obey federal, state, and local laws and to comply with the University of Texas System Board of Regents Rules and Regulations, the rules and regulations of The University of Texas Health Science Center at Houston, and directives issued by administrative officials of the University or UT System in the course of their authorized duties. Students are also required to obey standards of conduct appropriate for the academic institution. Any student who engages in conduct that violates the Regents' Rules and Regulations, University or UT System rules, or federal, state, or local laws is subject to disciplinary action.

For additional information on the student conduct and discipline process, please see HOOP Policy 186, Student Conduct and Discipline (<https://www.uth.edu/hoop/policy.htm?id=1448220>).

Programs of Study

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Master of Science in Anesthesia (MSA)

Program Description

The Master of Science in Anesthesia (MSA) is a 28-month, full-time, graduate-level program that requires 100 semester credit hours taken over seven consecutive semesters. This competency-based program integrates didactic learning, simulation-based training, and clinical instruction to prepare students for a career as a Certified Anesthesiologist Assistant.

The MSA program will educate and train students to manage complex clinical cases as part of the Anesthesia Care Team (ACT). Students will learn standard anesthesia technical skills, how to use an anesthesia machine, how to communicate effectively with patients, and how to manage anesthetic cases. After rigorous academic and clinical training, graduates will be qualified to provide anesthetic care under the direction of a physician anesthesiologist. The goal of the MSA program is to prepare competent entry-level Anesthesiologist Assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

Students will receive didactic instruction encompassing all relevant topics appropriate to the clinical anesthetist. Students will benefit from learning from various teaching platforms, such as problem-based learning discussions, flipped classroom sessions, and traditional lectures. Procedural skills and anesthesia case management will be trained in a simulation lab focusing on both technical and non-technical skills to prepare students for the rigors of the perioperative environment. Students will complete a minimum of 650 anesthetic cases and 2,500 hours of clinical training, gaining exposure to unique and complex surgical procedures by leading medical and procedural experts.

Overall, Certified Anesthesiologist Assistants receive training in basic medical science and clinical practice to utilize modern technology to monitor and interpret data in all anesthesia care environments. Upon completion of the program, graduates will be able to:

- Gather and interpret patient information
- Synthesize and present organized evaluations of their findings to physicians
- Interpret data from invasive monitoring, administer anesthetics and controlled substances under the direction of supervising physician anesthesiologists
- Establish and maintain appropriate airway management and provide ventilator support
- Evaluate and treat life-threatening events according to established life support protocols such as Basic Life Support (BLS), Advanced

Cardiac Life Support (ACLS), and Pediatric Advanced Life Support (PALS)

Upon program completion, students will meet the requirements to take the National Certification Examination, administered by the National Commission for the Certification of Anesthesiologist Assistants (NCCAA). After passing, graduates become certified anesthesiologist assistants.

Accreditation

The UTHealth Houston Master of Science in Anesthesia program was awarded initial accreditation on January 16th, 2025, by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Accreditation Review Committee for the Anesthesiologist Assistant (ARC-AA).

The Commission on Accreditation of Allied Health Education Programs is located at 9355 113th N. #7709, Seminole, Florida, 33775, and can be reached at (727) 210-2350 or at mail@caahep.org.

The CAAHEP website is www.caahep.org (<http://www.caahep.org/>). ARC-AA can be reached at (612) 836-3311 or at arc-aa@arc-aa.org.

General Admission Requirements for the MSA Program

Citizenship

Must be a U.S. citizen or permanent resident.

Degree

A bachelor's degree from an accredited institution of higher education.

Prerequisites

All prerequisites must be completed prior to matriculation. Course substitutions will not be considered. All prerequisites must be completed at a regionally accredited institution of higher education in the United States, U.S. territory or Canada.

The minimum grade for each prerequisite is 3.00. If a course is repeated (i.e. for a better grade), all grades will be incorporated in the computation. This method of calculation is adopted to give fair weight to applicants who attempted the course only once.

- Biology I and II (8 credit hours)
- Chemistry I and II (8 credit hours)
- Physics I and II (8 credit hours)
- Organic Chemistry I (4 credit hours)
- Human Anatomy & Physiology (8 credit hours)
 - A combination of alternative science courses that relate to the study of Human Anatomy and/or Human Physiology will fulfill this requirement.
 - Any combination of Human Anatomy I & II and Human Physiology I & II will fulfill this requirement.
- Calculus I (4 credit hours)

- Precalculus will not fulfill this requirement.
- Alternative Calculus courses may fulfill this requirement
- English (3 credit hours)
- Alternative writing courses in the English language will satisfy this requirement.

*All prerequisites must be taken within 7 years of the application deadline.

Grade Point Average (GPA)

Minimum cumulative GPA of 3.00

Standardized Test Scores

- Medical College Admission Test (MCAT) is the preferred standardized exam for admission.
 - Minimum acceptance score: 498
 - MCAT score must be within 3 years of the date of application submission. For more information regarding official MCAT scores, see here (https://help.liaisonedu.com/CASAA_Applicant_Help_Center/Sending_Your_Official_Transcripts_and_Test_Scores_to_CASAA/Sending_Official_Test_Scores_to_CASAA/Official_MCAT_Scores/).
- Graduate Record Examinations (GRE) scores will be considered (minimum score 309).
 - Minimum Verbal Reasoning score: 153
 - Quantitative Reasoning score: 156
 - Analytical Writing Score: 4.0 or above.
 - GRE Designated Institution (DI) Code for UTHealth Houston CASAA portal: 1385

Applicants with a strong application but do not achieve the minimum standardized test score will be evaluated by the admissions team on an individual basis. If an applicant has taken both exams, they should submit official scores from both exams. Acceptance of an applicant into the program will be at the final discretion of the admissions committee.

Physical and Technical Requirements:

All applicants must have the general abilities required of anesthesia healthcare providers. This includes:

- Motor skills – the physical ability to perform the technical and procedural functions required in patient care, including the ability to perform complex two-handed skills.
- Communication skills – the ability to effectively communicate with patients, faculty, staff and peers both in written and oral form.
- Physical health – the physical capacity to stand for prolonged periods of time in an operating room and/or clinic, the ability to lift up to ten pounds of equipment (intravenous fluids, monitors and other equipment necessary to administer a complete anesthetic).

- Sensory abilities – the ability to assess a patient utilizing the five senses, including sight, hearing and touch.
- Professionalism – must exhibit professional behavior, including honesty, altruism, respect for others, compassion, empathy, and respect for patient privacy.

A disability does not preclude a student from admission. The MSA program is committed to providing equal opportunities for qualified students with disabilities in accordance with state and federal laws and regulations. The intent of the law is to ensure equal access to individuals with disabilities who are otherwise qualified to meet the essential demands of the program.

For more information see UTHealth Houston Handbook of Operating Procedures (HOOP) Policy 101 Disability and Pregnancy Accommodation.

Shadowing Experience

The MSA program requires that every applicant be familiar with the practice of anesthesia, the operating room environment, and the role that anesthesiologist assistants play in the Anesthesia Care Team (ACT). Applicants must arrange to spend time with an anesthesiologist or anesthesiologist in an operating room environment observing the administration of anesthesia and other human patient care activities. It is strongly recommended for applicants to shadow for a minimum of eight (8) hours to familiarize themselves of the role and responsibilities of an anesthesia provider. The MSA program does not have a formal program for assistance with shadowing opportunities.

Personal Statement

A narrative explaining your motivation for applying to the Master of Science in Anesthesia program.

Letters of Recommendation

Three (3) letters of recommendation. Applicants are encouraged to select individuals who can provide personalized and comprehensive evaluations of their qualifications and character. Recommenders should ideally be able to speak to the applicant's educational background, critical thinking, communication abilities, interpersonal skills, leadership qualities, and relevant experience in healthcare settings.

Acceptable letters of recommendations can come from former supervisors, academic advisors or college professors, or an individual in healthcare such as a Certified Anesthesia Assistant, Physician, or Nurse. Recommendation letters submitted by relatives, personal healthcare providers, family or personal friends of the family are not recommended.

Transfer of Credit

The MSA program does not accept transfer of credits from other MSA programs.

Application Procedure

Applications should be submitted online through the Centralized Application Service for Anesthesiologist Assistants (CASAA). CASAA is a service of the Association of Anesthesiologist Assistant Education Programs (AAAE), the national organization of educational leaders collaborating to advance and support Anesthesiologist Assistant (AA) education.

The following are required:

1. A completed CASAA application with documents that include a Curriculum Vitae, shadowing/healthcare hours, and verification that the MCAT or GRE has been taken. Each applicant will be required to submit a personal statement that explains their interest in becoming an Anesthesiologist Assistant.
2. Letters of reference (3) on official letterhead from individuals who are qualified to evaluate the applicant's academic or professional performance, as well as ability and motivation to complete the program.
3. Official transcripts covering all periods of post-secondary enrollment in accredited institutions of higher education. Applicants should request the institution to send official (original) electronic transcripts directly through the CASAA portal. Copies of official transcripts sent by the applicant are not considered. Transcripts must include both grades and credit hours.
4. Applicants who are nationals of countries where English is not the parent language are required to submit scores from the Test of English as Foreign Language (TOEFL).

Applicants can contact the Educational Program Coordinator (valerie.g.aragon@uth.tmc.edu) for further questions regarding the application process. The MSA program utilizes a rolling admission system where early offers can be made.

Interview Process

MSA program interviews take place between October and February during the application cycle, with admission decisions made on a rolling basis. Competitive applicants will be notified via email by the MSA Admissions Committee with specific details regarding their mandatory in-person interview. The interview is designed to evaluate interpersonal skills, emotional intelligence, professionalism, adaptability to social cues, and overall demeanor. These criteria aim to assess the applicant's ability to navigate the professional and collaborative environments integral to success in the MSA program.

Acceptance Requirements

Acceptance is contingent upon successful completion of outstanding prerequisites (if any), immunization screening (see below), and clearance of a mandatory criminal background check.

Immunizations and Health Records

Refer to the UTHealth Houston General Information Catalog (<https://catalog.uth.edu/general-information/student-policies/>) student policies for immunization requirements and Student Health Services (<https://www.uth.edu/studenthealth/>) page for additional information.

MSA Student Computer Policies for Matriculating Students

The MSA program adheres to the Medical School Information Technology (MSIT) standards. In order to fully utilize the information resources required by the faculty during your education and be able to complete online examinations, the school requires that all incoming medical students bring a laptop that meets the university's hardware, software, and data security requirements. The computers cannot be more than two years old at the time of orientation. For more information about computer

requirements, please visit the MSIT website (<https://med.uth.edu/msit/medical-school-student-computer-policies-for-entering-class-of-2023/>).

Tuition and Fees

Please refer to the Office of Bursar website (<https://www.uth.edu/bursars/student-resources/tuition-fees/mcgovern-medical-school/>) for the current MSA program tuition and fee schedules. For other fee information, see required fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/required-fees-all-schools/>), course and lab fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/mcgovern-medical-school/>) and student services fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/student-service-fees/>). Additional student information regarding tuition and fee exceptions and/or waivers, veterans education benefits, and the policy for Texas resident tuition can be found on the Registrar's website here (<https://www.uth.edu/registrar/current-students/>).

2nd & 3rd Year Clinical Rotation Expenses

During the second and third years of the MSA program, students may be required to complete clinical rotations outside the Greater Houston Area. As a result, MSA students should anticipate additional expenses associated with relocating to a different city. These costs—primarily related to travel, accommodation, and living arrangements—are an integral part of Anesthesiologist Assistant clinical training. Estimated expenses may total approximately \$20,000 or more; however, actual costs will vary based on individual circumstances.

MSA Curriculum Requirements

The MSA program is a contiguous seven-semester model (including summer sessions) encompassing a combination of didactic and simulation-based learning as well as significant clinical experience in anesthesia and perioperative medicine. The prescribed course of study features an early introduction into the clinical setting to apply basic science and anesthesia-specific didactic knowledge. The primary clinical training sites will be at clinical affiliate anesthesiology groups within the Texas Medical Center located in Houston. Senior and advanced clinical experiences will also be gained at affiliated facilities through strategic partnerships with community anesthesiology groups throughout the Houston region and State of Texas.

The curriculum is divided into three areas: (1) didactic coursework, (2) simulation labs, and (3) clinical work. Didactic courses are designed to build base knowledge of organ systems and their functions, pathophysiology, medical terminology, and the utility and function of anesthesia-related equipment. Simulation experience is utilized to apply didactic knowledge in a safe environment where students can practice both technical and clinical practice skills. Lastly, students further strengthen their clinical knowledge by working with physician anesthesiologists and certified anesthesiologist assistants to manage patients in a clinical setting, focusing on airway management, hemodynamic support, anesthesia induction, maintenance and extubation, lab interpretation, crisis management and other core skills.

*There will not be an option to transfer credit, receive credit for professional experience or to place out of courses.

Code	Title	Hours
MSA Course Requirements		
Semester 1 - Fall		
ANES 5101	Introduction to Clinical Anesthesia Experience	2
ANES 5201	Pharmacology for Anesthesiologist Assistants I	4

ANES 5202	Airway Management	2
ANES 5301	Introduction to Anatomy and Physiology for Anesthesiologist Assistants	5
ANES 5350	Introduction to Simulation for Anesthesiologist Assistants	3
ANES 6301	Basics of Clinical Anesthesia	2
Semester 2 - Spring		
ANES 6201	Anesthesia Principles & Practice I	2
ANES 5302	Applied Physiology in Anesthesia I	4
ANES 5351	Case Based Simulation I	2
ANES 6302	Clinical Anesthesia Experience I	3
ANES 5204	Pharmacology for Anesthesiologist Assistants II	4
ANES 5203	Patient Monitoring and Instrumentation I	2
Semester 3 - Summer		
ANES 6202	Anesthesia Principles & Practice II	2
ANES 5303	Applied Physiology in Anesthesia II	3
ANES 5250	Case Based Simulation II	2
ANES 6303	Clinical Anesthesia Experience II	3
ANES 5205	Patient Monitoring and Instrumentation II	2
Semester 4 - Fall		
ANES 5206	Anesthesia Principles & Practice III	2
ANES 5207	Applied Physiology in Anesthesia III	4
ANES 6801	Clinical Anesthesia Experience III	8
ANES 5150	Subspecialty Case Based Simulation I	1
Semester 5 - Spring		
ANES 6101	Clinical Anesthesia Experience IV	10
ANES 5106	Board Review for Anesthesiologist Assistants I	2
ANES 5151	Subspecialty Case Based Simulation II	1
Semester 6 - Summer		
ANES 5108	Board Review for Anesthesiologist Assistants II	1
ANES 5152	Subspecialty Case Based Simulation III	1
ANES 6102	Clinical Anesthesia Experience V	10
Semester 7 - Fall		
ANES 5109	Board Review for Anesthesiologist Assistants III	1
ANES 6103	Clinical Anesthesia Experience VI	10
ANES 6104	Sub-Specialty for Anesthesiologist Assistants	2
Total Hours		100

Case Logs

Case logs are essential for documenting clinical experiences and procedures, ensuring that students meet the procedural and patient care benchmarks established by the UT MSA program. These logs enable both students and the program to track individual progress, assess clinical competency, and maintain compliance with accreditation standards. Additionally, case logs serve as critical records for credentialing and preparation for independent practice. The 72-hour case log submission window accommodates unforeseen circumstances that may prevent students from submitting their case logs by the conclusion of the scheduled clinical day.

Grading System

Didactic Courses:

Didactic courses follow a traditional letter grade (A, B, C, and F) and are calculated into the Grade Point Average (GPA). GPA is the sum of grade

points earned divided by the sum of credit hours passed and failed. Students receive exam grades following each exam and course grades at the end of each semester. Students must have a cumulative GPA greater than or equal to 3.00 to progress to the next year.

The corresponding grading scale is as follows:

Grading Type	Grading Component
'A' Letter Grade = 4.00 Grade Points Earned	90 - 100 Numeric Average Range
'B' Letter Grade = 3.00 Grade Points Earned	80 - 89.99 Numeric Average Range
'C' Letter Grade = 2.00 Grade Points Earned	70 - 79.99 Numeric Average Range
'F' Letter Grade = 0.00 Grade Points Earned	< 70.00 Numeric Average Range

Clinical Experience Courses:

Clinical performance is evaluated by preceptor evaluations of anesthesiologist assistant students on a scale from 1 to 5 (exceptional) that are averaged and calculated into the letter grade as seen below for the following courses: Introduction to Clinical Anesthesia Experience, Clinical Anesthesia Experience I, II, III, IV, V, and VI.

These courses will follow the letter grades (A, B, C, and F) as indicated below.

Grading Type	Grading Component
'A' Letter Grade = 4.00 Grade Points Earned	4.00 - 5.00 Average Clinical Evaluation Score
'B' Letter Grade = 3.00 Grade Points Earned	3.00 - 3.99 Average Clinical Evaluation Score
'C' Letter Grade = 2.00 Grade Points Earned	2.75 - 2.99 Average Clinical Evaluation Score
'F' Letter Grade = 0.00 Grade Points Earned	< 2.75 Average Clinical Evaluation Score

Clinical performance is assessed based on knowledge of practice, patient care, communication skills, professionalism, interdisciplinary/inter-professional communication, attendance, case-log documentation, and demonstration of ethical practice.

Criteria for Advancement Through the MSA Program

Successful completion of each MSA program year (SAA1 - SAA2) will require:

- Cumulative GPA greater than or equal to 3.00 for the given year
 - First-year students will repeat the first-year curriculum (semesters 1, 2, & 3) if the cumulative GPA of semesters 1, 2, & 3 is below 3.0.
 - Second-year students will repeat the second-year curriculum (semesters 4, 5, & 6) if the cumulative GPA for semesters 4, 5, & 6 is below 3.0.
- Satisfactory clinical performance as determined by the Program and Clinical faculty
- Satisfactory professionalism standing as determined by the Program and Clinical faculty
- Good standing financial obligations to the University

Students who fail to meet any of the requirements listed above will not progress to the next Program Year.

MSA Graduation Requirements

The MSA Program requires that all of the following criteria are met:

1. Students must achieve and maintain a cumulative grade point average (GPA) of 3.00 or above.
2. Students must finish the program of study in four (4) years or less. This is inclusive of leaves of absence.
3. Students must be found suitable for clinical practice. Suitability for clinical practice is assessed through overall performance, including didactic course GPA (numerically graded with minimum passing score for each course determined by each course instructor) and clinical course performance (graded by evaluations from faculty, comprehensive exams and professionalism scoring). For more information, please refer to the MSA Student Handbook.
4. Students must have completed degree requirements of 100 semester credit hours, a minimum of 650 anesthetic cases, and a minimum of 2,500 clinical hours.

MSA Student Grievance Policy

Students are obligated to make every attempt to resolve grievances with the faculty member prior to filing a formal grievance request. If the student cannot resolve the matter, the student should follow the grievance procedure as outlined below.

Concerns that cannot be resolved through informal grievance procedures may be addressed through the filing of a formal grievance. Following the unsatisfactory resolution of an informal grievance, the student may file a formal written grievance to the MSA Program Director within seven (7) calendar days of the failed resolution. The Program Director will meet with appropriate parties (students, Assistant Program Director(s), Didactic Director, Medial Director(s)) to seek a resolution that is in the best interest of the individual student, student body, and the MSA program as a whole. The Program Director may resolve the issue or invoke a MSA P&P Committee hearing to assist in finding an appropriate resolution. The Program Director will respond, in writing, within ten (10) working days of receiving the written complaint. The student will be notified in writing of the resolution, as will any other pertinent parties. The student had the right to formally appeal the decision of the MSA P&P Committee or the Program Director, in writing, to the Chair of the Department of Anesthesiology, Critical Care and Pain Medicine within seven (7) calendar days of receiving the appealed decision. The Chair of the Department of Anesthesiology will make a final decision. If the student feels this resolution does not follow university policy or was made with bias, the student has seven (7) calendar days from the date of receiving the decision from the Chair of the Department of Anesthesiology to formally write to the Dean of the McGovern Medical School. In this case, the Dean will review the written grievance and previous recommended resolutions and decide on the final resolution of the matter. The Dean will respond, in writing, within ten (10) working days of receiving the appeal request. The student will be notified, in writing, of the resolution, as will any other pertinent parties. The decision of the Dean is final.

For more information, please refer to HOOP Policy 220, Student Complaints (<https://www.uth.edu/hoop/policy.htm?id=2553c1c1-c490-4ad0-a570-e263e12e0dff>).

Course Descriptions - Anesthesia

Course descriptions in school catalogs and the Course Search (<https://catalog.uth.edu/course-search/>) are correct at the time of publication. See myUTH (<https://uthidp.uth.edu/nidp/saml2/sso/?id=Campus-Affiliate-LOA2-DUO&sid=0&option=credential&sid=0>) for more recent course information and to register for courses.

