ANESTHESIOLOGY (MS)

Contact
University of Colorado Anesthesiologist Assistant Program
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Overview
The University of Colorado Anesthesiologist Assistant Program is a graduate medical education program in the University of Colorado School of Medicine. The Program accepts qualified individuals who desire to undertake rigorous didactic and clinical education in order to become knowledgeable, skilled anesthetists. Applicants must complete a baccalaureate degree in any major field of study from an accredited institution, including above average performance (letter grade of "B-" or higher) in courses required in a premedical curriculum (refer to required courses in the Admissions section). All prerequisite courses must be completed before the program's start date.

Individuals who successfully complete this program are awarded a Master of Science Degree in Anesthesiology by the University of Colorado. In February, June or October of their senior year, students take the National Certifying Examination for Anesthesiologist Assistants. Following graduation and successful completion of the Certifying Examination, graduates can become integral anesthetist members of an anesthesia care team practice lead by an anesthesiologist.

The University of Colorado Anesthesiologist Assistant Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Accreditation Review Committee for the Anesthesiologist Assistant (ARC-AA).

Commission on Accreditation of Allied Health Education Programs
25400 U.S. Highway 19 North, Suite 158
Clearwater, FL 33763
Phone: 727-210-2350
Fax: 727-210-2350
Email: AAProgram@cuanschutz.edu

Admission Requirements

Academic Requirements
In order to enter the Master of Science Program in Anesthesiology, students will need:

• A bachelor's degree from an accredited institution
• An MCAT score attained within 5 years of applying to the program
• Completion of the prerequisite courses noted below
• A minimum of 8 hours of anesthetist shadowing (Applicants are encouraged to fulfill as many hours as possible)

• Background Check administered through the purchase of package code UF28 on CastleBranch.com (https://discover.castlebranch.com/)
• A CASPer online assessment (see Application Process page)

Prerequisite Courses

Documentation that each of the prerequisites listed below has been completed, with a grade of B-minus (2.7) or higher. Substitutions are NOT permitted, and survey courses for non-science majors are NOT acceptable. For those courses that have been repeated, the highest grade will be recognized. We accept courses taken at a four year institution, community college or online as long as they are from an accredited institution. We do not accept home lab kits as part of any course that requires lab.

The prerequisites must be completed within 7 years of the application deadline; however, if a student takes the MCAT and receives a score of 25 or higher (or above the 45th Percentile on the new MCAT) and has been clinically active in a health profession since completing your prerequisites, the 7 year requirement for prerequisites will be waived. (Call or email the office to confirm.)

• English: 1 semester (7 year window DOES NOT APPLY)
• General Biology with Lab: 2 semesters total
  • General Biology I with lab (1 semester)
  • General Biology II with lab (1 semester)
• General Chemistry with Lab: 2 semesters total
  • General Chemistry I with lab (1 semester)
  • General Chemistry II with lab (1 semester)
• Organic Chemistry with Lab: 2 semesters total
  • Organic Chemistry I with lab (1 semester)
  • Organic Chemistry II with lab (1 semester)
• General Physics with Lab: 2 semesters total (trigonometry or calculus based is preferred)
  • General Physics I with lab (1 semester)
  • General Physics II with lab (1 semester)
• Biochemistry: 1 semester
• Statistics: 1 semester
• Human Anatomy and Physiology: 1 semester of combined A&P or 1 semester each of Human Anatomy and Human Physiology (Courses in vertebrate embryology and developmental anatomy or mammalian physiology and embryology will NOT satisfy this requirement.)
• Cellular and Molecular Biology: Preferred, but not required

Advanced placement credit for prerequisite coursework that appear in official transcripts may be considered based on courses, scores, and student's overall undergraduate performance.

Credit Conversion Policy

The University of Colorado uses a semester system; however, the university does accept quarter credit hours. Quarter credit hours are worth 2/3 of 1 semester hour. (One semester is approximately 4-5 quarter hours, and two semesters is 9 quarter hours.) Quarter credit hours may be rounded to the nearest whole number at the discretion of the admissions committee with consideration given to the course work and grade earned.

