MASTER OF SCIENCE IN ANESTHESIA PROGRAM

Program Overview
Joseph M. Rifici, CAA, MEd
Executive Program Director

Jennifer Puin, PhD
Network Admissions Director

For inquiries, please email (https://applygrad.case.edu/register/?id=e5f1a533-09d2-4338-8fcb-0089f4da065c) or call us at 216.368.2336. https://case.edu/medicine/msa-program/

The Master of Science in Anesthesia (MSA) Program at Case Western Reserve University began in 1970, the second anesthesia program of its kind in the nation. The program originally awarded a baccalaureate degree, then evolved into a professional postgraduate program in 1987 and began granting the master’s degree. Today, students earn a Master of Science in Anesthesia degree that is designed to prepare them to enter the certified anesthesiologist assistant profession.

Admission to the MSA Program requires a bachelor’s degree with prescribed prerequisites typical of premedical coursework and successful completion of the MCAT or GRE. The early decision deadline for admission into the program is in October and the regular decision deadline is in February each year. Coursework begins at the end of May and consists of 24 consecutive months of didactic and clinical study. The MSA Program is accredited by the Commission on Accreditation of Allied Health Education Programs (http://www.caahep.org/) and is based on the Standards for Anesthesiologist Assistant Programs. Graduates must complete a curriculum that includes 70 credit hours (six semesters) of classroom and clinical instruction. The first three semesters integrate basic science and clinical instruction.

In addition to the main campus program, CWRU also oversees the Master of Science in Anesthesia Program’s Houston, Texas location (https://case.edu/medicine/msa-program/houston/) and Washington, DC location (https://case.edu/medicine/msa-program/washington/).

The network is led by Joseph M. Rifici, CAA, MEd, and Matthew P. Norcia, MD, and the program is housed within the School of Medicine of Case Western Reserve University. Additionally, the MSA Program maintains partnerships with more than 80 affiliate clinical sites across the country. More information can be obtained from our admissions office (https://applygrad.case.edu/register/?id=e5f1a533-09d2-4338-8fcb-0089f4da065c).

Academic Requirements for Admission

The mission of the Master of Science in Anesthesia Program is to graduate skilled and compassionate anesthesiologist assistants. The admission policy reflects this goal. Applicants are considered on a variety of parameters that measure academic ability, communication skills, clinical aptitude, and personality traits.

Admission to the MSA Program requires that the following criteria are met:

1. Bachelor’s degree from an accredited college or university
   Applicants for admission must complete a course of study leading to a baccalaureate degree at an accredited United States, U.S. territory, or Canadian college or university, or its equivalent, prior to matriculation.

2. Prerequisite courses
   Documentation of each of the prerequisites having been completed at an accredited United States, U.S. territory, or Canadian institution of higher learning is required. For those courses that have been repeated, the highest grade will be used in the calculation. Prerequisites include:
   - one semester of biochemistry
   - one year of biology with lab
   - one semester of human anatomy with lab
   - one semester of human physiology
   - one year of chemistry with lab
   - one semester of organic chemistry with lab (a second semester with lab is preferred but not required)
   - one year of physics with lab
   - one semester of calculus
   - one semester of advanced statistics (preferably for the life sciences)
   - one semester of English with expository writing

   All academic requirements must be completed satisfactorily before matriculation.

   Our three key prerequisites – biochemistry, human anatomy with lab, and human physiology – must be taken within 5 years of the application deadline. All other prerequisites must be taken within 7 years of the deadline. These time limits will be waived with a current MCAT score of 500 or higher. A high MCAT score indicates your knowledge of the coursework is still current, and we do not ask that you retake your older coursework.

3. Admissions test
   The MSA Program requires either the MCAT or the GRE, which must be taken within three years of the application deadline. When an applicant has taken the MCAT or GRE more than once, component scores will not be combined. If an applicant has taken both admissions tests, they should submit both official scores for review.

4. Altus Suite - admissions assessments of non-cognitive skills
   All applicants are required to complete Altus Suite (https://takealtus.com/) as part of their application. Altus Suite consists of a two-part online assessment of non-cognitive skills, interpersonal characteristics, and personal values and priorities that we believe are important for successful students and graduates of our program. Altus Suite consists of:
   - Casper: 60-90 minute online situational judgment test (SJT)
   - Snapshot: 10-minute one-way interview with standardized questions

   The program recommends taking Altus Suite before or concurrently with the submission of your application materials.