ANES 5101 Introduction to Clinical Anesthesia Experience (2 Credits)

This course gives students exposure to the complex anesthesia perioperative environment. Students will first shadow an anesthesia provider before applying the knowledge gained during introductory didactic and simulation courses. Letter Graded Letter Graded

ANES 5106 Board Review for Anesthesiologist Assistants I (2 Credits)

This course is designed to review the principles of anesthesia and prepare students for more complex topics that combine pharmacological and physiological principles in preparation for the NCCAA Certification Exam. Topics in this course include autoimmune diseases, comatose states, hepatic anatomy and physiology, anticoagulants, clotting factors, and mechanical circulatory support. Letter Graded

ANES 5108 Board Review for Anesthesiologist Assistants II (1 Credit)

This course is designed to review the principles of anesthesia and prepare students for more complex topics that combine pharmacological and physiological principles in preparation for the NCCAA Certification Exam. Topics in this course include principles of shock states, vascular pathophysiology, hepatic disorders, transfusion reactions, and cardiovascular anesthesia. Letter Graded

ANES 5109 Board Review for Anesthesiologist Assistants III (1 Credit)

This course is designed to review the principles of anesthesia and prepare students for more complex topics that combine pharmacological and physiological principles in preparation for the NCCAA Certification Exam. Topics in this course include endocrine and neuroendocrine disorders, vasoactive agents, OB pharmacology and physiology, pediatric pharmacology and physiology, vitamins and supplements, otorhinolaryngology anesthesia, and laser surgery and safety. Letter Graded

ANES 5150 Subspecialty Case Based Simulation I (1 Credit)

This is an advanced simulation course that simulates cardiac, respiratory, pediatric, neurologic, and obstetric emergencies that can potentially happen in the perioperative period. The focus of this course is to strengthen technical skills, clinical judgment, and inter-disciplinary team communication skills. Letter Graded

ANES 5151 Subspecialty Case Based Simulation II (1 Credit)

Students will explore the management of complex sub-specialty (Pediatrics, Cardiac, OB, Neuro) cases in a simulated environment. Other topics include interventional radiology, craniectomies, BLS, ACLS, and PALS simulation, trauma surgery, TIPS, ESRD and diabetic management, AICD management, burn management, atrial-fibrillation management, and Video Assisted Thoracic Surgery (VATS). Letter Graded

ANES 5152 Subspecialty Case Based Simulation III (1 Credit)

Students will explore the management of complex sub-specialty cases in a simulated environment. Other topics include surgical site infection protocols, spinal and epidural placement, ultrasound guided IV and arterial line placement, MAC, and Non-Operating Room Anesthesia (NORA), and central line placement. Letter Graded

ANES 5201 Pharmacology for Anesthesiologist Assistants I (4 Credits)

The focus of this course is to instruct students on the pharmacokinetics and pharmacodynamics of the most commonly used medications in anesthesia. Letter Graded

ANES 5202 Airway Management (2 Credits)

This course will explore the anatomy, structure, function and management of both the adult and pediatric airways. Letter Graded

ANES 5203 Patient Monitoring and Instrumentation I (2 Credits)

This course will explore the ASA standard monitoring system, advanced patient monitoring and the associated equipment and technical skills necessary to monitor patient vital signs. Monitoring modalities taught include electrophysiology, non-invasive and invasive blood pressure monitoring, bispectral index, pulse oximetry (including the medications and clinical scenarios that can alter this reading), respiratory gas analysis, temperature monitoring, advanced hemodynamic monitoring, coagulation studies (TEG analysis), neuromuscular junction monitoring, transesophageal echocardiography, cerebrovascular testing, microbial analysis and urinalysis. Letter Graded

ANES 5204 Pharmacology for Anesthesiologist Assistants II (4 Credits)

This is an advanced course focusing on the pharmacokinetics and pharmacodynamics of more complex and less common anesthetic agents. Letter Graded

ANES 5205 Patient Monitoring and Instrumentation II (2 Credits)

This is an advanced course focusing on how to provide anesthetic care for complex patients. The emphasis is on advanced patient monitoring techniques, equipment and modalities. Letter Graded

ANES 5206 Anesthesia Principles & Practice III (2 Credits)

This course will continue to guide anesthesiologist assistant students on how to develop the critical thinking skills and advanced technical skills necessary to be a well-rounded, competent mid-level provider capable of assisting the anesthesiologist and other members of the perioperative care team manage crisis care. Students will participate in specialty-based anesthesia management problem-based learning discussions in this course. Letter Graded

ANES 5207 Applied Physiology in Anesthesia III (4 Credits)

This course will take a more in-depth exploration of the human body systemic functions and will focus on how derangements in these systems affect the evaluation of and ASA (American Society of Anesthesiology) classification of patients, specifically how knowledge of patient physiological derangements affects their overall anesthetic risk for morbidity and mortality. The major organ systems (cardiac, neurological, renal, gastrointestinal, liver, and immunologic systems) will be covered. Letter Graded Letter Graded

ANES 5250 Case Based Simulation II (2 Credits)

In this advanced course, a simulator will be used to engage students in active learning and critical thinking by participation in clinical case-based scenarios structured to cover advanced anesthesia monitoring, instrumentation and crisis management. The cases will develop student's understanding of applied physiology, pharmacology, and advanced monitoring skills to detect and remedy simulated patient anesthetic complications and hemodynamic perturbations. Letter Graded

ANES 5301 Introduction to Anatomy and Physiology for Anesthesiologist Assistants (5 Credits)

This course will integrate structural anatomy into fundamental physiologic principles. This course will also focus on clinically relevant anatomy and physiology related to organs affected by intravenous and inhalational anesthetics. Intrinsic details and functionality of the major organ systems (cardiac, neurological, renal, gastrointestinal, liver, and hematologic systems) will be covered. Letter Graded Letter Graded

ANES 5302 Applied Physiology in Anesthesia I (4 Credits)

This is an advanced course that will utilize an organ system approach to teach human pathology. Students will learn how to evaluate the severity of patient disease to determine anesthetic risk. The major organ systems (cardiac, neurological, renal, gastrointestinal, liver, and hematologic systems) will be covered. Letter Graded

ANES 5303 Applied Physiology in Anesthesia II (3 Credits)

This advanced course will take a more in-depth exploration of human systemic functions and pathology that include trauma anesthesia, critical care, pediatric anesthesia, obstetric anesthesia, and pediatric cardiovascular anesthesia. Letter Graded

ANES 5350 Introduction to Simulation for Anesthesiologist Assistants (3 Credits)

Students will learn technical skills like peripheral intravenous catheter placement and participate in simulated clinical scenarios. This course will focus on patient monitoring (pulse oximetry, capnography, blood pressure measurement, heart rate/EKG, temperature, respiratory rate), exploration of anesthesia machine functionality, anesthetic alarm interpretation, breathing circuits, cardiac output monitoring, arterial pressure monitoring and central venous pressure monitoring. Letter Graded

ANES 5351 Case Based Simulation I (2 Credits)

Students will engage in active learning and critical thinking by participation in clinical case-based scenarios structured to cover common intraoperative complications. The cases will develop student's understanding of applied physiology, pharmacology, and advanced monitoring skills to detect and remedy simulated patient anesthetic complications and hemodynamic perturbations. Letter Graded

ANES 6101 Clinical Anesthesia Experience IV (10 Credits)

In this course, students will continue to rotate on the advanced anesthesia clinical services such as Pediatric Anesthesia, Cardiovascular Anesthesia, Obstetrical Anesthesia, Trauma, Neurosurgical Anesthesia, Pediatric Cardiovascular Anesthesiology, ICU, Anesthesia Clinic, Regional Anesthesia, and Advanced Orthopedic Surgical Anesthesia with an Acute Pain Management Focus. Students will receive supervised instruction in the operating room. Letter Graded

ANES 6102 Clinical Anesthesia Experience V (10 Credits)

In this course, students will continue to rotate on the advanced anesthesia clinical services such as Pediatric Anesthesia, Cardiovascular Anesthesia, Obstetrical Anesthesia, Trauma, Neurosurgical Anesthesia, Pediatric Cardiovascular Anesthesiology, ICU, Anesthesia Clinic, Regional Anesthesia, and Advanced Orthopedic Surgical Anesthesia with an Acute Pain Management Focus. Students will receive supervised instruction in the operating room. Letter Graded

ANES 6103 Clinical Anesthesia Experience VI (10 Credits)

In this course, students will continue to rotate on the advanced anesthesia clinical services such as Pediatric Anesthesia, Cardiovascular Anesthesia, Obstetrical Anesthesia, Trauma, Neurosurgical Anesthesia, Pediatric Cardiovascular Anesthesiology, ICU, Anesthesia Clinic, Regional Anesthesia, and Advanced Orthopedic Surgical Anesthesia with an Acute Pain Management Focus. Students will receive supervised instruction in the operating room. Letter Graded

ANES 6104 Sub-Specialty for Anesthesiologist Assistants (2 Credits)

In this course, the student will spend their time in clinicals in a sub-specialty area of interest. This can include Pediatric anesthesia, Obstetrical anesthesia, Trauma, Regional anesthesia, Cardiovascular anesthesia, Neurosurgical anesthesia, and Non-Operative Room Anesthesia. The student will devise a project proposal in collaboration with a faculty member of their choosing that summarizes the clinical pearls of the subspecialty. The student will present the content to their student colleagues. Letter Graded

ANES 6201 Anesthesia Principles & Practice I (2 Credits)

This course will guide anesthesiologist assistant students on how to develop an anesthetic plan and preoperatively assess their patients in the domains of respiratory, cardiac, GI, renal, neuro, endocrine, hepatic, coagulation, and preoperative testing evaluation. Letter Graded

ANES 6202 Anesthesia Principles & Practice II (2 Credits)

This course will guide anesthesiologist assistant students on how to develop the critical thinking skills and advanced technical skills necessary to be a well-rounded, competent mid-level provider capable of assisting the anesthesiologist and other members of the perioperative care team manage crisis care. Students will participate in specialty-based anesthesia management problem-based learning discussions in this course Letter Graded

ANES 6301 Basics of Clinical Anesthesia (2 Credits)

This introductory course will orient anesthesia assistant students to the clinical environment and teach them how to assimilate into the anesthesia care team. Topics of study will include: infection control, universal precautions, hand washing, operating room standard protocols, sterile technique, an overview of the history of anesthesia, the types of anesthetics delivered, ASA standard monitoring, the basics of the anesthesia machine. Letter Graded. Letter Graded

ANES 6302 Clinical Anesthesia Experience I (3 Credits)

This course gives students exposure to complex anesthesia intraoperative environment. Students will apply the knowledge gained during the introductory didactic courses to practical clinical cases in the surgical environment. Letter Graded

ANES 6303 Clinical Anesthesia Experience II (3 Credits)

This course continues to give students exposure to complex anesthesia intraoperative environment. Students will apply the knowledge gained throughout their training to practical clinical cases in the surgical environment. Letter Graded

ANES 6801 Clinical Anesthesia Experience III (8 Credits)

In this course, students will begin to rotate on the advanced anesthesia clinical services such as Pediatric Anesthesia, Cardiovascular Anesthesia, Obstetrical Anesthesia, Trauma, Neurosurgical Anesthesia, Pediatric Cardiovascular Anesthesiology, ICU, Anesthesia Clinic, Regional Anesthesia, and Advanced Orthopedic Surgical Anesthesia with an Acute Pain Management Focus. Students will receive supervised instruction in the operating room. Letter Graded

Masters in Clinical Research (MSCR)

Program Description

The Master of Science in Clinical Research (MSCR) Degree Program at McGovern Medical School is a focused, flexible, and affordable program that trains clinical investigators to design and conduct exemplary quality patient-oriented research. This 36-credit degree program is designed to accommodate clinicians' busy schedules, with most courses offered on Wednesday afternoons or evenings. The program is largely comprised of live, in-person small group classes; this is not an online or distance-

learning program. The time required for degree completion depends on the amount of time and effort a student devotes to the program, and a minimum of three years is typical for most students with concurrent clinical obligations. The program includes graduate-level coursework in epidemiology, biostatistics, clinical trial design, health care economics, and clinical guideline development. Students in the MSCR program complete a series of courses, practica, as well as a thesis research project.

Students will receive training in planning and executing clinical research designs as well as analyzing and disseminating research results.

Upon completion of the program, graduates will be able to:

1. Apply the concepts of evidence-based medicine and health services research to clinical practice at the local, state, regional, and national levels using practice guidelines (informed by a literature review and critical evidence appraisal) as instruments of evidence-based practice.
2. Postulate a sound new research question and design a clinical research study to address this question using the most unbiased feasible design.
3. Perform statistical analysis and interpret the results in a manner that is consistent with the assumptions of the analytic models and the study design.

MSCR Admission Requirements

This program is primarily intended for those with a graduate healthcare-related professional degree (e.g., MD, DO, PharmD) who currently hold a full-time faculty or fellowship appointment at an academic institution. Applicants should have a commitment to pursue a career as an independent clinical investigator. The rapid pace of the curriculum assumes a working knowledge of clinical medicine and an excellent scholastic aptitude. Successful applicants must have the necessary departmental support, including protected time and an established relationship with a research mentor who should have a track record of external research funding. All applicants are required to be engaged in or preparing to conduct clinical research.

General admission requirements for the MSCR program are below:

1. Degree requirement: (one of the following degrees is required)
 - a. Advanced degree in health-related field (MD, DO, PhD in a related field, DDS or DMD, RPh or PharmD)
 - b. Bachelor's or master's degree from an accredited institution of higher education, with a G.P.A. of greater than 3.0 and previous work experience in a health-related field, such as nursing, psychology, dietetics, etc.
2. Pre-requisite training: At least one year of the Clinical Research Curriculum (CRC) is strongly encouraged before applying to the MSCR program. The CRC is an introductory level series of courses open to all clinical researchers at McGovern Medical School, other Texas Medical Center institutions, and CTSA-affiliated institutions. More information on the CRC can be found here (<https://med.uth.edu/crebm/clinical-research-education/clinical-research-curriculum/>).

Application and Admission Procedures

Applications should be submitted online to the UTHealth Houston Office of the Registrar (<https://www.uth.edu/registrar/applicants/application-forms.htm>)

Completed applications, including letters of reference and transcripts, must be received by June 15 for matriculation in the fall semester.

The following are required:

1. Completed application form with a curriculum vitae and personal statement. The personal statement is a narrative describing the applicant's motivation for applying to the MSCR program, including the applicant's career goals and how the MSCR degree program will support these goals, and a proposed timeline for completion of the program.
2. Letters of reference (2). Two professional letters of reference on official letterhead from at least two individuals who are qualified to evaluate the applicant's academic or professional performance, as well as ability and motivation to complete the program. If an applicant will be employed or in a training program while enrolled in the program, a letter of support/recommendation will be required from the applicant's supervisor to verify the supervisor's commitment to providing the applicant with adequate "protected" time to complete the program.
3. Official transcripts covering all periods of post-secondary enrollment in accredited institutions of higher education. Applicants should request the institution to send official (original) transcripts directly to the Office of the Registrar. Graduates of Texas colleges and universities should request that transcripts be sent in electronic format. Copies of official transcripts sent by the applicant are not considered. Transcripts must include both grades and credit hours.
4. Applicants who are nationals of countries where English is not the parent language are required to submit scores from the Test of English as Foreign Language (TOEFL). See application form for current requirements and exceptions.

Prospective applicants can contact the MSCR Program Manager, Deborah "Deb" Garcia (deborah.garcia@uth.tmc.edu) for further questions about the application process. The application must be completed by June 15 for admission to the class matriculating in August of the same year.

Address application inquiries to:

Office of the Registrar
The University of Texas Health Science Center at Houston
P.O. Box 20036
Houston, Texas 77225-0036
713-500-3388

Once an application has been submitted, the applicant will receive a PIN number from the Office of the Registrar. The status of the application, transcripts, and letters of reference can be checked online at myUTH (<https://my.uth.tmc.edu>) using this PIN number.

Factors Considered in Admissions Decisions

The Admissions Committee of the MSCR Program will review all completed applications. The committee considers the following factors in evaluating applicants for admission:

- Previous research experience, accomplishments and publications, enrollment in research-related courses, and current involvement in research projects
- Expressed commitment to a career involving biomedical research
- Grade point average from previous transcripts

- Career goals
- Previous graduate-level study
- Work experience in a health-related field
- Honors and awards for academic achievement

Preference will be given to candidates who have an established committed departmental mentor. Plans for departmental mentoring must be established prior to enrollment in the program. Candidates from institutions outside of UTHealth Houston will be considered for admission if arrangements can be made for appropriate departmental and methodological mentorship from the applicant's own clinical/academic institution.

Non-degree status

Current Clinical Research Curriculum students may alternatively apply for non-degree status. Non-degree status allows enrollment in MS-level Advanced Courses (tuition costs apply), however students are not assigned mentors and do not complete practica or thesis requirements. Non-degree applications are accepted twice a year (applications due June 15 and October 15) with the same application requirements as the MSCR degree program. Accepted non-degree students may begin advanced coursework in the next semester. Non-degree students may apply for a change to Degree Status in a subsequent June admission cycle, however there is no guarantee of eventual acceptance into the MS Degree Program. Non-degree status will expire after a two-year period of no activity in the program.

Current degree students may request a change in enrollment status to non-degree student. Reinstatement in the degree program will be considered at the discretion of the Admissions Committee.

Tuition and fees

Please refer to the Bursar's Office website (<https://www.uth.edu/bursars/student-resources/tuition-fees/mcgovern-medical-school/>) for the current Tuition and Fee Schedules. For other fee information, see required fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/required-fees-all-schools/>) and student services fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/student-service-fees/>). This site reflects current information regarding tuition and fee exceptions and/or waivers, veterans education benefits, and the policy for Texas Resident Tuition. Tuition and fees are subject to change according to the actions of the Texas Legislature or the UT System Board of Regents and are effective when enacted.

The Texas Legislature does not set the specific amount for any particular student fee. Student fees are authorized by state statute; the specific fee amounts and the determination to increase fees are made by the university administration and The University of Texas System Board of Regents.

Degree Requirements

To be eligible for graduation with an MSCR degree a student must:

- complete a minimum of 36 credit hours of coursework within five years of admission to the program
- have a minimum cumulative 3.0 grade point average
- satisfactorily complete three practica
 - a. Institutional Review Board
 - b. Scientific Presentation
 - c. Scientific Writing

- satisfactorily complete thesis project(s) that collectively demonstrate competence in each of these areas:
 - a. Apply the concepts of evidence-based medicine and health services research to clinical practice at the local, state, regional, and national levels using practice guidelines (informed by a literature review and critical evidence appraisal) as instruments of evidence-based practice.
 - b. Postulate a sound new research question and design a clinical research study to address this question using the most unbiased feasible design.
 - c. Perform statistical analysis and interpret the results in a manner that is consistent with the assumptions of the analytic models and the study design,
- be enrolled during the term of graduation/program completion
- pay the required graduation fee of \$150

Academic Expectations

Transfer of Credit

A student may be given up to 18 hours of credit for formal coursework completed previously in a comparable program. Students who transfer into the program must meet the same overall degree requirements as students who undergo all of their training at UTHealth Houston.

Petition for Course Equivalency

A student wishing to receive credit for courses taken outside the MS in Clinical Research Program at UTHealth Houston may submit a Petition for Equivalency form, available by email from the Program Coordinator. This includes the Clinical Research Curriculum courses and courses taken at other institutions that are similar in content to courses offered for the MS in Clinical Research Program. The student must complete the form and obtain the approval of his/her program advisor. For courses taken outside McGovern Medical School, the student must supply the required documentation about course requirements for approval of credit hours by the Curriculum Committee.

Advisory Committee

Each student in the program will work jointly with two different advisors—a program advisor/mentor who provides methodological expertise and a departmental advisor/mentor from their own basic or clinical science department or institution who provides expertise in the participant's specific area of clinical research. For fellows and other trainees, the training program director will also serve as a member of the Advisory committee. At the end of each semester, the student will meet with their Advisory Committee to review academic progress, course selection, and thesis development.

Satisfactory Academic Progress

Individual faculty members are responsible for identifying students with academic difficulty and determining whether the deficiency can be remediated. Satisfactory academic progress is defined for each student by following the degree plan for that student. Each student's Advisory Committee will review the student's course work to assist him/her in achieving the maximum potential and in assessing progress toward academic goals. Students are expected to complete the program within five years, unless extraordinary circumstances warrant an extension. At least one thesis component must be completed each academic year after admission to the MS Degree Program. Overall consideration of performance will be used by the Advisory Committee to determine which

students have progressed satisfactorily and which students should be placed on academic probation.

Academic Probation and Dismissal

A student will be placed on academic probation by the program director following the completion of the semester in which any of the following occur:

1. a second grade of F or WF is earned,
2. the student fails to meet with their Advisory Committee within a 12-month period, or
3. the student fails to make satisfactory progress toward the degree (see above).

Once on probation, the student will be re-evaluated at least once each semester by his/her Advisory Committee. A student placed on probation for failing grades will be taken off probation when he/she has passed at least two courses and has passed the same or an equivalent course for any required courses that were failed. The student will be given one year to satisfy these requirements or up to two years if the failed required course is offered only every other year. A student placed on probation for failing to make satisfactory progress and/or meet with his/her Advisory Committee will be taken off probation when he/she successfully completes at least four credit hours over the next year. If the academic probation is not removed within the stated remediation time period, the student will be dismissed by the Program Director.

If the student wishes to request a reconsideration of the dismissal, a written request to the Student Evaluations and Promotions Committee must be submitted within seven calendar days of receipt of the dismissal letter. The Student Evaluations and Promotions Committee will review the request and render its recommendation in writing to the Dean. The student will be notified in writing of the Dean's decision within five working days of the committee's recommendation. The determination of the Dean is final.