Test Scores

• Background Check administered through the purchase of package code UF28 on CastleBranch.com (https://discover.castlebranch.com/)
• A CASPer online assessment (see Application Process page)
Medical College Admission Test (MCAT) scores from within five years of the application cycle year. The applicant must have MCAT score reports sent to CASAA. A Score of 25 or higher on the MCAT will be considered competitive using the pre-2015 version. Scores in the 45th percentile or higher on the new MCAT2015 Exam will be considered competitive for current test-takers. The GRE will NOT be accepted in place of the MCAT.

Shadowing Experience

Applicants to the program must be familiar with the practice of anesthesia, including related activities in the operating room. Individuals applying to the program must spend at least 8 hours with an anesthetist or an anesthesiologist in an operating room environment observing the conduct of anesthesia. Applicants who meet the minimum requirement will be considered for admission, but additional hours are strongly suggested. The applicant is encouraged to visit a local hospital and ask to speak with the anesthesiologist who directs the department of anesthesia.

The Documentation of Familiarity with Anesthesia Form (https://www.ucdenver.edu/docs/libraries/provider54/education-aa-program/ucd-aa-program-documentation-of-familiarity-with-anesthesia-practice-form.pdf?sfvrsn=acede4b9_2) must be submitted as part of the application to verify the number of hours that the applicant has spent in the OR.

Background Check

A certified background check must be completed at the time of application. You will not be invited for an interview unless a background check from CastleBranch (https://portal.castlebranch.com/UF28/) has been completed. Make sure that you ONLY purchase the UF28 Package Code (Background Check). Do not purchase any of the other packages at this time (UF28a, UF28dt, UF28r).

Foreign Graduate Admission

No exemptions will be made for required course work regardless of degrees or certification received outside the United States, experience, work background, or education. In addition to the General Admission Requirements (above), the applicant who has graduated from a college or university outside of the United States regardless of United States’ residency status must do the following (not necessary for United States Territories):

• Official transcripts of all undergraduate and graduate course work taken outside the United States must be submitted to the program, along with the report from a credentialing organization (e.g. Educational Credential Evaluators, Incorporated) demonstrating equivalency to a Bachelor’s degree received at an American college or university, and evaluating the transcript course-by-course for equivalency to required prerequisites for admission to the Anesthesiologist Assistant Program. This is the first step that you are responsible for.

• A statement from a responsible person certifying that the applicant’s financial resources are sufficient to meet necessary expenses (International Students only). Deficiencies in required course work must be made up by taking appropriate courses in a college or university in the United States.

• A statement from a qualified physician describing any emotional or physical illnesses suffered by applicant during the preceding five years, or certifying freedom from such illnesses (International Students only).

• A photocopy of the student’s passport to provide proof of birth date and citizenship (students outside the United States who have not yet acquired a passport will need to submit a copy of their birth certificate).

• For all applicants residing in the United States at the time of application: a photocopy of the visa page contained within the student’s passport, as well as a photocopy of the student’s I/94 arrival departure record (both sides).

• For all applicants residing in the United States at the time of application in either F, M, or J non-immigrant classification: written confirmation of non-immigrant status at previous school attended before transferring to the University of Colorado Denver.

• Proof of health insurance. Students who do not possess health insurance upon applying to the University of Colorado must be prepared to purchase health insurance through an approved provider upon commencement of studies.

• If an international student is transferring from a college or university in the United States, the international Student Transfer Clearance Form is also required.

• All documentation must be submitted to the University of Colorado registration office 30 days prior to a term’s registration date for acceptance for that term. The University reserves the right to update these admissions requirements; subject to current federal regulations concerning the enrollment of nonimmigrant alien students. The University of Colorado is authorized under federal law to admit non-immigrant alien students.

