

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 anesthetist 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 (AAAEP), the national organization of educational leaders collaborating to advance and support Anesthesiologist Assistant (AA) education.

The following are required:

- 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.
- 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.

- 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.
- 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

			Grading Type	Grading Component
ANES 5302	Applied Physiology in Anesthesia I	4	'A' Letter Grade = 4.00 Grade Points	90 - 100 Numeric Average Range Earned
ANES 5351	Case Based Simulation I	2	'B' Letter Grade = 3.00 Grade Points	80 - 89.99 Numeric Average Range Earned
ANES 6302	Clinical Anesthesia Experience I	3	'C' Letter Grade = 2.00 Grade Points	70 - 79.99 Numeric Average Range Earned
ANES 5204	Pharmacology for Anesthesiologist Assistants II	4	'F' Letter Grade = 0.00 Grade Points	< 70.00 Numeric Average Range Earned
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	90 - 100 Numeric Average Range Earned			
'B' Letter Grade = 3.00 Grade Points	80 - 89.99 Numeric Average Range Earned			
'C' Letter Grade = 2.00 Grade Points	70 - 79.99 Numeric Average Range Earned			
'F' Letter Grade = 0.00 Grade Points	< 70.00 Numeric Average Range Earned			
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	4.00 - 5.00 Average Clinical Evaluation Score			
'B' Letter Grade = 3.00 Grade Points	3.00 - 3.99 Average Clinical Evaluation Score			
'C' Letter Grade = 2.00 Grade Points	2.75 - 2.99 Average Clinical Evaluation Score			
'F' Letter Grade = 0.00 Grade Points	< 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:

1. 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.
2. Satisfactory clinical performance as determined by the Program and Clinical faculty
3. Satisfactory professionalism standing as determined by the Program and Clinical faculty
4. 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>).