Academic Conflict Resolution

Individual faculty members retain primary responsibility for grading and evaluations. The faculty member's judgment is final unless compelling evidence suggests discrimination, differential treatment, or mistake. In attempting to resolve any student grievance regarding academic matters, it is the obligation of the student first to make a serious effort to resolve the matter with the faculty member with whom the grievance originated. If the student and faculty member cannot resolve the matter, the student may file a formal written grievance to the MSCR Program Director within seven (7) calendar days of the failed resolution. The Program Director will meet with appropriate parties (students, course director, advisory committee) to seek a resolution that is in the best interest of the individual student, student body, and the MSCR Program as a whole. If the conflict is with the Program Director, then the grievance will be submitted to the Director of the Institute for Clinical Research and Learning Health Care. The Program Director will respond, in writing, within ten (10) working days of receiving the written complaint. The student will be notified in writing of the resolution, as will any other pertinent parties. The student has the right to formally appeal the decision of the Program Director, in writing, to the Director or Co-Director of the Institute for Clinical Research and Learning Health Care. The Institute Director will make a final decision. If the student feels this resolution does not follow university policy or was made with bias, the student has seven (7) calendar days from the date of receiving the decision from Institute Director or Co-Director to formally write to the Dean of the McGovern Medical School. In this case, the Dean will review the written grievance

and previous recommended resolutions and decide on the final resolution of the matter. The student will be notified, in writing, of the resolution, as will any other pertinent parties. The decision of the Dean is final.

Long-term Absences

Students who are unable to maintain active status may request a long-term absence of up to one year. If the absence lasts for more than one year, reinstatement will be considered at the discretion of the Admissions Committee. Any degree student who has not been granted a leave of absence and who fails to complete at least one degree requirement every academic year after enrollment (course, practicum, or thesis component) will be considered to have withdrawn from the program. Once withdrawn, a student who wishes to resume participation in the program must apply to be readmitted. Degree students may request a change in enrollment status to non-degree student. Reinstatement in the degree program will be considered at the discretion of the Admissions Committee. Non-degree status will expire after a two-year period of no activity in the program.

Grading policy

Advanced courses in the MS in Clinical Research Program are graded A, B, C, or F. An 'F' in a required course requires repetition of that course (or a course deemed equivalent by the student's advisors). Practica and thesis credit hours are graded pass (P) or fail (F). An incomplete (I) grade may be assigned at the discretion of the instructor when the course requirements have not been satisfied by the end of the semester. An incomplete grade will remain on the transcript until a final grade is assigned by the instructor. If an incomplete is not changed by the end of the following semester, it will be converted to an 'F'.

Criteria upon which grades are based are provided at the beginning of each course. Students may withdraw from a course through the last class day of the term. When a student withdraws from a course, a Withdrawn Passing (WP) or Withdrawn Failing (WF) grade will be recorded depending on the student's standing at the time of withdrawal. This WP or WF grade will remain on the transcript even if the course is repeated and passed.

Courses for the MS in Clinical Research Program

Code	Title	Hours
CLRS 5010	Advanced Biostatistics for Clin Investig	4
CLRS 5015	Using Rsrch to Infrm Hlth Cre Policy&Prac	4
CLRS 5017	Advanced Clinical Research Design	4
CLRS 5020	Economic Evaluations in Clinical Research	4
CLRS 9994	Institutional Review Board Practicum	1
CLRS 9996	Scientific Writing Practicum	1
CLRS 9997	Scientific Presentation Practicum	1
CLRS 9998	Clinical Research Thesis	3
Electives (totaling 14 SCH) ¹		14
Total Hours		36

¹ See school website (<https://med.uth.edu/crebm/clinical-research-education/ms-in-clinical-research/ms-in-clinical-research-curriculum/>) for elective options.

Course Descriptions - Clinical Research

Course descriptions in school catalogs and the Course Search (<https://catalog.uth.edu/course-search/>) are correct at the time of publication. See myUTH (<https://uthidp.uth.edu/nidp/saml2/sso/?id=Campus-Affiliate-LOA2-DUO&sid=0&option=credential&sid=0>) for more recent course information and to register for courses.

CLRS 5003 Advanced Epidemiology (4 Credits)

In this problem-based course, each student is expected to build a clinical research proposal in his/her field of interest. Each week, students are asked to present the appropriate parts of their protocols to facilitate the discussion of successive stages in study design. This course is run in small group sessions (6-14 students per group) to facilitate active participation and interaction. Prerequisite: Consent of instructor (1.5 credit hours) Letter Graded

CLRS 5010 Advanced Biostatistics for Clin Investig (4 Credits)

This course will focus on the mechanics of applying biostatistical techniques in a research setting. Emphasis will be placed on assumption testing and techniques of model fitting. Students will be expected to critically evaluate, develop, and execute analysis plans using descriptive analysis and regression techniques. Prerequisite: Biostatistics for Clinical Investigators or consent of instructor (4 credit hours) Letter Graded

CLRS 5015 Using Rsrch to Infrm Hlth Cre Policy&Prac (4 Credits)

In this course, the students apply rules of evidence and health services research to clinical practice, practice guidelines, and health care policy. Decision analysis and methods for quantifying benefit, risk, and cost will be used to evaluate health care interventions at the individual patient and population levels. This critical appraisal will be used to launch discussions of mechanisms to bridge the gap between clinical research evidence and health services delivery and health policy. Prerequisite: Literature Appraisal or consent of instructor (4 credit hours) Letter Graded

CLRS 5017 Advanced Clinical Research Design (4 Credits)

This course will build on design concepts for observational and interventional studies that were introduced in the prerequisite courses. Topics will include the use of matching and restriction to minimize bias in observational studies, consideration of analytic strategies (e.g., correlated samples, use of propensity scores) in study design, survey research methods, the relationship between quality improvement and clinical research, adaptive randomization, alternatives for consent for research, factorial designs, cluster randomization, using patient values to select important study outcomes, weighing benefits and harms, approaches to stopping rules, and enhancing the feasibility of clinical trials. Prerequisite: Introduction to Epidemiology Research, Clinical Trial Design, or consent of instructor. (4 credit hours) Letter Graded

CLRS 5020 Economic Evaluations in Clinical Research (4 Credits)

The first part of the course provides an in-depth exploration of various economic evaluation methods used to assess the value of healthcare interventions and programs. Participants will learn how to critically analyze and interpret economic evaluation studies and apply these skills to their own individual clinical research proposals. The second part of the course focuses on research involving administrative data, with a hands-on component using publicly available datasets. Students will have the opportunity to work with these datasets in groups as they prepare for their required research project. A basic understanding of epidemiology, literature appraisal, and study design is required. Prerequisite: Biostatistics for Clinical Investigators or consent of instructor (4 credit hours) Letter Graded

CLRS 5099 Individual Study (1-6 Credits)

Individual Study Letter Graded

CLRS 9994 Institutional Review Board Practicum (1 Credit)

Institutional Review Board Practicum Letter Graded

CLRS 9996 Scientific Writing Practicum (1 Credit)

Scientific Writing Practicum Letter Graded

CLRS 9997 Scientific Presentation Practicum (1 Credit)

Scientific Presentation Practicum Letter Graded

CLRS 9998 Clinical Research Thesis (1-6 Credits)

Clinical Research Thesis Letter Graded

MD Degree

Equal Access to McGovern Medical School's Educational Program

McGovern Medical School is committed to providing all students with opportunities to take full advantage of its educational and academic programs. MMS and UTHealth Houston recognize that students with documented disabilities may require reasonable accommodations in order to achieve this objective and/or meet the technical standards and essential functions. Any accommodation must allow the student to complete the medical degree program within six years of matriculation. An accommodation request may not be considered reasonable if it poses a direct threat to the health or safety of self and/or others, if making it requires a substantial modification in an essential element of the curriculum, if it lowers academic standards, or if it poses an undue administrative or financial burden.

If a student, with or without reasonable accommodation, cannot satisfy the technical standards/essential functions or if it is determined that the disability would interfere with patient or peer safety or otherwise impede their ability to complete the program and advance to graduation, residency training or licensure, then the student may be separated, discontinued or dismissed from the program.

Process: Candidates with questions regarding disability accommodations are encouraged to contact the McGovern Medical School Section 504 Coordinator (<https://med.uth.edu/admissions/student-disability-ada-504-accommodations/>) immediately to begin to address what types of accommodation may be considered. Admission to MMS is conditional on the candidate's having the ability to satisfy the technical standards, with or without reasonable accommodation, and results from a process that examines and values all of the skills, attitudes and attributes of each candidate on a case-by-case basis.

MD Student Development Evaluation and Promotion

The official policies for evaluation of academic performance, promotion, grade grievance, and academic dismissal are outlined in the McGovern Medical School Policy on Student Advancement and Appeals on the McGovern Medical School website here (<https://med.uth.edu/oep/policies/>).

McGovern Medical School uses the following grade system: Honors, High Pass, Pass, Below Pass, or Fail. Grades and other information relative to a student's academic performance are transmitted to the Student Evaluation and Promotions Committee which, based upon an overall consideration of the student's grades, demonstrated knowledge, clinical performance, and suitability to practice medicine, decides whether a student should be promoted, continued with remedial work assigned, or dismissed. Any student whose active record indicates that he/she is not suitable to continue the study of medicine will be dismissed.

Students can be referred for evaluation and counseling for academic or personal concerns through the MMS Office of Admissions and Student Affairs. The Peer Tutoring Program is also available to all students at no charge.

Conduct and Discipline

Students are responsible for knowledge of and compliance with UTHealth Houston policies concerning student conduct and discipline as set forth in HOOP Policy 186, Student Conduct and Discipline (<https://www.uth.edu/hoop/policy.htm?id=1448220>), and the McGovern Medical School's Policy and Guidelines for the Evaluation and Promotions of Medical Students. Students may access the full HOOP online here (<https://www.uth.edu/hoop/>).

For information regarding student academic and behavioral issues, contact:

Sheela L. Lahoti, MD

Interim Vice Dean for Admissions and Student Affairs

McGovern Medical School 6431 Fannin, Suite G400

Houston, Texas 77030

Research Programs for Medical Students

Medical student research is an essential component of the overall mission of McGovern Medical School. The School's Medical Student Research Office (MSRO) offers students the necessary resources to successfully identify and pursue research opportunities. As part of its mission to promote student research, the MSRO administers a "Summer Research Program" that provides an intensive, hands-on, 10-week, 40 hours/week, research experience for medical students during the summer after their first year. The program fosters the development of critical thinking, scientific reasoning, and other research skills.

For the Summer Research Program students work closely with faculty mentors of their choice on research projects organized individually for each student. At the end of the research project, students write an abstract on which they are the first author. These abstracts are published and posted on the program's website. In addition, the students develop a research poster that is presented at the annual Medical School Research Forum and Webber Prize Competition held in the fall. Students who complete the Program receive a certificate of completion and an acknowledgment letter in their permanent academic file, also known as their Blue Book. Students may continue their research until graduation with their mentor. Visit the Summer Research Program website (<https://>

med.uth.edu/oep/msro/msro-programs/srp/) for more information and application deadlines.

Students can also participate in the Scholarly Concentration Programs. All concentrations are thematic, interdisciplinary, longitudinal, and experiential, with guided faculty mentoring and structured group seminars/courses/journal clubs, etc. Students in concentrations are expected to conduct an independent scholarly project. Fourth-year medical students also have the option to pursue a research-intensive fourth-year curriculum, the Academic Career Focus Track (ACFT). Students in the ACFT and other graduating students who have done substantial research may participate in the Spring Senior Research Symposium and The John P. and Kathrine G. McGovern Medical Student Research Award Competition for graduating fourth-year students. The spring research event typically takes place in early March (before Match Day). Entry to the competition is voluntary. Students completing the Scholarly Concentration Program receive a certificate of completion and recognition at graduation. Visit the Scholarly Concentration Programs website (<https://med.uth.edu/oep/msro/msro-programs/scp/>) for more details.

A new extracurricular elective, Introduction to Research, opened in fall 2024 to assist students in developing fundamental research skills of literature review, close reading, developing research questions, experimental design, and writing. Designed for students with little or no research experience, the course helps prepare students for summer research programs. See the Medical Student Research Office website for updates on this course offering.

Applicants and MD program students interested in more extensive research training may apply to one of McGovern Medical School's dual degree programs. More information about the dual degree programs can be found under Programs of Study (<https://catalog.uth.edu/medical/programs/>) page of this catalog. Students can also refer to the McGovern Medical School dual degree program page found here (<https://med.uth.edu/about-us/dual-degree-programs/>). Limited financial support is available for medical students pursuing research.

Contact the Medical Student Research Office (MSRO@uth.tmc.edu) for interest in research and scholarship.

MD Expenses

Tuition and fees are subject to change and become effective on the date enacted. The Texas Legislature does not set the specific amount for any particular student fee. Student fees are authorized by state statute; the specific fee amounts and the determination to increase fees are made by the university administration and The University of Texas System Board of Regents.

Please refer to the UTHealth Houston Student Financial Services website for the Cost of Attendance (<https://www.uth.edu/sfs/cost-of-attendance.htm>) (COA). The COA is an estimated cost of a student's educational and living expenses for the period of enrollment. It includes tuition, fees, books/supplies, room and board, and other expenses.

For current tuition and fee schedules for the MD program, see the Bursar's Office (<https://www.uth.edu/bursars/student-resources/tuition-fees/mcgovern-medical-school/>) website. For other fee information, see required fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/required-fees-all-schools/>), course and lab fees ([https://www.uth.edu/bursars/student-resources/tuition-fees/mcgovern-medical-](https://www.uth.edu/bursars/student-resources/tuition-fees/mcgovern-medical-school/)

[school/](https://www.uth.edu/bursars/student-resources/tuition-fees/student-service-fees/)) and student services fees (<https://www.uth.edu/bursars/student-resources/tuition-fees/student-service-fees/>).

Tuition and Fees (2025-2026)

Resident Tuition: \$21,083.00

Non-Resident Tuition: \$28,738.00

School Specific Fees

Laboratory: \$35.00 (MS1/MS2 Years)

Foundations of Medical Science Course Fee (BSCI 1100; MS1 Year): \$675.00

Malpractice Insurance: \$25.00

Computer Resource: \$200.00

Technology Fee: \$1,551.00

Library Resource: \$165.00

Simulation and Skills Fee: \$1,375.00

UWorld Fee: \$499.00 (MS2 Year); \$569.00 (MS3 Year)

National Achievement Exams Fee: \$130.00 (MS1 Year); \$473.00 (MS2 Year); \$550.00 (MS3 Year); \$184.00 (MS4 Year)

Student Orientation Fee: \$162.00 (MS1 Year); \$65.00 (MS2 Year); \$80.00 (MS3 Year); \$75.00 (MS4 Year)

Health Insurance¹: \$3,438²

Graduation³: \$150.00

Information Technology Access Fee: \$126.00

Medical Counseling Service Fee: \$123.75 (MS1 and MS2 Years); \$165.00 (MS3 and MS4 Years)

¹ Health insurance is required of all UTHealth Houston students. If students have a health insurance policy, they may provide proof of comparable insurance to Auxiliary Enterprises no later than the 12th class to have this charge waived. Details on the insurance plan are available through the Auxiliary Enterprise Office.

² The 4th year Class is charged \$4012 to cover 14 months of Health Insurance. The months of May and June are added to allow the time between the end of the 4th year and the beginning of their residency.

³ A graduation fee of \$150 payable at registration for the final academic term is required of all students. This fee does not include regalia rental.

Through reciprocal agreements, students at other institutions of The University of Texas System, as well as graduate students from Rice University, Baylor College of Medicine, Texas Woman's University, and the University of Houston, may take some graduate courses for credit at McGovern Medical School, subject to the approval of the instructor. In addition, McGovern Medical School medical students may take some courses for credit at any of the above institutions. Mechanism for payment of tuition or registration fees vary according to the individual institution. Consult with that Registrar's Office for specific details.

Scholarships

Scholarships are awarded based on need, merit, or a combination of both. Scholarships do not need to be repaid, but may have specific criteria for the recipient to remain eligible (i.e., grade point average, hometown, undergraduate university, high school, etc.). Competitive scholarships are reviewed in the same manner as all other scholarships. Students may apply online through the Office of Admissions and Students Affairs once each academic year.

Scholarship award decisions are made by the Scholarship Committee.

Books and Supplies

The cost of required textbooks and supplies averages about \$3,012.79 (excluding cost of computer) for the pre-clerkship curriculum and \$2,010.43 for the clerkships and required advanced clinical experiences. Information regarding specific textbook requirements and costs may be found here (<https://med.uth.edu/admissions/admissions/entering-class-checklist/>).

Laptop Requirement

Information technology and informatics are integral parts of medical education and practice. In order to fully utilize information resources required by the faculty during your education, the school requires that all incoming medical students have laptop computers that meet specific minimal requirements.

The requirements for the current entering class are provided on the Office of Admissions and Student Affairs web site.

Disability Insurance

McGovern Medical School encourages students to consider whether or not they wish to purchase disability insurance. The Office of Admissions and Student Affairs has information regarding available plans.

Liability Insurance

Students are covered under The University of Texas System Professional Medical Liability Self-Insurance Plan with standard limits for medical students set at \$25,000 per claim and \$75,000 as the annual aggregate. Basic coverage is included for \$25 a year as one of the required fees.

For students completing extramural electives in their fourth year may be required to purchase increased coverage if mandated by the hosting institution. Students can purchase increased limits to meet needs of up to \$2,000,000 per claim and \$5,000,000 aggregate.

Ethics

McGovern Medical School recognizes that in addition to intellectual capability and expert technical skills and knowledge, a good physician must have a solid and unassailable foundation and commitment to ethical behavior and principles. Patients and society at large expect and deserve no less. These principles are embedded in the life of the School and its faculty.

Because these principles are so important, students are asked to make an explicit commitment to them.

Ethical Pledge (Code of Professional Conduct)

Incoming students are asked to agree to and sign the following ethical pledge following their acceptance to McGovern Medical School.

- I acknowledge and accept the privileges and responsibilities given to me as a physician-in-training and dedicate myself to provide care to those in need.
- I will approach all aspects of my education with honesty and integrity, embracing opportunities to learn from patients, teachers, and colleagues.
- I will always maintain the highest standards of professional conduct.

- I will certify only that which I have personally verified, and I will neither receive nor give unauthorized assistance on examinations.
- I will value the knowledge of wisdom of the physicians who have preceded me.
- I will recognize my weaknesses and strengths and strive to develop those qualities that will earn the respect of my patients, my colleagues, my family, and myself.
- I will respect the humanity, rights, and decisions of all patients and will attend to them with compassion and without bias.
- I will maintain patient confidentiality and be tactful in my words and actions.
- I will value the diversity of patients' experiences, cultures, and beliefs because it enhances my ability to care for them and enriches my education.
- I will not forget that there is an art to medicine as well as a science and that warmth, sympathy, and understanding are integral to patient care.
- I will strive to earn the trust my patients place in me and the respect that society places upon my profession.
- I recognize the privileges afforded to me as a physician-in-training and promise not to abuse them.
- Even as a student, I have a responsibility to improve the standard of health in my community, to increase access to care for the underserved, and to advance medical knowledge.
- As I accept these new responsibilities, I will not forget the importance of my own health and well-being. I will continue to value my relations with those who have supported me in the past and those who will share in my future.
- Knowing my own limitations and those of medicine, I commit myself to a lifelong journey of learning how to cure, relieve pain, and comfort with humility and compassion.
- I make these promises solemnly, freely, and upon my honor.

White Coat Ceremony

Dr. Arnold P. Gold, a faculty member at Columbia University College of Physicians and Surgeons, initially conceived the White Coat Ceremony. The White Coat Ceremony marks students' initial entry into the medical profession. A White Coat Ceremony is typically held between the fall and spring semesters of the first year. Students are presented white coats, which symbolize their journey to becoming physicians. At the end of the ceremony, the students recite The Physician's Oath of Hippocrates and reaffirm the Ethical Pledge.

MD Academic Organization

USMLE Step 1

Students are required to sit for USMLE Step 1 prior to the start of the fourth-year coursework (Career Focus Track phase). A student who does not pass is required to retake the examination within 90 days of notification of failure. An extension to the 90-day deadline to retake the exam may be granted on application to the Office of Admissions and Student Affairs.

USMLE Step 2

Students are required to take USMLE Step 2 CK prior to graduation.

The Curriculum Committee is charged by the Dean to provide oversight of the medical education program, including the design, management,

integration, evaluation, and enhancement of a coherent and coordinated medical curriculum.

Competencies and Medical Education Program Objectives

McGovern Medical School expects all of its students to demonstrate the following competencies prior to graduating with the M.D. degree.

1. **Patient Care and Clinical Skills** – Graduates must be able to provide patient-centered care that is compassionate, appropriate, and effective for the promotion of health and the evaluation and management of disease.
2. **Medical Knowledge** – Graduates must be able to demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.
3. **Interpretation of Medical Data/Practice-Based Learning and Improvement** – Graduates must be able to demonstrate the ability to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care based on constant self-evaluation and life-long learning.
4. **Interpersonal and Communication Skills** – Graduates must be able to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals
5. **Professionalism** – Graduates must be able to demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
6. **Health Systems and Society** – Graduates must be able to demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

The medical education program objectives are specified for each competency area and can be found here (<https://med.uth.edu/oep/medical-education-2/core-competencies-and-educational-program-objectives-epos/>).