In addition to the General Admission Requirements (above), the applicant who has graduated from a college or university of a country for which English is not the primary language, regardless of United States residency status, must do the following:

Students must obtain minimum scores listed below for each section of the Test of English as a Foreign Language (TOEFL). Scores must be from an exam taken within 7 years of application to the program. The program must receive an official score report directly from Educational Testing Services, Princeton, NJ.

Transfer Admission

As providers of anesthesiologist assistant profession training, the program’s primary responsibility is to offer such training to any person who meets the admission requirements. However, program format and enrollment constraints usually do not permit acceptance of transfer applicants.

Application Process

2. Choose the University of Colorado, Denver from the list of programs.
3. Complete all four sections of the application (Personal Information, Academic History, Supporting Information, and Program Materials). The Program Materials section is specific to our program.
4. The references portion is called Evaluations and is located in the Supporting Information section. You are required to have a minimum of 3 evaluations. Once you have saved an electronic evaluation, an email request will automatically be sent to the
evaluator on your behalf. Please advise your evaluator to look for this email in their inbox, as well as their spam or junk mail folder, as emails do occasionally get filtered out.

5. Please use updated transcripts to complete the online application. If a course is “In Progress” at the time of application, enter the letters “IP” for that course when entering Prerequisite Courses.

6. In the Program Materials section you will need to upload:
   • A CV/Resume (include any medical experience you may have)
   • Documentation of Familiarity with Anesthesia Form (https://www.ucdenver.edu/docs/librariesprovider54/education-aa-program/ucd-aa-program-documentation-of-familiarity-with-anesthesia-practice-form.pdf?sfvrsn=acede4b9_2)
     • upload under SHADOWING/HEALTHCARE HOURS
   • combine multiple forms into a single file
   • Documentation Concerning Technical Standards Form (https://www.ucdenver.edu/docs/librariesprovider54/education-aa-program/ucd-aa-program-technical-standards-form.pdf?sfvrsn=5ade4b9_2)
     • upload under OTHER
   • Criminal Background Check Release Form (https://www.ucdenver.edu/docs/librariesprovider54/education-aa-program/background-check-release-form-on-website--castlebranch-5-3-19.pdf?sfvrsn=7dede4b9_2)
     • upload under OTHER
   • Drug Screen Release Form (https://www.ucdenver.edu/docs/librariesprovider54/education-aa-program/ucd-aa-program-drug-testing-release-form.pdf?sfvrsn=d2ede4b9_2)
     • upload under OTHER

7. Please note, you will be sending CASAA your official transcripts and MCAT score report from AAMC, not the Program Office. The Program Office will only need these items from you in the event that you are accepted into the Program.

8. In addition to the CASAA application, applicants must complete the CASPer online assessment. Successful completion of CASPer is mandatory in order to maintain admission eligibility. Information regarding this mandatory assessment is below.

### The CASPer Test - Computer-Based Assessment for Sampling Personal Characteristics

CASPer is an online test which assesses for non-cognitive skills and interpersonal characteristics that we believe are important for successful students and graduates of our program, and will complement the other tools that we use for applicant screening. In implementing CASPer, we are trying to further enhance fairness and objectivity in our selection process.

In order to take CASPer, you will be responsible for securing access to a computer with audio capabilities, a webcam, and a reliable internet connection on your selected test date. CASPer can be taken practically anywhere that you can satisfy the aforementioned requirements. No exceptions will be provided for applicants unable to take CASPer online due to being located at sites where internet is not dependable due to technical or political factors.

Please go to www.takeCASPer.com (https://takecasper.com/) to sign up and reserve a test using your CASAA Applicant ID and a piece of government-issued photo ID. You will be provided with a limited number of testing dates and times. Please note that these are the only testing dates available for your CASPer test. There will be no additional tests scheduled. Please use an email address that you check regularly; there may be updates to the test schedule.