International Admissions

Applicants with international undergraduate, graduate, or advanced degrees must meet the standard admission requirements.
listed above. International application requirements also include the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS), or the Pearson Test of English (PTE-Academic). An Education Credential Evaluation and Authentication Report for foreign transcripts is required.

The Application Process

All materials must be received by the deadline. Invited candidates participate in interviews with members of the Admissions Committee, which is comprised of faculty and staff members of the MSA Program. Prospective candidates are permitted and encouraged to shadow an anesthetist in the operating room. Prior approval for this visitation is required, and dates are approved and determined by the individual location of study. An overview of the admissions timeline can be viewed here (https://case.edu/medicine/msa-program/admissions/).

Curriculum Overview

The 24-month program includes 70 credit hours (six consecutive semesters) of classroom and clinical instruction. The first three semesters integrate basic science and clinical instruction. During the remaining three semesters, students complete month-long rotations in all subspecialties of anesthesiology: ambulatory surgery, burns and trauma, cardiothoracic surgery, general surgery, neurosurgery, obstetrics, pediatrics, surgical intensive care unit. Clinical training focuses on all types of anesthesia including general, epidural, spinal and peripheral nerve blockade.

Instruction is also provided in advanced patient care monitoring techniques and pre-testing, and in calibration and operation of anesthesia delivery systems and monitors. At CWRU, our personal approach and rigorous educational standards produce compassionate and highly skilled anesthesiologist assistants.

The MSA Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and is based on the Standards for Anesthesiologist Assistant Programs. Graduates sit for the Certification Examination administered by the National Commission for Certification of Anesthesiologist Assistants (NCCAA) and co-sponsored by the National Board of Medical Examiners (NBME).

Additional information may be found on the Master of Science in Anesthesia Program website (http://case.edu/medicine/msa-program/).

Plan of Study

Basic Science Year

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<th>Course</th>
<th>Summer</th>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
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<td>Cardiac Electrophysiology I (ANES 403)</td>
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<td>Patient Monitoring and Instrumentation I (ANES 440)</td>
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<td>Orientation to Clinical Experience (ANES 461)</td>
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<td><strong>Summer Semester I = 9 credits</strong></td>
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Anesthesia Clinical Correlation I (ANES 462)
Anesthesia Clinical Experience I (ANES 463)
Pharmacology for Anesthesiologist Assistants I (ANES 475)
Clinical Decision Making in Anesthesia (ANES 477)
Physiological Model-Based Simulation I (ANES 486)
Anesthesia Non-Technical Skills Lab (ANES 488)

Fall Semester I = 16 credits

Patient Monitoring and Instrumentation II (ANES 441)
Applied Physiology for Anesthesiologist Assistants II (ANES 458)
Anesthesia Clinical Correlation II (ANES 464)
Anesthesia Clinical Experience II (ANES 465)
Pharmacology for Anesthesiologist Assistants II (ANES 476)
Clinical Decision Making in Anesthesia II (ANES 478)
Physiological Model-Based Simulation II (ANES 487)

Spring Semester I = 17 credits

Year Total: 9 16 17

Clinical Year

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<tr>
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<td>Principles of Anesthesia Safety and Science Review II (ANES 581)</td>
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<td>Physiological Model-Based Simulation IV (ANES 585)</td>
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Spring Semester II = 11 credits

ANES 469. Anesthesia Clinical Experience IV. 1 - 10 Units.
A continuation of ANES 467. A comprehensive clinical examination is administered at the end of the semester. Recommended preparation: ANES 467.

ANES 470. Anesthesia Clinical Correlation IV. 1 Unit.

ANES 471. Anesthesia Clinical Experience V. 1 - 10 Units.
A continuation of ANES 469. A comprehensive clinical examination is administered at the end of the semester. Recommended preparation: ANES 469.

ANES 475. Pharmacology for Anesthesiologist Assistants I. 3 Units.
Pharmacodynamics, pharmacokinetics, uptake, distribution and action of the volatile and intravenous anesthetics, muscle relaxants, narcotics, hypnotics and other pharmaceuticals used in the administration of an anesthetic. Prereq: Consent of Department.

ANES 476. Pharmacology for Anesthesiologist Assistants II. 3 Units.
Continuation of ANES 475. Prereq: ANES 475.