Learning Resource Center

The Learning Resource Center (<https://med.uth.edu/lrc/>) (LRC) manages study spaces, liaises with faculty and students, and provides information on innovative teaching and learning resources in support of the school's curricular offerings. In 2024, a floor-to-ceiling renovation was completed, providing students with reconfigured and updated spaces to study individually and collaboratively. With 24/7 access, the LRC provides 250+ seating spaces, including over 110 study carrels/stations, 14 group study rooms, and two fully equipped "clinic" rooms to practice physical exam skills. On-site IT staff provides support to students on the repair, maintenance, and configuration of their school-approved computer devices. In addition to a large facility in the medical school building, students have access to satellite facilities elsewhere in the medical school building and at the Lyndon B. Johnson Hospital. Students also have 24/7 access to student lounges at these sites. In collaboration with librarians from the Texas Medical Center Library, the LRC staff assists students with online search strategies and information literacy skills. The library also provides a comprehensive collection of print and digital resources, correlated to the medical school's curricular offering.

MD Admissions

Admission to McGovern Medical School is determined by the Admissions Committee, which is composed of faculty members from both basic science and clinical departments.

For all medical schools of The University of Texas System, the Texas Legislature requires that 90% of the admitted class each year be Texas residents; therefore, no more than 10% of the entering class can be non-residents.

UTHealth Houston endeavors to foster an educational and working environment that provides equal opportunity to all members of the university community. To the extent provided by applicable law, no person shall be excluded from participation in, denied the benefits of, or be subject to discrimination under, any program, or activity sponsored or conducted by UTHealth Houston on the basis of race, color, national origin, religion, sex, sexual orientation, age, veteran status, disability, genetic information, gender identity or expression or any other basis prohibited by law.

Any student or potential student who has a complaint regarding equal opportunity under this policy should contact the respective school's associate dean for student affairs, or the Equal Opportunity Advisor in the University Relations and Equal Opportunity (<https://www.uth.edu/hr/departments/equal-opportunity/>) office.

The full policy can be found online in the UTHealth Houston Handbook of Operating Procedures (HOOP) Policy 183, Nondiscrimination, Anti-Harassment and Equal Opportunity (<https://www.uth.edu/hoop/policy.htm?id=1448214>).

Academic Prerequisites

Applicants must complete at least 90 undergraduate semester hours, including the prerequisite coursework listed below, at a regionally accredited United States or Canadian college or university. Preference is given to students who obtain a baccalaureate degree prior to admission to medical school. Graduate courses do not satisfy premedical requirements.

Prerequisite Coursework

English: a minimum of 6 semester hours of college English. Any college English course earned at an accredited institution of higher education that fulfills a general education English requirement of a baccalaureate degree will be accepted. Remedial or developmental courses or "English as a Second Language" courses are not accepted.

Biological Sciences: 14 semester hours (12 lecture hours plus 2 lab hours). One year may be completed by advanced placement. The other year must be completed in residence at a college and must include formal laboratory work. Biological science courses must be as required for science majors.

Inorganic Chemistry: 8 semester hours (6 lecture hours plus 2 lab hours). The courses should be for science majors, including the corresponding laboratory experience. Should include familiarity with analytic and volumetric techniques. Inorganic courses include general chemistry, physical chemistry and quantitative analysis.

Organic Chemistry: 8 semester hours (6 lecture hours plus 2 lab hours). The courses should be for science majors, including the corresponding laboratory experience.

Physics: 8 semester hours (6 lecture hours plus 2 lab hours). Physics courses must be as required for science majors and must include laboratory experience.

Prerequisite Coursework

Please refer to the Office of Admissions and Student Affairs for full details (<https://med.uth.edu/admissions/why-mcgovern/requirements/>).

Medical College Admission Test

The Medical College Admissions Test (MCAT) is required for admission. The exam should be taken within 5 years of applying to medical school and no later than the last September test date in the year of application submission (i.e. no later than September 30 of the year before you expect to begin medical school).

Evaluation of Applicants

McGovern Medical School, in conformity with the purpose assigned it by the Texas Legislature and its mission statement, selects the best qualified students for its entering class who demonstrate a potential to become competent and caring physicians and who will serve the identified needs of the State of Texas. The Admissions Committee considers the totality of each application and gives importance to the factors enumerated below.

1. Intellectual Capacity

Each student who is accepted must have the intellectual ability to successfully complete medical school and master the essentials of the practice of medicine. Considered are undergraduate and graduate record, standardized test scores, academic awards and honors (e.g. Phi Beta Kappa, National Merit, etc.), research accomplishments, degree of difficulty of undergraduate academic program, pre-professional evaluations, personal interview, and any other data submitted.

2. Interpersonal and Communication Skills

The practice of medicine demands a high level of interpersonal skills and a compassionate attitude. Ability to communicate is essential for these qualities. Considered are community or charitable service, e.g., volunteering to help the less fortunate; extracurricular activities and organizations; leadership positions; employment history; recognition for humanitarian service; awareness and direct knowledge of cultural elements as they may impact on health care; evidence of being well-written and well-spoken exemplified by standardized test scores in verbal abilities, the MCAT score on the written essay, statements made on the application or in the personal interview and any other relevant considerations which the students or his or her pre-professional advisors may present.

3. Breadth and Depth of Pre-medical Educational Experience

The modern practice of medicine requires a strong scientific background and also an ability to understand the complex non-scientific problems facing physicians and patients, e.g., ethical or socioeconomic problems. The bare completion of the pre-medical requirements is a base on which to build further knowledge and prepare physicians for a lifetime of study so that they will remain the best possible practitioners of medicine. Considered are undergraduate core curriculum or course selection; participation in the intellectual life of the university, e.g., belonging to discipline organizations — chemistry or philosophy club; extent of reading; papers written or published; knowledge displayed at the

interview; Honors Program; pre-professional evaluations; any other relevant indications of scholarly accomplishment.

4. Potential for Service to the State of Texas

A state medical school must have as a primary concern producing practitioners who will serve that state in residency; applicant's goals for the future; size and location of hometown and whether applicant resides in a Health Professions Shortage Area; potential for future provision of health services to under-served areas or needed specialties; linguistic skills appropriate to the Health Profession Shortage Area the applicant wishes to serve.

5. Motivation

A physician must be prepared for a lifetime of dedicated intense service to her or his patients. This requires a high level of selfless motivation. Considered are success in overcoming adverse economic or educational conditions; employment history occurring simultaneously with undergraduate academic preparation; participation in activities requiring time management skills, e.g., varsity athletes, campus symphony, etc.; constantly improving undergraduate record; veteran status; experience in health-related activities.

6. Integrity

A physician, because of the public trust given to members of the medical profession, must have qualities of integrity beyond reproach. Considered are pre-professional evaluations; any academic integrity violation; conduct of a crime; any other relevant background relating either positively or negatively to applicant's standard of integrity (e.g. Honorable Discharge or Discharge under Honorable Conditions).

7. Technical Standards and Essential Functions

Essential abilities and characteristics required for completion of the MD degree consist of certain minimum physical and cognitive abilities and sufficient mental and emotional stability to assure that accepted students must meet certain standards of capability (with or without reasonable accommodations) for matriculation, continued enrollment, and graduation with the MD degree. McGovern Medical School (MMS) intends for its graduates to become competent and compassionate physicians who are capable of entering residency training (graduate medical education) and meeting all requirements for medical licensure and who will serve the identified needs of the State of Texas. The following abilities and characteristics are defined as technical standards, which, in conjunction with academic standards established by the faculty, are requirements for admission, promotion, and graduation. Delineation of technical standards is required for the accreditation of U.S. medical schools by the Liaison Committee on Medical Education. Although these standards serve to delineate the necessary physical and mental abilities of all candidates, they are not intended to deter any candidate for whom reasonable accommodation will allow the fulfillment of the complete curriculum.

- **Observation:** Candidates must have the skills to be able to accurately obtain information from demonstrations and patient examinations in order to gather patient data (e.g., observe a patient's gait, appearance, posture, etc.). The skills necessitate the use of a sense of vision, hearing, and somatic sensation or a functional equivalent.
- **Communication:** Candidates must be able to communicate effectively with faculty, colleagues, staff, patients, their families, and members of the health care team. They must be able to obtain a medical history in a timely fashion, interpret non-verbal information, and establish

therapeutic rapport with patients. Candidates must be able to read and record information accurately and clearly in a healthcare setting.

- **Motor Function:** Candidates must possess the capacity to perform physical examinations and diagnostic maneuvers. They must be able to respond to clinical situations in a timely and efficient manner while providing general and emergency care that are reasonably required of physicians. These activities require some physical mobility, coordination of both gross and fine motor neuromuscular functions, and balance and equilibrium. They must be able to adhere to universal precaution measures and meet safety standards applicable to inpatient and outpatient settings and other clinical activities.
- **Intellectual-Conceptual, Integrative and Quantitative Abilities:** Candidates must be able to assimilate detailed and complex information presented in both didactic and clinical coursework, and engage in problem solving. They must be able to learn through a variety of modalities including, but not limited to, classroom instruction, small group and collaborative activities, problem-based learning groups, individual study, preparation and presentation of reports, simulations, and use of computer technology. Candidates are expected to measure, calculate, reason, analyze, synthesize, and transmit information across modalities. In addition, candidates must be able to comprehend three-dimensional relationships and to understand the spatial relationships of structures.
- **Behavioral and Social Attributes:** Candidates must demonstrate the maturity and emotional stability required for full use of their intellectual abilities. This includes, but is not limited to, accepting the responsibility of learning, exercising good judgment, and promptly completing all responsibilities associated with the diagnosis and care of patients. **Candidates are expected to exhibit integrity, honesty, professionalism, compassion, and display a spirit of cooperation and teamwork.** They must understand and abide by the legal and ethical aspects of the practice of medicine and function within both the law and ethical standards of the medical profession. Candidates must be able to work effectively, respectfully and professionally as a part of the healthcare team, and to interact with patients, their families, health care professionals, colleagues, faculty, and staff in a courteous, professional, and respectful manner. Candidates are expected to contribute to collaborative, constructive learning environments; accept constructive feedback from others; and take personal responsibility for making appropriate positive changes. They must be able to tolerate physically taxing workloads and long work hours, to function effectively under stress, and to display flexibility and adaptability to changing environments. They must be capable of regular, reliable and punctual attendance at classes and in regard to their clinical responsibilities.
- **Ethical Standards:** Candidates must meet the legal standards to be licensed to practice medicine. As such, candidates for admission must acknowledge and provide written explanation of any felony offense or disciplinary action taken against them prior to matriculation to McGovern Medical School. In addition, should the student be convicted of any felony offense while in medical school, they agree to immediately, but within 5 business days, notify the Vice Dean of Admissions and Student Affairs or designee as to the nature of the conviction. Failure to disclose prior or new offenses can lead to disciplinary action by MMS that may include dismissal.

Application Procedure

All applicants to McGovern Medical School must complete the following:

A primary application

- Applicants to the MD program must apply through the Texas Medical and Dental Schools Application Service (TMDSAS).
 - Applications for entry are typically accepted between May 1 and October 1 of the year preceding matriculation.
 - Applicants should contact TMDSAS for the most current information.
 - Application information is available on TMDSAS's website (<https://www.tmdsas.com>)

Mailing address:

Texas Medical and Dental Schools Application Service
P.O. Box 2175
Austin, Texas 78768
512-499-4785

- Those applying to the MD/PhD dual degree program must complete the American Medical College Application Service (AMCAS) Application (<https://students-residents.aamc.org/preparing-medical-school/preparing-medical-school/>). The application can be accessed here (<https://students-residents.aamc.org/preparing-medical-school/preparing-medical-school/>).

A secondary application

- A McGovern Medical School Secondary Application is required of all applicants.
- Candidates will receive an email invitation from our school containing the link and instructions to complete our secondary application after we have received their complete application from TMDSAS. Please allow for processing time by TMDSAS (<https://www.tmdsas.com>).

A CASPer Test score

- All applicants applying to McGovern Medical School are required to complete an online assessment, Computer-Based Assessment for Sampling Personal Characteristics (CASPer), to assist in our selection process.
 - Applicants must go to takealtus.com to sign up for the Medicine test (CSP-10111 – U.S. Medicine), under your specific country (USA), and reserve a test using your TMDSAS ID and a piece of government-issued photo ID.

Once applications are processed by TMDSAS, they are forwarded to McGovern Medical School, where they are reviewed and evaluated by the Admissions Committee. The same criteria for evaluation are applied to all candidates.

After receiving an offer of acceptance, applicants are required to indicate their acceptance decision online within two weeks of notification. An applicant who later decides to accept a position at another institution should give prompt notice of withdrawal to McGovern Medical School.

McGovern Medical School recognizes the procedures and deadlines recommended by the Association of American Medical Colleges and the American Medical Colleges Application Services.

Entering medical students are required to consent to and pay for a criminal background check by an entity designated by McGovern Medical School. Admission is expressly contingent upon successful completion, review, and approval of the content of the criminal background check. The

criminal background process will be repeated before the student enters the clinical rotations.

Curriculum

The basic four-year program outlined below is required for the MD degree. The curriculum is organized into three phases: pre-clerkship, clerkship, and the career focus tracks. Variations and adjustments may be made as the Curriculum Committee deems necessary.

Pre-clerkship Phase

Year 1/Fall Semester/20 instructional weeks

BSCI 1100 Foundations of Medical Science P/F

The purpose of this module is to provide students with the fundamentals necessary to study human disease at an advanced level. Students will learn the basic structure and function of major organs at the same time as they practice the related physical exam and clinical skills in Doctoring. In addition, students will learn the basic biochemical, cellular, and physiological mechanisms that underlie the major classes of disease. Course fee: \$675-anatomy Pass/Fail Course fee: \$675

BSCI 1101 Doctoring 1: History and Physical Exam P/F

This course introduces the student to the basic clinical skills of interviewing a patient and conducting a comprehensive medical history. Students learn to perform a normal physical examination on a healthy adult and document patient encounters (comprehensive history and physical examination) in an organized, accurate manner. The student integrates their own experiences during the course with longitudinal theme content to illustrate ways in which a physician communicates respect, compassion, and empathy. The student applies knowledge obtained from the longitudinal themes including the treatment of special patient populations (geriatric, pediatric etc.) and they will have specific training in the interview of the psychiatric patient. Pass/Fail

Year 1/Spring Semester/18 instructional weeks

BSCI 1200 Hematology and Introduction to Pathology

The Hematology and Introduction to Pathology (HIP) module begins with an introduction to basic principles underlying disease: cell injury, adaptation, cell death and the effects that these processes have on tissues and organs. This is followed by an introduction to neoplasia. The second portion of the HIP module focuses on hematologic disorders, including anemias, coagulation disorders, and thrombotic disorders and how these conditions are treated. Reactive white blood cell disorders and hematologic malignancies will also be presented. Fail Thru Honors(MED)

BSCI 1201 Cardiovascular System

The Cardiovascular Module focuses on expanding the concepts presented in Foundations and developing a knowledge base in pathology, pharmacology and clinical skills associated with the heart and vascular system. The emphasis is on management of cardiovascular disease including hypertension, myocardial infarction, congestive heart failure, arrhythmias, and both congenital and acquired cardiovascular defects. The concepts presented in this module are linked those presented during the subsequent pulmonary and renal modules to emphasize the tight integration of these organ systems. Fail Thru Honors(MED)

BSCI 1202 Pulmonary System

This course begins with a review of pulmonary physiology from Foundations, followed by lung development and introduces radiologic imaging of lung structure. Students will study more in-depth lung physiology, and infectious and obstructive diseases of the lung in both adults and children. Students will be introduced to pathology, physiology, radiology and management of various acute critical conditions such as sepsis, acute respiratory distress syndrome and pulmonary embolism. Fail Thru Honors(MED)

BSCI 1203 Renal System

The Renal System Module covers the physiology defining normal renal function, clinical characteristics and pathology / pathophysiology of diseases of the kidney, and clinical disorders that result from failure of the kidney to function correctly. Students will learn to evaluate changes in fluid and electrolyte balance, mineral metabolism and glomerular function and renal clearance. The clinical implications of renal dysregulation/dysfunction will be explored. Fail Thru Honors(MED)

BSCI 1204 Doctoring 2: Longitudinal Clinical Experience

During Doctoring 2 students begin to use the skills acquired in Doctoring 1. Students will interview, perform comprehensive and focused histories, and perform comprehensive physical exams to evaluate patients with diseases and symptoms. Students will document patient encounters in an organized manner. Student will be able to integrate clinical and basic science knowledge in order to: analyze basic laboratory results; develop a differential diagnosis; determine a basic science pathology and pathophysiology. The student will be able to integrate their own experiences during the course with longitudinal theme content to describe in depth at least two key lessons learned by attending an interprofessional patient safety meeting. Fail Thru Honors(MED)

Year 2/Fall Semester/20 instructional weeks

BSCI 2102 Doctoring 3: Longitudinal Clinical Experience

Doctoring 3 builds on skills gained from Doctoring 1 & 2 (interview, comprehensive/focused history, comprehensive/focused physical exam) to evaluate patients with diseases and symptoms, and document patient encounters in an organized, accurate manner. The student will be able to integrate clinical and basic science knowledge in order to: analyze basic laboratory results; develop a differential diagnosis; determine a basic science pathology and pathophysiology. The student will be able to integrate their own experiences during the course with longitudinal theme content to describe in depth at least two key lessons learned by attending an interprofessional patient safety meeting. Students are required to complete Basic Life Skills during Doctoring 3. This course spans the fall and spring semesters. Fail Thru Honors(MED)

BSCI 2100 Gastrointestinal System

The Gastrointestinal Module builds on the concepts learned in Foundations and other systems modules further enhancing their knowledge base in anatomy, biochemistry, microbiology, pharmacology, pathology, and clinical expertise pertaining to the field of gastroenterology, hepatology, and nutrition. This module uses a variety of pedagogies, including didactic lectures, problem-based learning (PBL) cases and independent study. Fail Thru Honors(MED)

BSCI 2101 Nervous System & Behavior

The Nervous System and Behavior Module (NSB) is a team-taught course that provides an interdisciplinary approach to understanding the nervous system and behavior. The module consists of multi-modal learning approaches: lectures, clinical presentations with patients, laboratory sessions, clinical correlations, small group learning exercises, self-study exercises and problem based learning (PBL) cases. The ultimate objectives and goals of the NSB Module are to provide an understanding of the structure, function and dysfunction of the nervous system. Mental illness, behavioral dysfunction, and substance use issues are presented from a biopsychosocial perspective with both pharmacological and psychological interventions for treatment. Fail Thru Honors(MED)

BSCI 2103 Endocrine System

This module focuses on hypothalamic-pituitary axis, and normal growth patterns and growth disorders. Students will learn about diagnostic strategies and therapeutic options for various diseases including pituitary, metabolic, adrenal and thyroid disorders. Students will also be introduced to the diagnosis and pharmacologic management of osteoporosis. Fail Thru Honors(MED)

Year 2/Spring Semester/10 instructional weeks**BSCI 2201 Reproductive Systems**

This module focuses on hormonal regulation of reproductive function, evaluation and management of infertility, and pregnancy, including preconception planning and the physiology of birth. Students will be introduced to the management of diabetes, hypertension, and infectious diseases during pregnancy. They will also learn about uterine, ovarian and breast pathology, as well as the genetics of breast and gynecologic malignancies. Students will also be introduced to breast imaging and the medical treatment of breast cancer, as well as management of sexually transmitted infections and male genitourinary pathology. Students will discuss sexual identity, sexual function, and the reproductive health of older adults. Fail Thru Honors(MED)

BSCI 2202 Musculoskeletal System & Derm

Students will learn about the morphology, pathophysiology, clinical presentations and management of common skin disorders. They will spend time in the dermatology clinic where they will have the opportunity to perform skin examinations, and learn about evaluating and diagnosing skin conditions. Students will also learn about various bone disorders and soft tissue malignancies, including pathophysiology, diagnosis, differential diagnosis, management and treatment. The approach to various forms of musculoskeletal pain, relevant physiology, and treatments will be explored. Fail Thru Honors(MED)

BSCI 2304 Transition to Clerkship (P/F)

This course prepares students for the clerkships. It is composed of required sessions including large group and skills sessions. Pass/Fail

Clerkship Phase

The Clerkship Phase occurs in Year 3 of the curriculum and consists of 48 instructional weeks. The required clerkships include family medicine, internal medicine, neurology, obstetrics and gynecology, pediatrics, psychiatry, and surgery, as well as a three-week elective and a one week geriatrics rotation. The goal of the clerkship phase is to provide broad exposure to the major disciplines of medicine. Specific descriptions are below. Geriatrics and the elective are pass/fail.