Please direct any inquiries on the test to support@takecasper.com. Alternatively, you may use the chat bubble in the bottom right hand corner of your screen on the takecasper.com website.

The CASPer test is comprised of 12 sections of video and written scenarios. Following each scenario, you will be required to answer a set of probing questions under a time contract. The test typically takes between 75-90 minutes to complete. Each response is graded by a different rater, giving a very robust and reliable view of personal and professional characteristics important to our program. No studying is required for CASPer, although you may want to familiarize yourself with the test structure at takeCASPer.com (https://takecasper.com/), and ensure you have a quiet environment to take the test.

CASPer test results are valid for one admissions cycle. Applicants who have already taken the test in previous years will need to re-take it.

### Course Matrix

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANMS 5000</td>
<td>Orientation to Anesthesia</td>
<td>1</td>
</tr>
<tr>
<td>ANMS 5001</td>
<td>Introduction to Clinical Anesthesia</td>
<td>2</td>
</tr>
<tr>
<td>ANMS 5005</td>
<td>Principles of Airway Management</td>
<td>2</td>
</tr>
<tr>
<td>ANMS 6801</td>
<td>MSA-1 Seminar I</td>
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</tr>
<tr>
<td>ANMS 5300</td>
<td>Applied Neurophysiology</td>
<td>2</td>
</tr>
<tr>
<td>ANMS 6701</td>
<td>Anesthesia Non-Technical Skills &amp; Wellness I</td>
<td>1</td>
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<tr>
<td>ANMS 5009</td>
<td>Anesthesia Monitoring and Delivery Systems</td>
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<tr>
<td>ANMS 5006</td>
<td>Simulation and Skills Laboratory I</td>
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<td>ANMS 5007</td>
<td>Fundamentals of Anatomy &amp; Physiology for Anesthetists</td>
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<tr>
<td>ANMS 5008</td>
<td>Clinical Anesthesiology I</td>
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<td><strong>Total Hours</strong></td>
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<th>Hours</th>
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<tr>
<td><strong>Spring</strong></td>
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<tr>
<td>ANMS 5011</td>
<td>Anesthesia Principles and Practice I</td>
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<tr>
<td>ANMS 5013</td>
<td>Patient Monitoring II</td>
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<tr>
<td>ANMS 5016</td>
<td>Simulation and Skills Laboratory II</td>
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</tr>
<tr>
<td>ANMS 5018</td>
<td>Clinical Anesthesiology II</td>
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<tr>
<td>ANMS 5021</td>
<td>Anesthesia Principles and Practice II</td>
<td>2</td>
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<tr>
<td>ANMS 5100</td>
<td>Cardiovascular Physiology</td>
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<td>ANMS 5200</td>
<td>Pharmacology I</td>
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<td>Liver, Endocrine, and Renal Physiology</td>
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<tr>
<td>ANMS 5007</td>
<td>Fundamentals of Anatomy &amp; Physiology for Anesthetists</td>
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<td>ANMS 6811</td>
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<td>ANMS 6711</td>
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<td><strong>Total Hours</strong></td>
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### Course Title Hours

#### First Year

**Summer**
- ANMS 5021: Anesthesia Principles and Practice II 2
- ANMS 5013: Patient Monitoring II 2
- ANMS 5400: Respiratory Physiology 2
- ANMS 5002: Perioperative Medicine 2
- ANMS 5210: Pharmacology II 2
- ANMS 5501: Anesthesia and Co-Existing Diseases I 2
- ANMS 5026: Simulation and Skills Laboratory III 1
- ANMS 5028: Clinical Anesthesiology III 7.5

**Total Hours** 23.5

#### Second Year

**Fall**
- ANMS 6031: Anesthesia Principles and Practice III 2
- ANMS 6110: Hepatic and Maternal-Fetal Physiology 2
- ANMS 6220: Pharmacology III 2
- ANMS 6511: Anesthesia and Co-Existing Diseases II 2
- ANMS 6038: Clinical Anesthesiology IV 7.5
- ANMS 6831: MSA-1 Seminar IV 1