ANES 477. Clinical Decision Making in Anesthesia. 3 Units.
An introduction to thinking about clinical situations and problems and coming to safe and effective solutions to these problems. This course focuses on common clinical situations where appropriate decision making is important to the outcome of the case. Numerous areas of medicine and anesthesiology will be covered to provide the student with a wide sampling of decisions made each day with patient care. This course supplements the other courses offered during the spring semester by integrating and applying basic science knowledge to the care of patients. Prereq: Consent of department.
ANES 478. Clinical Decision Making in Anesthesia II. 3 Units.
Guided and targeted discussion on common anesthetic considerations relegated by co-existing disease, comorbidity, anatomy, surgical procedures and common practice. Prereq: ANES 477.

ANES 485. Introduction to Physiological Model-Based Simulation. 1 Unit.
Introduction to physiological model-based simulation using on-screen computer simulation and mannequins. Emphasis is placed on improving appropriate anesthesia-related basic science knowledge, manual skills in anesthesia machine checkout, drug and equipment setup, safety inspections, and performing anesthesia for uncomplicated surgical cases.

ANES 486. Physiological Model-Based Simulation I. 1 Unit.
An extension of ANES 485 with emphasis on improving or exercising knowledge of anesthesia-appropriate basic science, the use of more advanced equipment and techniques for uncomplicated surgical cases with an introduction to crisis management. Recommended preparation: ANES 485.

ANES 487. Physiological Model-Based Simulation II. 1 Unit.
An extension of ANES 486 emphasizing the physical techniques aspects of crisis management, team work and rescue in anesthesia, including support for and review of training in Basic Life Support and Advanced Cardiac Life Support. Recommended preparation: ANES 486.

ANES 488. Anesthesia Non-Technical Skills Lab. 1 Unit.
In this course the student will learn anesthesia non-technical skills, which are used integrally with medical knowledge and clinical techniques. They encompass both interpersonal skills (e.g. communication, team working, leadership) and cognitive skills (e.g. situation awareness, decision making). This course uses modified Crew Resource Management techniques taught in the aviation industry and considers the limitations of human performance and the nature of human error. The goals are to train individuals to avoid, capture and mitigate against the consequences of error. During the course, behaviors shown to minimize errors and maximize patient safety are highlighted and then practiced, with feedback being given to students on their performance.

ANES 490. Ethics, Law and Diversity for Anesthesiologist Assistants. 2 Units.
This course will focus on three topics. First, a discussion of legal practice as it applies to health care including basics of medical jurisprudence, negligence, and how to avoid a lawsuit. Second, a discussion of ethical theory including the principles of medical ethics, do not resuscitate, truth telling, and assessment of competence. Last, a discussion on diversity that will focus on the differences and similarities among people and how these factors influence patient care. The final grade will be based on an essay and a multiple choice exam.

ANES 499. Clinical Remediation. 1 - 10 Units.
(Credit as arranged.) Course offered to the student one time during the program of study which remediates "C" or below work in a clinical course.

ANES 580. Principles of Anesthesia Safety and Science Review I. 1 Unit.
A continuum of online courses over the fall and spring semesters that covers a series of topics in basic medical science with special emphasis in the specialty of anesthesia. Using a well-defined virtual platform, the course combines high-quality realistic practice questions, cognitive research, and individualized student testing behaviors to guide learning and increase performance on high stake medical exams. Regularly scheduled examinations throughout the semester are administered. Prereq or Coreq: ANES 580.

ANES 581. Principles of Anesthesia Safety and Science Review II. 1 Unit.
A continuum of online courses over the fall and spring semesters that covers a series of topics in basic medical science with special emphasis in the specialty of anesthesia. Using a well-defined virtual platform, the course combines high-quality realistic practice questions, cognitive research, and individualized student testing behaviors to guide learning and increase performance on high stake medical exams. Regularly scheduled examinations throughout the semester are administered. Prereq or Coreq: ANES 580.

ANES 584. Physiological Model-Based Simulation III. 1 Unit.
Extension of ANES 487 emphasizing the physical techniques and aspects of crisis management, team work, and rescue in anesthesia. Prereq: ANES 487.

ANES 585. Physiological Model-Based Simulation IV. 1 Unit.
Extension of ANES 584 emphasizing the physical techniques and aspects of crisis management, team work, and rescue in anesthesia. Prereq: ANES 584.

ANES 599. Clinical Remediation. 1 - 10 Units.
(Credit as arranged.) Course offered to the student one time during the program of study which remediates "C" or below work in a clinical course.