FAMD 3001 Family Medicine

The goal of this clerkship is to introduce the principles and practice of Family Medicine, and to provide the essential clinical skills and training, which students will find useful in whichever specialty they choose to pursue. This clerkship focuses on the approach to the ambulatory patient and learning activities are planned to introduce the skills, knowledge, and attitudes that all physicians need when faced with such a patient. The curriculum for this course focuses more on the process of evaluating and treating a new patient or problem, and is not limited by a specific content. A core content will be addressed that is central to the acute, chronic, and preventive care that family physicians deliver. Additional knowledge and skills are gained in the specific areas relevant to the patient encounters. Students develop a framework within which they can initiate evaluation and care for any patient, regardless of clinical setting or problem, and do so in a fashion that fosters an ongoing relationship with the patient. Fail Thru Honors(MED)

GERI 3030 Geriatrics (Pass/Fail)

The geriatric and palliative third year rotation is designed to enable medical students to practice effectively in a clinical setting. Students will actively participate in the ongoing, daily care of older and/or palliative patients. Students will be paired with a geriatric or palliative preceptor who will provide clinical teaching and feedback. Throughout the clerkship, students will work with a variety of geriatric and/or palliative focused health professionals as part of the interprofessional team approach. Pass/Fail

INTM 3001 Medicine

The Internal Medicine Clerkship is an eight week rotation split into two four week blocks with the primary goal of introducing students to the evaluation and treatment of adults hospitalized with acute medical illness. Emphasis is placed on developing the skills to diagnose common clinical conditions and to recognize the clinical presentations of common diseases. Students will take patient histories, perform comprehensive physical exams, formulate problem lists with appropriate differential diagnoses, and document their findings in the electronic health record. Students will participate in the evaluation of a variety of patients as part of a team of residents and students under the supervision of an internal medicine faculty member. Fail Thru Honors(MED)

NEUR 3000 Required Neurology

The Neurology clerkship is a four week rotation designed to educate students to take a relevant neurologic history, perform a comprehensive neurologic exam and based on their findings, effectively localize the lesion or determine the relevant neuroanatomical correlation. Students will have an opportunity to perform a neurologic exam on a standardized patient, encounter common neurologic emergencies in the simulation lab and repeatedly apply their knowledge in both inpatient and outpatient settings where they will encounter a broad range of neurologic diagnoses. Fail Thru Honors(MED)

OBGY 3001 Obstetrics/Gynecology

The Obstetrics and Gynecology clerkship covers pathophysiology of the female reproductive system. The basis for the diagnosis, management, and treatment of diseases specific to women are also covered. Students participate in patient encounters in the operating room, labor and delivery, emergency room, ambulatory clinics and on the hospital wards. Fail Thru Honors(MED)

PSYC 3001 Psychiatry

The Psychiatry clerkship is a six week rotation where students will participate in a multidisciplinary team to help provide care for patients with ongoing psychiatric illness. Students in this clerkship will build on their knowledge about behavioral sciences from their Doctoring, Nervous System and Behavior module, and Foundations of Medical Science experiences and will expand their interviewing, diagnostic and treatment skills for psychiatric disorders. Fail Thru Honors(MED)

SURG 3001 Surgery

The Surgery clerkship curriculum emphasizes the basic clinical skills required to solve common surgical problems. Students will be introduced to preoperative, postoperative, emergency, and ambulatory care of patients. By the completion of this clerkship, students will be expected to demonstrate an understanding of the pathophysiology of surgically treatable diseases and to have acquired sufficient knowledge and diagnostic skills to be able to recognize when a patient's condition might best be served by a surgical consultation. Students will also develop skills for the safe, effective, and efficient management of patients in the hospital and ambulatory setting. Fail Thru Honors(MED)

PED 3001 Pediatrics

Pediatrics is an eight week rotation, with four weeks spent on the inpatient unit at Children's Memorial Hermann Hospital or Memorial Hermann Hospital Sugarland and four weeks spent at one of several outpatient pediatric clinics scattered around Houston. Students will be exposed to the care of newborn infants, children with acute and chronic medical conditions, and well children coming in for their regular checkups. A major focus of the clerkship is injury and illness prevention. Students will become familiar with congenital and acquired conditions, as well as normal and abnormal patterns of development.

Elective

All students have the opportunity to explore a wide variety of specialties during their three week third year elective. During this time students may explore specific specialty interests, or they may work on a project associated with their Scholarly Concentration. Pass/Fail

Students will have four weeks of vacation during the Clerkship Phase.

Career Focus Tracks Phase

The Career Focus Tracks Phase occurs in Year 4 of the curriculum and consists of 42 instructional weeks. The goal of the Career Focus tracks is to provide students with clinical experience related to their intended career path, and to provide career mentoring and guidance. There are four tracks: primary care, acute care, academic career, and applied anatomy. During the tracks, all students complete three required advanced clinical selectives: ambulatory care, advanced patient care, and critical care. Additionally, the career focus tracks require six (6) four-week electives tailored to the students' interests.

Students will take the required Comprehensive Clinical Competency Examination (CCCE) at the beginning of Year 4.

Career Focus Tracks (CFT 4001)

Students choose one of four fourth year tracks, corresponding to their career goals. These tracks have specialty-related educational activities throughout the year.

- The Primary Care track is designed for students interested in Pediatrics, Internal Medicine, Family Medicine, and Psychiatry. Students planning on practicing OB/Gyn in the community might also select this track.

- The Acute Care track is primarily designed for students planning to go into Emergency Medicine or Anesthesia.
- The Applied Anatomy track is designed for students interested in surgical specialties, pathology, and radiology.
- Academic Career is a track for students who have embarked on a significant research project during medical school. They are permitted to devote additional elective time to research in order to ready their project for publication.

AMB 4000 Required Ambulatory Medicine

The required fourth-year ambulatory rotation is an outpatient clinic-based selective, allowing students to choose a particular area of focus consistent with their career trajectory. Students are able to request an ambulatory experience in emergency medicine, family medicine, internal medicine, obstetrics-gynecology, or pediatrics. Students will care for patients coming in for preventative health checkups and those with minor acute illnesses. Students also revisit the principles of evidence-based medicine and complete a critical literature review for a clinical question of their choosing. Fail Thru Honors(MED)

RCC 4000 Required Critical Care

The required critical care rotation places fourth year students in an ICU setting, caring for the sickest patients in the hospital under the supervision of critical care fellows and faculty. Students are able to request from a list of ICUs, tailoring the experience to their intended career. There is a focus on procedures and ventilator management. Fail Thru Honors(MED)

APC 4000/4001 Advanced Patient Care

This rotation, commonly referred to as an "acting internship" or a "Sub-I" rotation, puts fourth year students on inpatient teams in the role of an intern, giving students primary responsibility for hospitalized patients under the direct supervision of a faculty member. Students will work on a call or shift system alongside the residents, taking admissions, practicing order entry, and working with case managers to ensure safe discharges. Students may choose a rotation that best fits their career plans from a wide variety of inpatient services.

RTR- 4000 Transition to Residency

This course includes specialty-based workshops, panel discussions, plenary speakers, and clinical skills practice sessions designed to prepare students for residency.

McGovern Medical School's fourth-year elective programs permit students to seek clinical opportunities away from Houston, at their own expense, ranging from family practice in rural communities to experiences in the most sophisticated settings requiring advanced technology. International clinical and research electives also are available. The School is fortunate regarding the wealth of clinical opportunities available to its students.

The fourth-year elective catalog is available online here (<https://med.uth.edu/admissions/current-students/ms4/>).

Fourteen weeks are available for vacation or additional electives. These weeks may be used during the required clerkships in special circumstances and with prior approval of the Office of Admissions and Student Affairs.

Graduate Medical Education

The learning process encompasses more than a student's four years in medical school. All graduates may continue to expand their knowledge and refine their skills by seeking further supervised medical training.

Graduate Medical Education programs provide physicians the opportunity to prepare for practice in a medical specialty. Residency and fellowship programs focus on the development of clinical skills and professional competencies.

McGovern Medical School conducts its residency and fellowship training programs at hospitals and clinics affiliated with UTHealth Houston. The GME program offers carefully organized and evaluated instruction in the various disciplines of medicine. These accredited programs are recognized toward fulfillment of the requirements of the respective specialty boards. McGovern Medical School programs participate in the National Residency Matching Program. Information and applications for residency or fellowship programs are available from the program directors listed in the American Medical Association (AMA) Directory of Residency Training Programs and the Fellowship and Residency Electronic Interactive Database (FREIDA).

Sub-specialty fellowship programs are open to application by physicians who have completed their general residency training and meet the requirements of the sub-specialty program.

McGovern Medical School sponsors accredited residency programs in the following disciplines: Anesthesiology, Dermatology, Emergency Medicine, Family Medicine, Internal Medicine, Medical Genetics, Neurological Surgery, Neurology, Obstetrics and Gynecology, Occupational Medicine, Ophthalmology, Oral and Maxillofacial Surgery, Otolaryngology, Orthopedic Surgery, Pathology, Pediatrics, Plastic Surgery, Psychiatry, Child Psychiatry, Diagnostic Radiology, Interventional Radiology-Integrated, General Surgery, Colon and Rectal Surgery, Thoracic Surgery Integrated, Vascular Surgery Integrated, Urology, Internal Medicine/ Pediatrics, Child Neurology, and Physical Medicine and Rehabilitation. In addition, there are over 50 accredited sub-specialty fellowships. McGovern Medical School also offers a variety of unaccredited sub-specialty programs approved through the Texas Medical Board.

For information on residency and fellowship programs at McGovern Medical School, contact:

The Office of Graduate Medical Education
McGovern Medical School 6431 Fannin, Suite JLL 310
Houston, Texas 77030
Website: <https://med.uth.edu/gme/>

Continuing Medical Education (CME)

McGovern Medical School is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. Additionally, McGovern Medical School certifies activities for Maintenance of Certification and Continuous Certification for various medical specialty boards and partners with the Cizik School of Nursing for nursing continuing professional development accreditation.

McGovern Medical School hosts live, interactive lecture-based instruction, case-based discussion, hands-on training sessions, small-group workshops, and internet-based asynchronous enduring materials. The CME portfolio of programs includes regularly scheduled series and conferences covering a broad range of topics in all medical specialties,

sponsored by various McGovern Medical School departments and divisions.

CME activities are open to physicians, physician assistants, nurse practitioners, and other interprofessional providers who practice primary, specialty, and subspecialty care, as well as medical students and trainees.

For information on CME, contact:

Office of Continuing Medical Education
McGovern Medical School
6431 Fannin, JLL 304
Houston, Texas 77030
Website: <https://med.uth.edu/cme/>

Pre-Entry Program

The Pre-Entry Program is an intensive four-week program offered to a subset of students prior to matriculating to the first year of medical school. The program includes course content in anatomy, biochemistry, histology, immunology, microbiology, and physiology/neuroscience taught by McGovern Medical School faculty members. Students are also introduced to study skills. The noncredit program is designed to prepare students for the academic rigors of the medical school curriculum. Invitations are sent to students who might benefit from the program. Students may also request consideration for participation in this program. Second year students serve as tutors for the program.

For information about the Medical School's academic program, call 713-500-5140, e-mail: ms.ume@uth.tmc.edu, or write:

Philip Carpenter, PhD, Director, Pre-Entry Program
Erin Bodeker, Educational Programs Coordinator
Office of Educational Programs
McGovern Medical School
6431 Fannin, MSB G.420
Houston, Texas 77030

Visit the Pre-Entry Program website (<https://med.uth.edu/oep/pre-entry-program/>)

Course Descriptions - MD

Course descriptions are organized by the MD degree course subject. To skip to course descriptions for a specific subject, select from one below. Course descriptions in school catalogs and the Course Search (<https://catalog.uth.edu/course-search/>) are correct at the time of publication. See myUTH (<https://uthidp.uth.edu/nidp/saml2/sso/?id=Campus-Affiliate-LOA2-DUO&sid=0&option=credential&sid=0>) for more recent course information and to register for courses.

Ambulatory Medicine (AMB)

AMB 4000 Required Ambulatory Medicine

The required fourth-year ambulatory rotation is an outpatient clinic-based selective, allowing students to choose a particular area of focus consistent with their career trajectory. Students are able to request an ambulatory experience in emergency medicine, family medicine, internal medicine, obstetrics-gynecology, or pediatrics. Students will care for patients coming in for preventative health checkups and those with minor acute illnesses. Students also revisit the principles of evidence-based medicine and complete a critical literature review for a clinical question of their choosing. Fail Thru Honors(MED)

Biological Sciences (BSCI)

BSCI 1100 Foundations of Medical Science P/F

The purpose of this module is to provide students with the fundamentals necessary to study human disease at an advanced level. Students will learn the basic structure and function of major organs at the same time as they practice the related physical exam and clinical skills in Doctoring. In addition, students will learn the basic biochemical, cellular, and physiological mechanisms that underlie the major classes of disease. Course fee: \$675-anatomy Pass/Fail Course fee: \$675

BSCI 1101 Doctoring 1: History and Physical Exam P/F

This course introduces the student to the basic clinical skills of interviewing a patient and conducting a comprehensive medical history. Students learn to perform a normal physical examination on a healthy adult and document patient encounters (comprehensive history and physical examination) in an organized, accurate manner. The student integrates their own experiences during the course with longitudinal theme content to illustrate ways in which a physician communicates respect, compassion, and empathy. The student applies knowledge obtained from the longitudinal themes including the treatment of special patient populations (geriatric, pediatric etc.) and they will have specific training in the interview of the psychiatric patient. Pass/Fail

BSCI 1200 Hematology and Introduction to Pathology

The Hematology and Introduction to Pathology (HIP) module begins with an introduction to basic principles underlying disease: cell injury, adaptation, cell death and the effects that these processes have on tissues and organs. This is followed by an introduction to neoplasia. The second portion of the HIP module focuses on hematologic disorders, including anemias, coagulation disorders, and thrombotic disorders and how these conditions are treated. Reactive white blood cell disorders and hematologic malignancies will also be presented. Fail Thru Honors(MED)

BSCI 1201 Cardiovascular System

The Cardiovascular Module focuses on expanding the concepts presented in Foundations and developing a knowledge base in pathology, pharmacology and clinical skills associated with the heart and vascular system. The emphasis is on management of cardiovascular disease including hypertension, myocardial infarction, congestive heart failure, arrhythmias, and both congenital and acquired cardiovascular defects. The concepts presented in this module are linked those presented during the subsequent pulmonary and renal modules to emphasize the tight integration of these organ systems. Fail Thru Honors(MED)

BSCI 1202 Pulmonary System

This course begins with a review of pulmonary physiology from Foundations, followed by lung development and introduces radiologic imaging of lung structure. Students will study more in-depth lung physiology, and infectious and obstructive diseases of the lung in both adults and children. Students will be introduced to pathology, physiology, radiology and management of various acute critical conditions such as sepsis, acute respiratory distress syndrome and pulmonary embolism. Fail Thru Honors(MED)

BSCI 1203 Renal System

The Renal System Module covers the physiology defining normal renal function, clinical characteristics and pathology / pathophysiology of diseases of the kidney, and clinical disorders that result from failure of the kidney to function correctly. Students will learn to evaluate changes in fluid and electrolyte balance, mineral metabolism and glomerular function and renal clearance. The clinical implications of renal dysregulation/dysfunction will be explored. Fail Thru Honors(MED)

BSCI 1204 Doctoring 2: Longitudinal Clinical Experience

During Doctoring 2 students begin to use the skills acquired in Doctoring 1. Students will interview, perform comprehensive and focused histories, and perform comprehensive physical exams to evaluate patients with diseases and symptoms. Students will document patient encounters in an organized manner. Student will be able to integrate clinical and basic science knowledge in order to: analyze basic laboratory results; develop a differential diagnosis; determine a basic science pathology and pathophysiology. The student will be able to integrate their own experiences during the course with longitudinal theme content to describe in depth at least two key lessons learned by attending an interprofessional patient safety meeting. Fail Thru Honors(MED)

BSCI 2100 Gastrointestinal System

The Gastrointestinal Module builds on the concepts learned in Foundations and other systems modules further enhancing their knowledge base in anatomy, biochemistry, microbiology, pharmacology, pathology, and clinical expertise pertaining to the field of gastroenterology, hepatology, and nutrition. This module uses a variety of pedagogies, including didactic lectures, problem-based learning (PBL) cases and independent study. Fail Thru Honors(MED)

BSCI 2101 Nervous System & Behavior

The Nervous System and Behavior Module (NSB) is a team-taught course that provides an interdisciplinary approach to understanding the nervous system and behavior. The module consists of multi-modal learning approaches: lectures, clinical presentations with patients, laboratory sessions, clinical correlations, small group learning exercises, self-study exercises and problem based learning (PBL) cases. The ultimate objectives and goals of the NSB Module are to provide an understanding of the structure, function and dysfunction of the nervous system. Mental illness, behavioral dysfunction, and substance use issues are presented from a biopsychosocial perspective with both pharmacological and psychological interventions for treatment. Fail Thru Honors(MED)

BSCI 2102 Doctoring 3: Longitudinal Clinical Experience

Doctoring 3 builds on skills gained from Doctoring 1 & 2 (interview, comprehensive/focused history, comprehensive/focused physical exam) to evaluate patients with diseases and symptoms, and document patient encounters in an organized, accurate manner. The student will be able to integrate clinical and basic science knowledge in order to: analyze basic laboratory results; develop a differential diagnosis; determine a basic science pathology and pathophysiology. The student will be able to integrate their own experiences during the course with longitudinal theme content to describe in depth at least two key lessons learned by attending an interprofessional patient safety meeting. Students are required to complete Basic Life Skills during Doctoring 3. This course spans the fall and spring semesters. Fail Thru Honors(MED)

BSCI 2103 Endocrine System

This module focuses on hypothalamic-pituitary axis, and normal growth patterns and growth disorders. Students will learn about diagnostic strategies and therapeutic options for various diseases including pituitary, metabolic, adrenal and thyroid disorders. Students will also be introduced to the diagnosis and pharmacologic management of osteoporosis. Fail Thru Honors(MED)

BSCI 2201 Reproductive Systems

This module focuses on hormonal regulation of reproductive function, evaluation and management of infertility, and pregnancy, including preconception planning and the physiology of birth. Students will be introduced to the management of diabetes, hypertension, and infectious diseases during pregnancy. They will also learn about uterine, ovarian and breast pathology, as well as the genetics of breast and gynecologic malignancies. Students will also be introduced to breast imaging and the medical treatment of breast cancer, as well as management of sexually transmitted infections and male genitourinary pathology. Students will discuss sexual identity, sexual function, and the reproductive health of older adults. Fail Thru Honors(MED)

BSCI 2202 Musculoskeletal System & Derm

Students will learn about the morphology, pathophysiology, clinical presentations and management of common skin disorders. They will spend time in the dermatology clinic where they will have the opportunity to perform skin examinations, and learn about evaluating and diagnosing skin conditions. Students will also learn about various bone disorders and soft tissue malignancies, including pathophysiology, diagnosis, differential diagnosis, management and treatment. The approach to various forms of musculoskeletal pain, relevant physiology, and treatments will be explored. Fail Thru Honors(MED)

BSCI 2304 Transition to Clerkship (P/F)

This course prepares students for the clerkships. It is composed of required sessions including large group and skills sessions. Pass/Fail

Emergency (EMER)

EMER 4M01 Advanced ECG Interpretation and Clinical Application (P/F)

This elective covers basic ECG interpretation, advanced ECG interpretation, and case-based clinical ECG interpretation. Pass/Fail

EMER 4M02 Introduction to Point of Care Clinical Ultrasound (P/F)

This two-week elective will provide an introduction to the use of bedside ultrasonography in routine clinical care in an emergency department setting. Students will learn how to use the ultrasound machine and how to perform the emergency medicine ultrasounds that are commonly used to help diagnose and differentiate our urgent and emergent, undifferentiated patients. Students will assist in review of studies performed by residents and faculty in the emergency department during regularly scheduled QA sessions. Emergency Medicine Online Interactive Ultrasound Course, Core Ultrasound FOAMed videos, in person didactics. Pass/Fail

EMER 3030 Emergency Medicine (Pass/Fail)

This third-year elective will provide an introduction to emergency medicine. Students will learn how to generate differential diagnoses that include urgent and emergent conditions consistent with history and physical examination findings in the undifferentiated patient. Students will be introduced to basic patient care and monitoring of common acute problems in the undifferentiated patient. Pass/Fail

EMER 4004 Emergency Adult Medicine

For the student interested in pursuing a career in Emergency Medicine, this elective will serve as an introduction to a county hospital emergency department similar to that in which he/she will train. For the student interested in other fields, this elective will provide an opportunity to learn about the early presentation and initial management of a variety of problems commonly seen in an emergency department. Due to the wide variety of patients seen, managing these problems will be a useful experience regardless of the student's chosen specialty. Fail Thru Honors(MED)

EMER 4005 Emergency Medical Services/Disaster

This elective will provide medical students with an insight into the full spectrum of prehospital and disaster medicine, including EMS medical direction, prehospital systems of care, interfacility transfer of patients, operational prehospital medicine, and disaster mitigation, preparedness, response, and recovery. This course will lead to a future physician who is better able to engage with the prehospital providers and agencies that respond and transport patients to or from the hospitals of their future careers. Additionally the learners will recognize the importance of disaster management and be prepared to participate in disaster planning and response. The student will work to understand major concepts in prehospital and disaster medicine as it pertains to systems of care in the prehospital to hospital, transfer, or post discharge realms. Fail Thru Honors(MED)

EMER 4007 Pediatric Emergency Medicine

This elective will give students the unique opportunity to learn about and care for acutely ill children who present with a wide range of presentations. Additionally, this elective allows students to spend time dedicated to pediatric emergency medicine, including the process of diagnostics, management, and transition of care, as well as perform procedures under direct supervision. Fail Thru Honors(MED)

EMER 4008 Houston Emergency Opioid Engagement System - HEROES

UT Health Heroes is a comprehensive care coordination system helping navigate patients through the complex recovery journey based on an understanding of physical and psychological components of substance use, related mental health issues, treatment, and recovery. Heroes works closely with first responders and other local providers to connect systems of care and identify individuals who need access to care. Community providers share data and provide referrals when individuals meet specific substance use and related mental health criteria. The program provides assertive community outreach, educating on treatment options and helping individuals navigate recovery. The program is comprised of peer recovery specialists, chemical dependency counselors, licensed and clinical social workers, physicians, advanced practice providers, research scientists, research coordinators, statisticians, academic professors, and data analysts. The Heroes program is a part of UT Health's Center for Behavioral Emergency and Addiction Research (C-BEAR) which houses additional projects including the Heroes Helpline for first responders, a Young Heroes program for adolescents, Family Support services, an Educational Campaign, and the mobile unit Project Integra, a joint initiative with UT Health's Department of Internal Medicine. Fail Thru Honors(MED)

Family Medicine (FAMD)

FAMD 3001 Family Medicine

The goal of this clerkship is to introduce the principles and practice of Family Medicine, and to provide the essential clinical skills and training, which students will find useful in whichever specialty they choose to pursue. This clerkship focuses on the approach to the ambulatory patient and learning activities are planned to introduce the skills, knowledge, and attitudes that all physicians need when faced with such a patient. The curriculum for this course focuses more on the process of evaluating and treating a new patient or problem, and is not limited by a specific content. A core content will be addressed that is central to the acute, chronic, and preventive care that family physicians deliver. Additional knowledge and skills are gained in the specific areas relevant to the patient encounters. Students develop a framework within which they can initiate evaluation and care for any patient, regardless of clinical setting or problem, and do so in a fashion that fosters an ongoing relationship with the patient. Fail Thru Honors(MED)

FAMD 4028 Preventive Medicine

This elective incorporates the principles of preventive medicine in a family practice setting. The student will be able to observe and participate in patient assessment and diagnosis, patient consultation, exercise prescription, and identifying risk factors for the various age groups. The student will also learn the value of health maintenance and the prevention of illness in terms of its importance to the individual physician and his/her family. Fail Thru Honors(MED)

FAMD 4048 Ambulatory Family Medicine

This elective is designed for students who have completed their required Family Medicine clerkship and Ambulatory selective and desire more exposure to ambulatory Family Medicine. Fail Thru Honors(MED)

FAMD 4057 Lifestyle Medicine

Lifestyle medicine is a medical specialty that uses therapeutic lifestyle interventions as a primary modality to treat chronic conditions including, but not limited to, cardiovascular diseases, type 2 diabetes, and obesity. Lifestyle medicine trained physicians apply evidence-based, whole-person, prescriptive lifestyle changes to prevent, treat and manage conditions. Lifestyle medicine rests on the foundations of six pillars: a whole-food, plant-predominant eating pattern, physical activity, restorative sleep, stress management, avoidance of risky substances and positive social connections. Fail Thru Honors(MED)

FAMD 4058 Urgent Care

The urgent care elective will provide medical students with hands-on experience managing a broad spectrum of acute conditions commonly encountered in an outpatient setting. Material covered includes the evaluation and treatment of respiratory infections, musculoskeletal injuries, dermatologic conditions, gastrointestinal complaints, and minor trauma. Students will develop skills in rapid triage, diagnostic reasoning, and procedural techniques such as wound care, splinting, and incision and drainage. Emphasis will be placed on efficient yet thorough patient assessment, appropriate use of imaging and laboratory tests, and patient education. Additionally, students will gain insight into healthcare access, continuity of care, and cost-conscious decision-making. Fail Thru Honors(MED)

Geriatrics (GERI)

GERI 3030 Geriatrics (Pass/Fail)

The geriatric and palliative third year rotation is designed to enable medical students to practice effectively in a clinical setting. Students will actively participate in the ongoing, daily care of older and/or palliative patients. Students will be paired with a geriatric or palliative preceptor who will provide clinical teaching and feedback. Throughout the clerkship, students will work with a variety of geriatric and/or palliative focused health professionals as part of the interprofessional team approach. Pass/Fail

Internal Medicine (INTM)

INTM 3001 Medicine

The Internal Medicine Clerkship is an eight week rotation split into two four week blocks with the primary goal of introducing students to the evaluation and treatment of adults hospitalized with acute medical illness. Emphasis is placed on developing the skills to diagnose common clinical conditions and to recognize the clinical presentations of common diseases. Students will take patient histories, perform comprehensive physical exams, formulate problem lists with appropriate differential diagnoses, and document their findings in the electronic health record. Students will participate in the evaluation of a variety of patients as part of a team of residents and students under the supervision of an internal medicine faculty member. Fail Thru Honors(MED)

INTM 3030 Internal Medicine (Pass/Fail)

This elective will introduce students to the sub-specialties of Internal Medicine. Students will have the opportunity to preference the following experiences: Allergy/Immunology, Ambulatory Medicine, Cardiology, Endocrinology, Pulmonary Medicine, Nephrology, Rheumatology, General Oncology-LBJ, Medical Oncology, and Introduction to Oncology. Pass/Fail

INTM 4002 Ambulatory Internal Medicine

To familiarize the student with initial evaluation, treatment, and follow-up of problems commonly seen in the ambulatory setting of practicing internists. A variety of patient care problems will be encountered from the acute to the chronic, not only in the area of Internal Medicine but also in orthopedics, gynecology, and other fields. The course will focus on rapidly determining the patient's chief complaint and developing an intervention plan consistent with the severity of the illness. Fail Thru Honors(MED)

INTM 4004 Cardiology - Memorial Hermann Hosp

Students on this elective will gain experience in managing patients seen in a typical cardiology consultative practice; and practice electrocardiographic interpretation. Fail Thru Honors(MED)

INTM 4005 Endocrinology Clinical Elective

This elective offers an intensive ambulatory care experience in varied settings. Frequent small didactic sessions with faculty. Comprehensive review of all endocrinology with a goal of preparing the student for residency including inpatient and outpatient diabetes management, thyroid disorders, calcium and other electrolyte disorders, metabolic bone disorders, and pituitary diseases. During the rotation there are several interdisciplinary conferences. Fail Thru Honors(MED)

INTM 4018 Cardiac Electrophysiology

The goal of the rotation is to provide a balanced, structured and scholarly experience in both inpatient and outpatient clinical electrophysiology. Diagnosis and management of clinical arrhythmias is emphasized using both invasive and noninvasive techniques. Fail Thru Honors(MED)

INTM 4019 Evidence Based Practice Clerkship

This elective will demonstrate the practice of evidence-based medicine within a clinical context. Faculty will model the practice of EBP in real-time and within the context of patient cases. The general goals of this elective are as follows: - To help students develop advanced skills in EBP that they will utilize during residency and life-long to inform their care of patients using best available evidence. - To model EBP in the clinical setting - To foster the computer and searching skills required to practice EBM successfully. Fail Thru Honors(MED)

INTM 4022 Geriatrics/Palliative Care

This elective provides exposure to a wide range of geriatric clinical experiences in the outpatient setting which include house calls, clinic, elder mistreatment evaluations. There is also the option for inpatient palliative and geriatrics consultations. This elective helps students better understand how the health care system affects their patients. This knowledge can improve patient care in the inpatient and outpatient setting. Fail Thru Honors(MED)

INTM 4023 Pulmonary Medicine Consult/Critical Care

On the pulmonary consultation service elective, the student will be exposed to a wide range of pulmonary diseases in the form of an interesting and frequently challenging problem. A pathophysiologic approach to the diagnosis and management of this problem will be emphasized. In-depth teaching in the care of the critically ill patient will be an important part of the elective. Fail Thru Honors(MED)

INTM 4024 Rheumatology Clinical Elective

Musculoskeletal conditions are becoming an increasingly prevalent and important problem in clinical practice as the population ages. Acquiring knowledge and training in this area is an essential part of the medical education curriculum. The objectives of this rotation are: 1) Obtain medical knowledge on rheumatic diseases and the assessment of the functional anatomy of the musculoskeletal system 2) Obtain knowledge and gain an understanding of the importance & subtleties of the medical history in the evaluation of rheumatic diseases 3) Gain knowledge in the interpretation of autoantibody, immunologic, radiologic and pathologic findings of rheumatic diseases 4) Provide training in the skills necessary to function as an effective medical subspecialty consultant to other services Fail Thru Honors(MED)

INTM 4025 Gastroenterology Clinical Elec - LBJ

The Elective at LBJ offers significant opportunities to learn about acid peptic, vascular, neoplastic, and inflammatory disorders of the luminal GI tract. The student is exposed to pancreatic-biliary diseases and sees a broad spectrum of liver disease. Fail Thru Honors(MED)

INTM 4026 Gastroenterology Clinical Elec - Hermann

As part of the GI consultation team, the student on this elective will evaluate and help formulate a diagnostic and therapeutic approach to hospitalized patients with a wide variety of luminal and solid organ digestive diseases. These important diagnostic skills are acquired through close interaction with the faculty and fellows of the Division. With capabilities of videoendoscopy and small bowel capsule endoscopy, the student will have the opportunity to correlate clinical information with specific pathology. Fail Thru Honors(MED)

INTM 4042 Cardiology-LBJ Hospital

This elective offers opportunities to evaluate the patient at the initial presentation in the emergency room or on the wards; manage the patient on the wards and in the intensive care unit and intermediate care unit; observe transthoracic and transesophageal echocardiography; observe stress testing such as exercise and pharmacological stress echocardiography and nuclear stress studies. Fail Thru Honors(MED)

INTM 4045 Sleep Medicine

Students on this elective will gain a basic understanding of normal sleep physiology and most important sleep disorders, including methods of diagnosis and means of treatment with patient contact and hands-on experience in the Sleep Laboratory and Sleep Clinic. Fail Thru Honors(MED)

INTM 4049 Senior Elective in Hematology

Students will participate in a consultative inpatient hematology service and in hematology clinics. A broad range of hematological problems are seen. In addition, there is a didactic component, with small group formal and informal lectures with the faculty. The topics covered include review of the pathophysiology and treatment of different cytopenias (anemia, leukopenia, thrombocytopenia), coagulopathies, thrombotic disorders, bone marrow disorders and hemoglobinopathies. Fail Thru Honors(MED)

INTM 4053 Cardiology-MD Anderson

This course will provide the medical students with an educational opportunity to learn about the common and uncommon conditions present in patients with cancer and complications from cancer treatment. They will learn specialized cardiovascular pathophysiology, diagnostic, and management of risk factors. $\hat{z}$ As part of the cardiology team, the students will rotate through the inpatient service. Opportunity to attend the out patient clinic will also be provided. $\hat{z}$ Take history and perform physical exam on a unique population of cardiac patients $\hat{z}$ Direct exposure to and teaching of transthoracic and transesophageal echocardiography and electrocardiograms, emphasizing the anatomy and physiology of the heart $\hat{z}$ Direct exposure to and teaching of stress testing such as exercise and pharmacological stress echocardiography and nuclear stress studies $\hat{z}$ Participate in patient assessment, diagnosis, and management with faculty supervision $\hat{z}$ Attend the daily morning reports, Cardiology Grand Rounds, and the weekly Clinical Practice Conference. Fail Thru Honors(MED)

INTM 4057 Hyperbaric and Aerospace Medicine

Pathophysiology and Hyperbaric Oxygen Treatment (HBOT) of decompression sickness, air embolism, carbon monoxide poisoning, late effects of radiation, necrotizing infections/osteomyelitis and Enhanced Wound Healing Pathophysiology and treatment of chronic wounds including those related to pressure, infection, ischemia, lymphedema & Venous stasis Fail Thru Honors(MED)

INTM 4058 Medical Oncology

The Oncology Service at Memorial Hermann Hospital TMC will expose medical students to the management of patients with neoplastic diseases. The rotation is designed to provide students with the education necessary to work effectively with cancer patients at both the level of an internist, and subspecialist oncologist. The student will interact with patients requiring chemotherapy administration, and interact with patient who are having complications from disease progression or side effects from therapy, through attending outpatient clinics. The student will be supervised while they learn to coordinate patient care across the health care continuum, and will be allowed to take the lead for history taking for new patient encounters if desired. Scholarship is important, and the student is expected to learn that an oncologist is a humanistic scientist who cares for patients. The student will have firsthand experience implementing previous practice-based learning modules performed in medical school core lectures to solidify key medical knowledge as it relates to oncologic patients. Addition benefits will include learning how to implement cancer screening for prevention, understanding cancer survivorship, recognizing oncologic emergencies, and understanding prognosis for corresponding treatments. The resident will interact with different medical teams in a collegial manner and show compassion, integrity, and respect for others. Fail Thru Honors(MED)

INTM 4059 Intensive Care Nephrology

The student will be exposed to the basic science (physiology/ pharmacology) of the specialty as well as to clinical practice. This elective is comprised of a month on the Intensive Care Nephrology service. Bedside rounds will be conducted on all new admissions, consultations, and hospital follow-ups daily. Fail Thru Honors(MED)

INTM 4061 General Oncology LBJ General Hospital

The student will be exposed to the basic science (physiology/ pharmacology) of the general oncology as well as to clinical practice. The elective aims to provide the student with instruction in the broad field of general oncology ranging from prevention to the management of patients with advanced cancer. The student will participate in conferences, in-patient consultations, and office follow-ups of patients with various kinds of malignancies. There is excellent opportunity for learning physical examination findings, as well as the basic management of a broad spectrum of medical problems. Fail Thru Honors(MED)

INTM 4063 Advanced Cardipulmonary Therapies and Transplantation

This elective will introduce students to the Advanced Heart Failure and Transplant specialty, diagnostic and interventional catheterization procedures, non-invasive studies (echocardiography, EKGs, and stress testing), rounding on inpatient services and consulting on outpatients (including pre- and post-operative cardiac surgery patients), and alternative therapies available to heart failure patients. This elective will also introduce the student to the type of multispecialty care that is provided to a large number of patients with advanced and complex cardiac conditions. Fail Thru Honors(MED)

INTM 4064 Nephrology Clinical Consultation Service

Understanding of normal and abnormal fluid and acid base electrolyte physiology; and Understanding of pathogenesis, clinical expression, diagnosis, and therapy of acute and chronic renal disease with emphasis on acute renal failure in the ICU patient. Fail Thru Honors(MED)

INTM 4065 Exploring the End of Life

This elective will provide an in-depth introduction to various aspects of end-of-life care. Participants will become familiar with the medical aspects of end-of-life care by directly participating in patient care in the inpatient, outpatient, and home hospice (if available) care environments. Participants will also gain a better understanding of how end of life care fits into the greater medical system by reviewing legal aspects of end-of-life care and medical decision making in Texas. Finally, students will participate in organized independent reading and reflection exercises to further understand what patients and families experience during and after a loved one dies. Flexibility to design a program tailored to the needs and goals of each participant are encouraged. Fail Thru Honors(MED)

INTM 4066 Allergy/Immunology

Students on this elective will review the key clinical features and presentations of patients with allergies, asthma, immune deficiency, and/or other atopic diseases. Students will see and discuss patients with the attending in clinic, review evidence-based management, and observe procedures including skin testing, patch testing, spirometry, and immunotherapy Fail Thru Honors(MED)

INTM 4067 Introduction to Oncology MD Anderson

This elective is designed to expose students to all aspects of clinical oncology by direct participation in the daily disease-specific outpatient oncology clinics at the University of Texas MD Anderson Cancer Center in the Texas Medical Center. Multidisciplinary oncology is aimed at introducing students to the full breadth of roles that physicians play in taking care of oncology patients. The elective will primarily consist of engaging in patient care experiences across multiple disciplines (medical oncology, surgery, radiation oncology, pathology, radiology.) The goal is for the students to develop an understanding of how each discipline contributes to patient care and how they work together in a team setting. Basic therapeutic principles will also be acquired which will allow for greater understanding during these clinical experiences. Cancer patients often have very serious illnesses, and physicians and patients form long-term relationships. Therefore, students will also gain experience in having difficult and end-of-life conversations. Students will have the opportunity to work-up patients with new cancer diagnoses and to participate in the on-going care of patients with diverse cancer diagnoses. Students will participate as active members of the oncology team, attending the regularly scheduled clinical conferences and disease site-specific multidisciplinary tumor boards. Although the emphasis of the elective is on outpatient oncology in disease-specific units, students may also have the opportunity to work with the in-patient oncology team. Fail Thru Honors(MED)

Neurology (NEUR)**NEUR 3000 Required Neurology**

The Neurology clerkship is a four week rotation designed to educate students to take a relevant neurologic history, perform a comprehensive neurologic exam and based on their findings, effectively localize the lesion or determine the relevant neuroanatomical correlation. Students will have an opportunity to perform a neurologic exam on a standardized patient, encounter common neurologic emergencies in the simulation lab and repeatedly apply their knowledge in both inpatient and outpatient settings where they will encounter a broad range of neurologic diagnoses. Fail Thru Honors(MED)

NEUR 4004 Ambulatory General Neurology

This elective involves direct patient care within an ambulatory neurology setting. The students will be invited to attend neurology conferences including the residents didactic lecture series, weekly adult grand rounds presentation as well as pediatric grand rounds. In addition, the students will receive informal didactics while working with the attendings in the clinic. A multitude of general neurology topics will be covered: headaches (migraines, tension, cluster, paroxysmal hemicrania), neuromuscular diseases (myasthenia gravis, myopathies, neuropathies, motor neuron disease, Guillan Bare syndrome, etc.), seizure disorders, movement disorders (Parkinson's disease, Huntington's disease, spasticity, dystonia, etc.), dementia (Alzheimer's disease, frontotemporal dementia, Lewy body dementia, multi-infarct dementia, etc.), syncope, and spinal stenosis. Fail Thru Honors(MED)

NEUR 4005 Epilepsy

This elective involves direct patient care within an ambulatory neurology setting. The students will be invited to attend neurology conferences including the residents didactic lecture series, weekly adult grand rounds presentation as well as pediatric grand rounds. In addition, the students will receive informal didactics while working with the attendings in the clinic. Topics covered include diagnosis of epilepsy, the role of imaging and EEG, basics of anticonvulsant medication, treatment of status, and workup of epilepsy surgery. Fail Thru Honors(MED)

NEUR 4006 Movement Disorder & Neurodegen Diseases

This elective involves direct patient care within a primarily ambulatory setting. The students will be invited to attend neurology conferences including the residents didactic lecture series, weekly adult grand rounds presentation as well as pediatric grand rounds. In addition, the students will receive informal didactics while working with the attending in the clinic. The students will accompany the movement disorder group to deep brain stimulation (DBS) implantations where microelectrode recording is performed. The students will be exposed to the detailed preoperative selection of DBS candidates and learn by exposure the indications for DBS and the criteria and work up used to identify a good candidate. Additionally, the student will be exposed to the literature and evidence that supports the time frame for intervention and the treatment options available to patients with movement disorders. In addition, the students will be involved with the preoperative selection of appropriate intrathecal baclofen pump patients and will accompany the movement disorders group to perform baclofen trials. Fail Thru Honors(MED)

NEUR 4009 Neuro-Oncology

This elective builds upon the students' exposure to neurology in the required third year neurology clerkship. Students will be given the opportunity to refine their neurological exam and techniques. The students will be exposed to the principles and practice involved in making the diagnosis and developing treatment plans of patients with cancer of the nervous system or neurologic complications of a non neurologic malignancy. Students will have the opportunity to evaluate patients in an inpatient setting in addition to an ambulatory setting. This elective allows the students to work closely with Neuro-Oncology faculty on a daily basis. The students will be exposed to neuroimaging and will receive detailed instruction regarding the appearance of CNS/PNS malignancies on routine magnetic resonance imaging. Fail Thru Honors(MED)

NEUR 4010 Neuropsychiatry & Dementia

This elective is based in a neuropsychiatry clinic that is a referral center which receives patients from neurologists, psychiatrists, internists, and geriatricians, across the Houston area. This center commonly evaluates and diagnoses patients with symptoms of dementia, but also sees patients across the whole spectrum of neuropsychiatric and behavioral symptoms. The students will be involved in direct patient care in an ambulatory setting. They are also invited to attend neurology conferences, including the residents didactic lecture series, weekly adult grand rounds presentation, as well as pediatric neurology grand rounds. The students will be exposed to the full range of dementias. Alzheimer disease is the most prevalent dementia in the general population, which is also true of our patients, though we more frequently evaluate young patients with atypical presentations. Lewy Body Disease, Frontotemporal Dementia, Vascular Dementia, Parkinson, and Normal Pressure Hydrocephalus are also common. Rarer degenerative diseases $\pm$ PSP, CBD, MSA, CJD $\pm$ are seen once or twice most months. Though most patients are referred for dementia, we also see patients with a variety of neuropsychiatric symptoms secondary to head trauma, encephalitis, stroke, toxic-metabolic syndromes, and primary psychiatric illness. Diagnostic studies vary across the broad differential, and include neuropsychological testing, imaging (MRI, FDG-PET, DAT, amyloid PET), and laboratory evaluations. Treatment is highly variable depending on the diagnosis. Fail Thru Honors(MED)

NEUR 4011 Telemedicine Multidisciplinary

Students on this elective will develop a working knowledge and basic competence in performing a clinical evaluation via telemedicine. The will practice establishing rapport through appropriate telepresence and communication via telemedicine, obtaining a thorough yet efficient history from the patient and family via telemedicine, utilizing the telemedicine equipment to perform a focused physical exam, formulating a diagnosis and plan using information remotely gathered from history and exam, and understanding the use of telemedicine in various medical specialties and settings. Fail Thru Honors(MED)

Obstetrics/Gynecology (OBYG)**OBYG 4M08 Ob-Gyn Ultrasound Mini Elective**

Basic principles of ultrasound technology; ultrasound evaluations of the fetus; prenatal diagnosis; and antepartum testing Fail Thru Honors(MED)

OBYG 3001 Obstetrics/Gynecology

The Obstetrics and Gynecology clerkship covers pathophysiology of the female reproductive system. The basis for the diagnosis, management, and treatment of diseases specific to women are also covered. Students participate in patient encounters in the operating room, labor and delivery, emergency room, ambulatory clinics and on the hospital wards. Fail Thru Honors(MED)

OBYG 4002 Gynecologic Oncology

This elective will provide a thorough introduction to the basic principles of gynecologic oncology. Participants will become familiar with the principles and techniques of chemotherapy, radiotherapy, and surgery. This will be accomplished by direct participation in each of these areas of patient treatment. Participants' level of responsibility will be commensurate with their desire and experience. Flexibility to design a program tailored to the needs and goals of each participant will be allowed. Fail Thru Honors(MED)

OBYG 4006 Externship in Obstetrics

Management of labor and supervision of patients. Antepartum, intrapartum and postpartum management of obstetrical patients. Fail Thru Honors(MED)

OBYG 4007 High Risk Obstetrics/Maternal Fetal Med

This elective is designed for the student who has decided on a career in obstetrics and gynecology. It affords the opportunity to follow high risk pregnancies from initial prenatal assessment and counseling throughout pregnancy and intrapartum course. The Maternal Fetal Special Care Unit is a unique intensive care unit designed to handle all medical, surgical, and obstetric complications of pregnant women and their fetuses. Fail Thru Honors(MED)

OBYG 4008 Obstetrics & Gynecological Ultrasound

This elective is designed for the student who has chosen a career in Obstetrics/Gynecology or Diagnostic Radiology and desires a concentrated experience in obstetric imaging and prenatal diagnosis. The student will spend time at the Center for Maternal and Fetal Treatment in UTPB, the antenatal testing unit at MHH, or the LBJ Hospital perinatal testing center. Students have the opportunity to augment their clinical experience with ultrasound simulator lessons and hand on practices. Fail Thru Honors(MED)

OBYG 4009 Clinical Reproductive Endo & Infertility

It is anticipated that the student will develop a working knowledge of normal and abnormal reproductive biology which can be applied to the evaluation and treatment of females in a variety of clinical settings and in particular females with infertility and gynecological endocrine problems. Fail Thru Honors(MED)

OBYG 4016 Gynecologic Oncology

This elective will provide a thorough introduction to the basic principles of gynecologic oncology. Participants will become familiar with the principles and techniques of chemotherapy, radiotherapy, and surgery. This will be accomplished by direct participation in each of these areas of patient treatment. Participants' level of responsibility will be commensurate with their desire and experience. Flexibility to design a program tailored to the needs and goals of each participant will be allowed. Fail Thru Honors(MED)

OBYG 4017 Clin Externship in Ob & Gynecology

This elective is designed for students who strongly desire a career in obstetrics and gynecology. It features a board experience in gynecology and obstetrics with the residents, faculty, and staff at St Joseph's and Methodist Hospitals. Fail Thru Honors(MED)

OBYG 4025 Obstetrics & Gynecology/LBJ Hosp-Gren Tm

This elective is geared toward students interested in careers in women's health. High volume of routine and complicated peripartum patients; high volume of ambulatory care patients. Introduction to obstetrical procedures including ultrasound and focus on labor management and postpartum care. Fail Thru Honors(MED)

OBYG 4029 Externship in Gynecology - Oncology

This elective will provide an in-depth introduction to the basic principles of complex benign gynecology and gynecologic oncology. Participants will become familiar with multiple treatment modalities of chemotherapy, radiotherapy, and surgery by direct participation in patient care. Participants' level of responsibility will be commensurate with their desire and experience. Flexibility to design a program tailored to the needs and goals of each participant is encouraged. Unique opportunities include working with a small patient centered team with few attendings and the possibility of participating in a research project. Fail Thru Honors(MED)

OBYG 4031 Urogynecology & Pelvic Reconstructive Surgery

This elective will provide an in-depth introduction to the basic principles of Urogynecology and pelvic reconstructive surgery. Students will become familiar with multiple treatment modalities of incontinence, prolapse, and pelvic floor disorders. They will participate in clinic and surgery. They will be involved directly in all levels of patient care. Participant's level of responsibility will parallel with their desire and experience. Flexibility to design a program tailored to the needs and goals of each participant will be encouraged. Unique opportunities at UT include working directly with attending one on one in clinic. Fail Thru Honors(MED)

Patient Care (APC)**APC 4000 APC/Inpatient Memorial Hermann Hospital**

Students will deepen their knowledge of inpatient Family Medicine by providing direct patient care to hospitalized patients on the family medicine teaching service. Working with residents and faculty, students will learn about the diagnosis and management of common problems such as chest pain; myocardial infarction; cardiac, hepatic and/or renal failure; diabetes; metastatic cancer; pneumonia, sepsis, and other infectious diseases; COPD; HIV; and GI bleeding. Students will have the unique opportunity to spend 1 of the 4 weeks working with the night residents. This will increase the student's exposure to and experience with new hospital admission and performing acute care. Fail Thru Honors(MED)

APC 4010 APC/Medicine Acting Internship

The Department of Internal Medicine offers senior students the opportunity to act as interns on the teaching services in Internal Medicine. The rotation provides an opportunity for the senior student to make the transition from student to intern in medicine. It is designed to give the student a high degree of responsibility for patient care. The acting intern will share equal status with the medical interns on the service in all respects. Fail Thru Honors(MED)

APC 4013 APC/Internal Medicine - Pediatrics

The Department of Internal Medicine offers senior students the opportunity to act as interns on the teaching service in Internal Medicine-Pediatrics. The rotation provides an opportunity for the senior student to make the transition from student to intern in medicine. It is designed to give the student a high degree of responsibility for patient care. The acting intern will share equal status with the medical interns on the service in all respects. Fail Thru Honors(MED)

APC 4014 APC/Internal Medicine - Geriatrics

The Department of Internal Medicine offers senior students the opportunity to act as interns on the teaching service in the Geriatrics and Palliative Medicine Division. The rotation provides an opportunity for the senior student to make the transition from student to intern in medicine. It is designed to give the student a high degree of responsibility for patient care. The acting intern will serve as a medical intern on the service. Fail Thru Honors(MED)

APC 4020 APC/Pediatric Neurology

Students will learn to practice elements of pediatric neurology, including history of illness, birth and developmental history, family/social history, neurological examination, and formulation of treatment/management plan. Students will attend on inpatient service with attending pediatric neurologist and pediatric neurology / pediatric residents and will follow patients into the outpatient clinic. Topics covered include common and unusual child neurology disorders (e.g., seizures, autism, migraine, cerebral palsy, neurometabolic/neurocutaneous disorders, interviewing skills, history taking, neurological examination, and formulation of management). Fail Thru Honors(MED)

APC 4021 APC/Neurology/Stroke

The Department of Neurology and Stroke Institute offer senior students the opportunity to act as interns on the inpatient Stroke Service. The rotation provides an opportunity for the senior student to make the transition from student to intern on the Stroke Service. It is designed to give the student a high degree of responsibility for patient care. The acting intern will share equal status with the Neurology interns on the service in all respects. Fail Thru Honors(MED)

APC 4030 APC/High Risk Obstetrics/Maternal Fetal

Pathophysiology of common obstetric disorders such as preterm labor, preeclampsia, diabetes mellitus, etc. Maternal and fetal pathophysiology will be covered. Fetal respiratory and cardiovascular physiology as it relates to interpretation of fetal heart rate monitoring and biophysical profile assessment skills. Fail Thru Honors(MED)

APC 4032 APC/Obstetrics Inpatient Precept

Basic diagnoses and management of routine and high-risk obstetrical problems. Evaluation of patients in the emergency room referred to our service for consultation. Ambulatory care will include seeing patients in the OB Emergency Department, and weekly clinic. The student will be assigned to work with a team of residents and faculty. Fail Thru Honors(MED)

APC 4033 APC Gynecology-Oncology Inpatient/Memorial Hermann Hospital

This elective will provide an in-depth introduction to the basic principles of complex benign gynecology and gynecologic oncology. Participants will become familiar with multiple treatment modalities of chemotherapy, radiotherapy, and surgery by direct participation in patient care.. Unique opportunities at UT include working with a small patient centered team with 5 attendings on an inpatient service, ambulatory clinic, and surgical team. Fail Thru Honors(MED)

APC 4040 APC/Inpatient Pediatrics

General pediatrics Inpatient pediatrics Specific focus on the disease processes of hospitalized patients Fail Thru Honors(MED)

APC 4042 APC/Neonatal Intensive Care III Nursery

The student will achieve improved understanding of the physiology of the perinatal period including the process of normal transition from intrauterine life and physiology of disorders inherent in disruption of this normal transition. Fail Thru Honors(MED)

APC 4052 APC/Adult Inpatient Psychiatry

Faculty and staff on this rotation consist of two full-time psychiatrist and two full-time master social workers. Patients served by these units are either voluntarily admitted or involuntarily committed to the UTHealth Houston Harris County Psychiatric Hospital (UT-HCPC). The ages of patients served are 18 through geriatric age, with broad diversity. The average length of stay is 7 days. Diagnoses seen include psychotic, mood, anxiety, substance abuse, personality and cognitive disorders. Many patients have been dually diagnosed with substance abuse disorders and other primary psychiatric disorders. Some patients have intellectual developmental disorders or autism spectrum disorders. Treatment provided by the team includes psychiatric assessment, psychopharmacologic interventions, and psychotherapeutic treatment. Students spend approximately 30-40 hours weekly on the service, including 6-8 hours daily for rounds, documentation and case supervision. Students spend their time in medical and psychiatric evaluation, attendance at multidisciplinary team treatment planning meetings and rounds, in observation of program/administrative activities on the unit. Students will carry 4-5 cases at a time. Students will see their own patients daily, but will round with the team to be aware of all the cases on the unit. Case assignments are monitored by the unit attending physician to achieve a balanced clinical learning experience with the patients in regard to the age, sex, and diagnostic categories of the patients. Ongoing supervision is provided on a daily basis by the attending physician during rounds and treatment planning meetings. In the final week of the rotation, the student will give a formal patient case presentation with literature review during the resident case conference at UT-HCPC. The presentation will be approximately 20 minutes in length and will be attended by approximately 30 medical students, residents and faculty. Supervising faculty will provide close support in the development and presentation of the case. Fail Thru Honors(MED)

APC 4060 Cardiothoracic & Vascular Surgery MHH

Conduct and management of a cardiothoracic and vascular surgical service to include ambulatory care, inpatient work, consultation, and operating room. Clinical problems pertinent to preparation for internship in surgery. Fail Thru Honors(MED)

APC 4061 APC/General Surgery MHH Moody Service

Conduct and management of an elective general surgical service to include ambulatory care, inpatient work, consultation, and operating room. Clinical problems pertinent to preparation for internship in surgery. Will also receive exposure to minimally invasive and bariatric surgery. Fail Thru Honors(MED)

APC 4062 APC/Inpatient General Surgery LBJ

Conduct and management of a general surgical service to include ambulatory care, inpatient work, consultation, and operating room. Clinical problems pertinent to preparation for internship in surgery. Fail Thru Honors(MED)

APC 4064 Oral & Maxillofacial Surgery

Basic skills in evaluating and resuscitating injured patients; pre-operative care; post-operative care in the SIMU and on the wards. Also included are basic skills in evaluating, treating, operating and post-op care of acute General Surgery patients. Fail Thru Honors(MED)

APC 4065 APC/General Surgery Dudrick Service

Conduct and management of a general surgical service to include ambulatory care, inpatient work, consultation, and operating room. Clinical problems pertinent to preparation for internship in surgery. Will also receive exposure to minimally invasive surgery. Fail Thru Honors(MED)

APC 4066 APC/Trauma Surgery

Conduct and management of a trauma surgical service to include ambulatory care, inpatient work, consultation, and operating room. Clinical problems pertinent to preparation for internship in surgery. Fail Thru Honors(MED)

APC 4070 APC/Neurosurgery

The Department of Neurosurgery offers senior students the opportunity to act as interns on the Neurosurgery teaching services. Students will work one-on-one with faculty and will be exposed to the continuity of care for neurosurgical patients including seeing patient's pre-op, in the operating room, post-op, and in the outpatient clinic for follow-up care. This selective provides an opportunity for students to transition from student to intern in neurosurgery and is designed to give the student a high degree of responsibility for patient care. Students will function as an intern and will be evaluated at the level of an intern. Students will rotate through the vascular, spine, and tumor services. Specific objectives are as follows: Develop a thorough assessment of a patient's problems including the development of an appropriate differential diagnosis Take and document appropriately focused histories on patients Perform relevant physical examinations Follow assigned patients daily including writing a daily progress note Coordinate patient care with physician consultant teams and hospital services Arrange discharge plans including providing appropriate patient education and follow-up Assist with the creation of discharge summaries Students will function at the level of an acting intern on the service. Students will be responsible as the primary caregiver for their patients, discussing each of their patients with the senior resident and the attending on a daily basis during rounds. Students are required to attend the following conferences: Neurosurgery M&M, Neurosurgery Grand Rounds, Neuro-Radiology Conference, and the Neurosurgery Curriculum Conference. Students will take call with the team. Students will demonstrate attainment of the above objectives through attendance and participation in didactic conferences and attendance at clinical assignments and participation in clinical activities. Fail Thru Honors(MED)

APC 4080 APC/Urology

Exposure to the entire spectrum Urology. This includes a wide variety of general urology problems, urologic oncology, stone disease, neurogenic bladder disease, voiding dysfunction, incontinence, genitourinary injury, reconstructive urology, gender affirmation surgery and transgender care, erectile dysfunction and pediatric urology. Students will be involved in the operative, inpatient, and ambulatory care of urology patients. By the end of this elective, the student should be able to: 1. Describe urologic anatomy and physiology 2. Complete work ups for common urologic issues such as microscopic hematuria, voiding dysfunction, and stone disease. 3. Discuss the basic principles of the evaluation and management of common urologic malignancies, such as prostate cancer, kidney cancer, and bladder cancer 4. Discuss the basic pre-and post-operative management of urologic cancers, voiding dysfunction, and stone disease 5. Identify risk factors associated with and screening recommendations for urologic malignancies 6. Learn the basics of reading and interpreting urologic publications 7. Basic Knowledge of Urologic Radiology Students may be involved with call and will schedule with the resident team. Fail Thru Honors(MED)

APC 4090 APC/Orthopaedic Surgery

This selective will allow students to function as an acting intern in orthopedic surgery. Students will take orthopaedic histories and conduct appropriate physical examinations of the extremities and spine. This APC should be considered by students applying to an Orthopaedic Surgery Residency Program. By the end of this selective, the student should be able to: Summarize and interpret results of the history, physical examination, lab and imaging tests to form a differential diagnosis Develop treatment plans that include common therapeutic options Write complete and accurate daily progress notes including interpretation of clinical, laboratory, and radiographic findings Manage common inpatient orthopaedic conditions Perform basic procedures including reduction of fractures, application of casting and splints, insertion of skeletal traction pins, joint arthrocentesis, and basic suturing of lacerations Assist with basic orthopedic surgeries including long bone intramedullary nailings, eg. Tibia and femur, open reduction internal fixation of periarticular fractures, open reduction internal fixation of pelvic and acetabular fractures, open reduction and internal fixation of long bone injuries, management of common pediatric fractures, incision and drainage of septic arthritis, irrigation and debridement/wound vac application of open fractures and soft tissue defects Students will attend clinical activities as determined by the resident team and will take call every fourth night. Students will attend didactic conferences with the resident team and the weekly fracture review (every Wednesday night from 5-7 pm). Students will meet with the APC director (Dr. Warner) every Monday night from 4-6 pm for case review. Students will demonstrate attainment of the above objectives through attendance and participation in didactic conferences and attendance at clinical assignments and participation in clinical activities. Fail Thru Honors(MED)

APC 4100 Plastic Surgery

This selective is intended to be chosen by those students who are truly interested in pursuing Plastic Surgery as a career goal. This selective will allow students to function as an acting intern in plastic surgery. Students should enter this rotation with a thorough knowledge of the pertinent anatomy, proficiency in the implementation of the reconstructive ladder and a working knowledge of the permutations of grafts and flap surgery. Students enrolling in this elective should have a functional knowledge of the basics in all areas of Plastic Surgery including, Cosmetic Surgery of the face and body, to include body contouring surgery, Oncologic Plastic Surgery and specifically breast reconstruction surgery, Hand and Microsurgery, Facial Trauma, Pediatric Plastic Surgery, Acute burn and burn reconstruction and the reconstruction of other traumatic injuries. During APC 4100, the student will be considered an active member of the surgical team and will work one-on-one with the Plastic Surgery Fellows and Staff. This will be a mentoring type relationship: The student will be expected to function independently with very close monitoring and appropriate guidance from the Fellows and Staff. As an active member of the team, the student will be counted on to participate in all aspects of patient care including; daily inpatient rounds, seeing patients in the outpatient clinics and daily participation in operative cases. By the end of this selective, the student should be able to: Summarize and interpret results of the history, physical examination, lab and imaging tests to form a differential diagnosis Develop treatment plans that include common therapeutic options Write complete and accurate daily progress notes including interpretation of clinical, laboratory, and radiographic findings Manage common plastic surgery conditions Assist with basic plastic surgeries including craniofacial surgery; including craniosynostosis, cleft lip and cleft palate; hand surgery: including nerve compression syndromes, Flexor tendon injuries, extensor tendon injuries and microsurgical replantation of digits; and facial trauma: including frontal sinus fractures, orbital fractures, mid-face fractures, and mandibular fractures. Students will attend all didactic conferences (Thursday mornings from 6 am-9 am). Call is required and the student will take call every third night with the fellow. Students will demonstrate attainment of the above objectives through attendance and participation in didactic conferences and attendance at clinical assignments and participation in clinical activities. Fail Thru Honors(MED)

APC 4110 Emergency Medicine

This is a complaint-based Emergency Medicine experience in which undifferentiated patients as well as critically ill patients are represented. Procedural skills are developed as well as providing the student a robust resuscitation experience. Fail Thru Honors(MED)

APC 4111 Hospital Medicine

This APC exposes fourth year medical students to the variety of patients that a hospitalist can render care to in a high acuity tertiary center. It will cover inpatient and outpatient preoperative risk assessment, hospitalist perioperative management of neuro and ortho trauma patients. Inpatient management of cirrhotic patients and medical co-management as a consultant on patients at our acute rehabilitation center who are post spinal cord injury, stroke and traumatic brain injury. Skills Acquired: At the end of the rotation the student should be able to: perform a preoperative risk assessment for a patient that will be having a non-cardiac surgery as well as learn how to medically optimize patient perioperatively (on ambulatory and inpatients) identify potential sequelae of spinal cord injury and recognize potential emergencies that can occur in spinal cord injury patients. recognize signs or symptoms of potential solid organ pathology in a trauma patient. be familiar with long term complications of cirrhosis and understand the management of several urgent medical conditions than occur in cirrhotic patients understand and manage sequelae of CNS trauma (TBI and SCI) With these experiences, the student will be well equipped to not only pursue a future career in hospital medicine should they choose to do so but they will also learn a great deal to enhance their medical knowledge in whatever other field of medicine they choose to pursue. Fail Thru Honors(MED)

APC 4120 Otolaryngology - Head & Neck Surgery

This selective will allow students to function as an acting intern in clinical otolaryngology. Students will take Otolaryngologic histories and conduct appropriate physical examinations of the head, neck and body. This APC should be considered by students who have an interest in clinical otolaryngology. By the end of this selective, the student should be able to: Summarize and interpret results of the history, physical examination, lab and imaging tests to form a differential diagnosis Develop treatment plans that include common therapeutic options Write complete and accurate daily progress notes including interpretation of clinical, laboratory, and radiographic findings Manage common inpatient conditions related to the head and neck Perform basic procedures including suturing of lacerations, flexible laryngoscopy, tracheostomy tube management, dressing changes, endotracheal tube management, and ear cleaning Students will be able to first-assist during otolaryngological surgeries including major head and neck cancer surgeries, airway surgeries (including endoscopy), ear surgeries, sinus surgeries and microvascular reconstructive surgeries. Effectively and professionally present an Otolaryngology case at departmental grand rounds Students will attend clinical activities as determined by the resident team and will take call every fourth night. Students will attend all educational conferences including trauma conference. Students will meet with the APC director (Dr. Roy) each week for a review of the case log. Students will demonstrate attainment of the above objectives through attendance and participation in didactic conferences and completion of clinical assignments and participation in clinical activities. Fail Thru Honors(MED)

APC 4130 General Neurology Inpatient Services

The Department of Neurology offers fourth year medical students the opportunity to act as interns on the inpatient General Neurology service at Memorial Hermann Hospital. This rotation provides an opportunity for the fourth year medical student to make the transition from student to intern on the General Neurology inpatient service. It is designed to give the student a high degree of responsibility for patient care. The acting intern will share equal status with the Neurology interns on the service in all respects. Fail Thru Honors(MED)

APC 4140 Pathology

This APC is intended to serve as a rigorous rotation in which students can get an in-depth look into pathology and develop skills that will allow them to excel in future pathology residency programs. The goals of the APC are: To provide a strong foundation in pathology training for students intending to apply for pathology residency. To assist students applying for pathology residency by allowing them more interaction with department faculty and signaling to residency programs that they are serious about their interest in pathology. Students will meet with the course director on the first day to review/develop their Individualized Learning Plan for the rotation. Students will take call as follows: Paired with an upper-level resident for 1 week of AP call and 1 week of CP call. At-home call: the student is expected to stay late or return to the hospital for patient care needs (frozen sections, exchange/apheresis procedures, peripheral smear review). Fail Thru Honors(MED)

Pediatrics (PEDI)**PED 3001 Pediatrics**

Pediatrics is an eight week rotation, with four weeks spent in the inpatient setting and four weeks spent at one of several outpatient pediatric clinics scattered around Houston. Students will be exposed to the care of newborn infants, children with acute and chronic medical conditions, and well children coming in for their regular checkups. A major focus of the clerkship is injury and illness prevention. Students will become familiar with congenital and acquired conditions, as well as normal and abnormal patterns of development. Fail Thru Honors(MED)

PED 3030 Pediatrics (Pass/Fail)

This elective will introduce students to the sub-specialties of Pediatrics including pediatric cardiology and pediatric infectious disease for the physician-scientist. Pass/Fail

PED 4002 Pediatric Cardiology

This elective not only provides conventional exposures to pediatric cardiology, but also provides opportunity to observe a variety of transcatheter interventional procedures in children. Fail Thru Honors(MED)

PED 4003 Pediatric Endocrinology

This elective combines directed literature review with patient appointments to provide systematic study of pediatric patients with 1) growth disorders, hypopituitarism and sexual precocity, 2) insulin-dependent diabetes mellitus, 3) adrenal and gonadal disorders, and 4) thyroid disorders and rickets in the respective weeks of the elective. Fail Thru Honors(MED)

PED 4006 Pediatric Nephrology

The student on this elective will be exposed to a broad range of problems in pediatric nephrology-congenital diseases, acquired diseases, acute and chronic renal failure, dialysis and transplantation, fluid and electrolyte disorders, and hypertension. Fail Thru Honors(MED)

PED 4013 Pediatric Hematology

Evaluation of common hematologic disorders (i.e. anemia, thrombocytopenia); basic review of treatment of above entities; consultation on diagnostic difficulties of both hematology and oncology; participation in the Gulf States Hemophilia Center treatment team; management of patients with Sickle Cell Anemia and thalassemia; and opportunities for clinical research. Fail Thru Honors(MED)

PED 4014 Pediatric Oncology

Introduction to pediatric Oncology with emphasis in the care of children and young adults using multiple discipline approach for acute and chronic problems. Fail Thru Honors(MED)

PED 4016 Harris County CPS Medical Clinic

This elective provides a general pediatrics outpatient experience in a high-risk population of children and adolescents with CPS involvement. Fail Thru Honors(MED)

PED 4017 Child Safety and Integrated Care

This elective provides both inpatient and outpatient clinical experiences on a busy child maltreatment team, as well as opportunities to learn from trauma-informed mental health professionals and behavioral health specialists. Students will learn about various types of child injuries that represent abuse, as well as accidental injuries and non-traumatic conditions that may be confused for abuse. They will also participate in evaluations of sexually abused and neglected children. Students will learn about child maltreatment via hospital and clinic cases, as well as via directed reading. They will attend multidisciplinary team meetings (MDT) and journal club, and they will be invited to witness courtroom proceedings when these occur. Students will have the opportunity to observe trauma-focused mental health treatment provided to children and families in our outpatient clinic. Targeted behavioral health treatment occurs with our inpatient pediatric psychology team. Students will receive didactic instruction in behavioral health best practices. Students will also have opportunities to learn about provision and coordination of evidence-based assessment and wraparound care for patients and families with complex medical and psychosocial needs. Fail Thru Honors(MED)

PED 4018 Genetics

Diagnosis and management of genetic diseases, malformation syndromes, and metabolic diseases; genetic counseling; and application of molecular genetics to clinical medicine. Fail Thru Honors(MED)

PED 4019 Pediatric Gastroenterology & Nutrition

Common gastrointestinal disorders in infants and children as well as their nutritional repercussions; nutrient requirements in infancy and their relationship to functional maturation of the gastrointestinal system; and diagnostic and therapeutic measures available to children with digestive disease. Exposure to a variety of diseases of the pediatric GI tract, including: recurrent abdominal pain, constipation, esophageal reflux, inflammatory bowel disease, allergic and eosinophilic disease, celiac disease, cyclic vomiting syndrome, short bowel syndrome, and liver transplantation. Fail Thru Honors(MED)

PED 4034 Pediatric Allergy/Immunology and Rheumatology

This elective will expose students to a variety of congenital and acquired immunodeficiencies, common pediatric rheumatic and musculoskeletal conditions, such as juvenile arthritis, pediatric SLE, multiple autoimmune disease. Students will have the opportunity to work one-on-one with pediatric allergy/immunology and rheumatology attendings and will be able to customize clinical experiences to their specific interests. Fail Thru Honors(MED)

PED 4035 Pediatric Pulmonology

This elective will expose students to a variety of pediatric respiratory diseases. Students will evaluate and manage a broad range of pediatric respiratory diseases, including but not limited to asthma, bronchopulmonary dysplasia, chronic respiratory failure and ventilator dependence, sleep apnea, and respiratory consequences of neuromuscular disease. Fail Thru Honors(MED)

PED 4038 Pediatric Neurology

Common and uncommon neurological conditions in pediatric patients (ex. Epilepsy, headaches, autism, developmental delay, neuromuscular disorders, metabolic/mitochondrial disorders, genetic conditions, and other neurological symptoms). The students will spend 2 weeks in the outpatient clinics and 2 weeks on the inpatient consult service. There will be a weekly grand rounds to attend and the students will have to present at one of these grand rounds. Fail Thru Honors(MED)

Required Critical Care (RCC)**RCC 4000 Required Critical Care**

The required critical care rotation places fourth year students in an ICU setting, caring for the sickest patients in the hospital under the supervision of critical care fellows and faculty. Students are able to request from a list of ICUs, tailoring the experience to their intended career. There is a focus on procedures and ventilator management. Fail Thru Honors(MED)

Surgery (SURG)**SURG 3001 Surgery**

The Surgery clerkship curriculum emphasizes the basic clinical skills required to solve common surgical problems. Students will be introduced to preoperative, postoperative, emergency, and ambulatory care of patients. By the completion of this clerkship, students will be expected to demonstrate an understanding of the pathophysiology of surgically treatable diseases and to have acquired sufficient knowledge and diagnostic skills to be able to recognize when a patient's condition might best be served by a surgical consultation. Students will also develop skills for the safe, effective, and efficient management of patients in the hospital and ambulatory setting. Fail Thru Honors(MED)

SURG 3030 Plastic Surgery (Pass/Fail)

This third year elective has been designed to introduce the third year medical student to the field of Plastic Surgery. Students will be exposed to all areas of Plastic Surgery during this elective including; cosmetic surgery of the face and body, body contouring surgery, oncologic plastic surgery, breast reconstruction, hand and microsurgery, facial trauma, pediatric plastic surgery, acute burn and burn reconstruction surgery as well as reconstruction of other traumatic injuries. During the rotation students will be considered an active member of the Plastic Surgery Team and will work one-on-one with the Plastic Surgery fellows and staff. As active members of the team, students will be expected to participate in all clinical aspects of patient care including, daily inpatient rounds, seeing patients in outpatient clinics and daily participation in operative cases. Pass/Fail

SURG 4004 Sub Internship At LBJ

Conduct and management of a general surgical service to include ambulatory care, inpatient work, consultation, and operating room. Clinical problems pertinent to preparation for internship in surgery. Fail Thru Honors(MED)

SURG 4011 Pediatric Surgery

This is an acting surgical internship, and 4th year students are expected to fully participate in all aspects of pediatric surgical patient care (newborn/congenital, trauma, and cancer) from the time of hospital admission to discharge. Activities include but are not limited to performing H&Ps and minor procedures and participating in surgeries. Fail Thru Honors(MED)

SURG 4013 Plastic Surgery

This elective provides an overview of plastic surgery and students will experience the different facets of plastic surgery including cosmetic surgery of the face and body, to include body contouring surgery, oncologic plastic surgery and specifically breast reconstruction surgery, hand and microsurgery, facial trauma, pediatric plastic surgery, acute burn and burn reconstruction and the reconstruction of other traumatic injuries. Fail Thru Honors(MED)

SURG 4016 Reconstructive Microsurgery of Cancer Pt

The student will observe and participate in the care of patients undergoing a wide variety of state-of-the-art reconstructive plastic surgery for cancer patients, with particular emphasis on reconstruction of the head and neck, breasts, skin, torso, pelvis, and extremities. The student will be exposed to a broad range of plastic surgery techniques including microvascular surgery, which involves the transfer of tissue flaps from distant parts of the body. He or she will gain an appreciation for the interdisciplinary nature of care for the cancer patient and how this care focuses on the quality of life, not just the quantity of life. Students will spend time both in the operating room and in the clinic (seeing patients pre- and postoperatively), providing the student with the opportunity to follow patients through their complete surgical course. This rotation may be of particular interest to students who wish to learn about plastic surgery, surgical oncology, medical oncology, head and neck surgery, orthopedic surgery, urology, gynecologic surgery, breast cancer, and skin cancer. Fail Thru Honors(MED)

SURG 4019 Gen/Trauma Surgery HH Duke Service

This rotation offers the student the opportunity to work as a sub-intern on the trauma surgery service at the Texas Trauma Institute at Memorial Hermann Hospital, the busiest level one trauma center in the United States. Students will encounter critically ill and injured trauma patients and will participate in their care from ER admission through discharge. Fail Thru Honors(MED)

SURG 4034 Outpatient Surgery/Ambulatory Care

This elective will be based mainly in the Surgery Outpatient Clinic at LBJ Hospital. Regular clinics include: general surgery/vascular - 12 hours/week; breast care clinic - 8 hours/week; pediatric surgery clinic - 2 hours every other week; and minor procedure clinic - 2 hours/week. Fail Thru Honors(MED)

SURG 4038 Abdominal Transplant Surgery

This elective will expose students to the management and care of abdominal transplant patients. Students will be involved in the operative, inpatient, and ambulatory care of the pre- and post-liver, kidney, and pancreas transplant patient. Students will also have the opportunity to learn about immunosuppression therapy. Fail Thru Honors(MED)

SURG 4039 Vascular Surgery Sub-Internship

The curriculum for senior medical students on the vascular surgery service provides broad exposure to the specialty. Students follow patients through the initial consultation from the office, emergency ward, and hospital transfer through treatment and recovery. Students learn the differential diagnoses, physical exam, and initial evaluation of patients with vascular disease. UT vascular surgeons run the outpatient and inpatient vascular ultrasound laboratory and students will learn about the indications for ordering different vascular studies and how they are interpreted. Once the student arrives at the correct diagnosis, they will learn about the different treatment options, including medical therapy, open surgical and endovascular treatments. Fail Thru Honors(MED)

SURG 4040 General Surgery - Moody-West

This elective will expose students to the management of patients in a busy general surgical service with a focus on advanced gastrointestinal surgery, robotic and advanced laparoscopic surgery, and surgical endoscopy. Students will work closely with 6 faculty surgeons and a fourth year UT general surgery resident. During certain times of the year, students will also work with a minimally invasive surgery fellow. There is a large amount of direct interaction with attending surgeons. The focus of this rotation is developing skills of diagnosis, evaluation, as well as treatment planning for surgical diseases and continue further development of operating room technical skills for those interested in a residency in general surgery or a surgical subspecialty. Fail Thru Honors(MED)

SURG 4041 Surgical Oncology MDACC

This is 4-week advanced rotation in Surgical Oncology at the University of Texas MD Anderson Cancer Center that is designed for medical students who have a strong interest in entering a surgical or oncologic specialty. During this rotation, the student will have an opportunity to observe the multidisciplinary care of patients with cancer and major cancer operations, participate in perioperative management, and evaluate patients in clinic. The student may also see inpatient Surgical Oncology consults with the on-call fellow. This is a hands-on rotation, and students are expected to actively participate in patient care, oral presentations, rounds, and surgery, and will be given the responsibilities appropriate for a sub-intern. Approximately one month prior to the rotation, students may request areas of interest (please provide a ranking of the top 3 choices): Breast Surgical Oncology, Colon and Rectal Surgery, Endocrine Surgery, Hepatobiliary, Melanoma, Peritoneal Surface Malignancies, and Sarcoma. Fail Thru Honors(MED)

Transition to Residency (RTR)**RTR 4000 Required Transition to Residency (P/F)**

This course includes specialty-based workshops, panel discussions, plenary speakers, and clinical skills practice sessions designed to prepare students for residency. Pass/Fail

United States Medical Licensing Examination - USMLE (USML)**USML 3001 USMLE Prep**

USMLE Prep Credit/No Credit

MD/MBA

The challenges of managing healthcare entities demand leaders prepared in the business as well as the science of medicine. McGovern Medical School offers pathways leading to a dual MD/MBA (Doctor of Medicine and Master of Business Administration) degree. The requirements established for the program meet the general requirements of both degrees.

One pathway is in conjunction with the College of Business at the University of Houston – Clear Lake. This curriculum is offered in both a four-year (total MD & MBA) option and a five-year option. A second pathway is offered in conjunction with the McCombs School of Business at the University of Texas at Austin. This latter program is available as a five-year option and follows an Executive MBA format such that students can simultaneously pursue independent projects outside the standard medical school curriculum during their MBA year.

Students must meet the admission requirements of both the medical school and the business school to qualify for the MD/MBA program. Enrollment in the MBA program is accomplished after acceptance to McGovern Medical School.

Any questions or requests for information or to begin the application process please contact Michael W. Bungo, MD, Director MD/MBA Program, at michael.w.bungo@uth.tmc.edu. Additional and more comprehensive information is available on the website (<https://med.uth.edu/dualdegreeprograms/mdmba/>). Sample schedules are detailed on that site and links are provided to obtain more updated information.

MD/MBE

McGovern Medical School and Rice University offer a dual degree pathway program leading to an MD degree and a Master of Bioengineering (MBE). The requirements established for the program meet the general requirements of both degrees. The curricula are integrated along a five-year path to support student career objectives.

Students must meet the admission requirements of both schools to qualify for the MD/MBE program. Applicants will submit applications to McGovern Medical School through the Texas Medical and Dental Schools Application Service ("TMDSAS") and Rice University independently according to the admission criteria, schedules and policies of each school. Rice's Application process and admission standards can be found in the General Announcements (<https://ga.rice.edu/graduate-students/academic-policies-procedures/admission/>).

Information regarding the MD/MBE program can be found here (<https://med.uth.edu/dualdegreeprograms/>).

MD/MPH

McGovern Medical School and the UTHealth Houston School of Public Health (UTSPH) offer a pathway dual degree program leading to an MD degree and a Master of Public Health (MPH). The requirements established for the program meet the general requirements of both degrees with 12 shared credit hours. The curricula are integrated along a four- or five-year path to support student career objectives.

Students must meet the admission requirements of both schools to qualify for the MD/MPH program. Acceptance to UTSPH is accomplished by applying during the regular application cycles – deadlines are April 1 (for Summer/Fall admission) and October 1 (for Spring admission). To be considered for the four-year path, students must begin classes the summer prior to their first year of medical school and apply by April 1.

Further information regarding the MD/MPH program can be found here (<https://sph.uth.edu/degree-finder/?searchby=dp&did=7129b0c2-9aaa-46c1-a00c-7c2d666374e4&dept=ea81c064-92da-4551-8eda-2a65ca67e78c>).

MD/MS

The MD/MS in biomedical informatics program examines both electronic health records systems and clinical decision support systems and methods for enhancing those tools. In today's fast-paced healthcare environment, the ability to harness AI and data analytics is becoming increasingly important. AI is advancing research, enabling the discovery of new treatments, and enhancing the accuracy of diagnoses. Students learn about data interpretation and knowledge management as they

discover how to collect, process, and transform health and biomedical data into health information and knowledge. Dual degree students will understand core clinical informatics disciplines such as technology assessment, quality and outcome improvement, data analytics, and precision medicine.

Dual degree students will explore the wide range of applications of health and biomedical informatics to improve patient care. This dual degree will equip students with essential AI skills and tools. The program covers electronic health records, clinical decision support systems, data interpretation, technology assessment, quality improvement, data analytics, and precision medicine, preparing you to thrive in an evolving healthcare landscape.

Students must meet the admission requirements of both schools to qualify for the MD/MS program. Acceptance to SBMI is accomplished by applying during the regular application cycles – deadlines are July 1 (for Fall admission), November 1 (for Spring admission), and March 1 (for Summer admission).

MD/OMS

Both a four-year and six-year Advanced Education Program in Oral and Maxillofacial Surgery Residency are offered by UTHealth Houston. The six-year program is offered jointly through the UTHealth Houston School of Dentistry and McGovern Medical School. Each program prepares practitioners to treat diseases, injuries, and defects involving both the functional and aesthetic aspects of the hard and soft tissues of the oral and maxillofacial region. The basic prerequisites for both the four- and six-year programs are a DDS or DMD degree from an ADA accredited dental school.

The six-year program adopts a similar schedule to the four-year program, with the primary difference consisting of requirements for obtaining the MD degree. The first year is spent with the oral and maxillofacial surgery department. In the second, third, and fourth years, residents are enrolled in medical school, completing years two, three, and four of the medical school curriculum. During the fourth year of medical school, eight months are provided for the fulfillment of requirements related to the oral and maxillofacial surgery residency, such as rotations on neurosurgery, anesthesia, and other OMS services; during the fifth year, the residents will do the general surgery rotation. The remaining fifth and sixth years of the program are focused on completing the requirements for medical licensure in the State of Texas and oral and maxillofacial training. The OMS training includes rotations to six different hospitals as a senior surgical resident. Upon satisfactory completion of the six-year program, residents receive a certificate in oral and maxillofacial surgery and a MD degree.

Further information on the MD/OMS Program can be found here (<https://dentistry.uth.edu/students/advanced-education/programs/#students-oms>).

MD/PhD

The Medical Scientist Training Program (MSTP) is a dual degree MD/PhD program of McGovern Medical School and MD Anderson UTHealth Houston Graduate School of Biomedical Sciences. The program educates physician-scientists and draws from faculty expertise at UTHealth Houston and MD Anderson Cancer Center. This rich training environment—encompassing laboratories, hospitals, and clinics in the Texas Medical Center—ensures that our graduates are uniquely prepared for careers in translational research, where basic research is applied to improving

patient care and promoting well-being, and observations/samples from patients are taken to the laboratory to improve understanding of disease mechanisms.

Students must meet the admissions requirements of McGovern Medical School to qualify for admission to the MSTP. The program is restricted in size and provides stipend and tuition support for MD/PhD candidates. For further information, visit the program's website (<https://gsbs.uth.edu/mdphd/>).

Those interested in the MSTP should inquire through the MMS Office of Admissions and Student Affairs. Application for admission to the MSTP may be made by submitting an application online through the American Medical College Application Service (AMCAS) and a mandatory secondary application. Three (3) letters of recommendation (two (2) general letters and an additional letter from a research mentor) are also required and should be submitted through AMCAS. The application deadline is November 1st. For additional information you may also contact the MD/PhD administration at 713-500-6865 or by email at mstp@uth.tmc.edu.

Certificate in Clinical Research and Learning Healthcare

Program Description

The Clinical Research and Learning Healthcare Certificate at McGovern Medical School is a focused, flexible, and affordable program that provides graduate-level education for students who plan to develop a career in patient-oriented clinical research. The objective is to produce clinical investigators who are skilled in clinical research study design, competitive in seeking research support and knowledgeable about advanced biostatistical methods. This 12-credit program is designed to accommodate clinicians' busy schedules, with most courses offered on Wednesday afternoons or evenings. The program is largely comprised of live, in-person small group classes; this is not an online or distance-learning program.

The program includes graduate-level coursework in epidemiology, biostatistics, clinical trial design, health care economics, and clinical guideline development.

Students will receive training in planning and executing clinical research designs as well as analyzing and disseminating research results.

Admission Requirements

This certificate will provide graduate-level education for students who plan to develop a career in patient-oriented clinical research. The objective is to produce clinical investigators who are skilled in clinical research study design, competitive in seeking research support and knowledgeable about advanced biostatistical methods. The program is designed for those with a graduate healthcare-related professional degree (e.g., MD, DO, PhD, PharmD) who currently hold a full-time faculty or fellowship appointment at an academic institution. The rapid pace of the curriculum assumes a working knowledge of clinical medicine and an excellent scholastic aptitude.

General admission requirements for the Certificate program are below:

1. Degree requirement: (one of the following degrees is required)
 - a. Advanced degree in health-related field (MD, DO, PhD or PharmD in a related field)

2. Pre-requisite training: At least one year of the Clinical Research Curriculum (CRC) is strongly encouraged before applying to the Certificate program. The CRC is an introductory level series of courses open to all clinical researchers at McGovern Medical School, other Texas Medical Center institutions, and CTSA-affiliated institutions. More information on the CRC can be found here (<https://med.uth.edu/crebm/clinical-research-education/clinical-research-curriculum/>).
3. Completed application form with curriculum vitae and personal statement expressing commitment to a career involving biomedical research
4. Submit two (2) letters of reference/support
5. Official transcripts covering all periods of post-secondary enrollment in accredited institutions of higher education

MSCR students in good-standing may elect to transition from the degree program to the certificate program if this better aligns with their educational and career goals. Additionally, students enrolled in the certificate program who wish to matriculate to the MSCR degree program may apply, and if accepted, all relevant coursework would transfer towards the degree requirements.

Certificate Requirements

To be eligible for award of certificate, a student must:

- complete the minimum of 12 semester credit hours of coursework within five years of admission to the program
- have a minimum cumulative 3.0 grade point average

Code	Title	Hours
Certificate Program Requirements		
CLRS 5010	Advanced Biostatistics for Clin Investig	4
CLRS 5017	Advanced Clinical Research Design	4
Select one of the following courses:		
CLRS 5015	Using Rsrch to Infrm Hlth Cre Policy&Prac	4
or CLRS 5020	Economic Evaluations in Clinical Research	
Total Hours		12

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