**Total Hours** 16.5

**Spring**
- ANMS 6311: Senior Seminar II 2
- ANMS 6212: Senior Project II 1
- ANMS 6058: Clinical Anesthesiology VI 10

**Total Hours** 13

#### Third Year

**Fall**
- ANMS 6321: Senior Seminar III 2
- ANMS 6221: Senior Project III 1

### ANMS 6068 - Clinical Anesthesiology VII 10

#### Hours 13

Total Hours 13

- **ANMS 5000 - Orientation to Anesthesia (1 Credit)**
  - Overview of basics of anesthesia to familiarize the student to basic competencies prior to their first clinical day. Topics covered include: medical terminology, pharmacology, anesthesia machine, basic monitoring, anesthesia care plans, drug dosing and calculations. Requisite: Must be admitted to MSA Program. Grading Basis: Letter Grade Typically Offered: Fall.

- **ANMS 5001 - Introduction to Clinical Anesthesia (2 Credits)**
  - Introduction to induction, maintenance, and emergence from anesthesia, history and types of anesthesia, universal precautions, infection control, OR layout, sterile fields and techniques, patient interaction, starting intravenous catheters and arterial cannulation, obtaining arterial blood samples, and applying ASA-standard monitors. Requisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade Typically Offered: Fall.

- **ANMS 5002 - Perioperative Medicine (2 Credits)**
  - A course on preoperative evaluation of the patient based on patient and surgery risk factors. Small group application of patient history and physical taking will also be utilized to allow students to apply concepts learned in class. Requisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade Typically Offered: Summer.

- **ANMS 5005 - Principles of Airway Management (2 Credits)**
  - Structure, function, pathophysiology, disease and management of the human airway. Basic and advanced principles of airway management, elective and emergent will be covered, including equipment and techniques. Examination, recognition, techniques and management involved in pediatric/adult difficult airways. Includes lab. Requisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade Typically Offered: Fall.

- **ANMS 5006 - Simulation and Skills Laboratory I (1 Credit)**
  - Exploration of pulse oximetry, capnography, blood pressure monitoring systems, anesthesia delivery systems, breathing circuits, fresh gas flow effect, theory of dilutional methods of cardiac output monitoring, and relations between mean circulatory filling pressures and central venous pressure using anesthesia simulator. Requisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade Typically Offered: Fall.

- **ANMS 5007 - Fundamentals of Anatomy & Physiology for Anesthetists (4 Credits)**
  - Gross structures of the human body will be covered while integrating topographic and radiographic anatomy to stress the application and importance of clinical anatomy. This course will also develop the knowledge of the human anatomy necessary for the practice of anesthesia. Requisite: Must be admitted to MMS Program. Grading Basis: Letter Grade Typically Offered: Spring.
ANMS 5008 - Clinical Anesthesiology I (5 Credits)
Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 5009 - Anesthesia Monitoring and Delivery Systems (4 Credits)
Students will learn about basic monitors related to the practice of anesthesia, including ECG, NIBP, SpO2, respiratory gas analysis, temperature monitoring and other standard monitors. Students will be fluent in the interpretation of data from these basic monitors. They will also learn about anesthesia delivery systems including principles of ventilator function, breathing circuit configurations, and safety features of the operative setting including scavenging systems, machine checkout, and line isolation monitors.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 5011 - Anesthesia Principles and Practice I (2 Credits)
Principles involved in the formulation of anesthetic plans based upon data obtained during the preoperative evaluation, including the formulation and practices of different anesthetic plans and techniques as related to specific surgical procedures and pathophysiology. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 5013 - Patient Monitoring II (2 Credits)
More advanced monitoring including, BIS, SvO2, arterial and central pressure monitoring, basics of ultrasound, advanced ECG and ST analysis. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Spring.

ANMS 5016 - Simulation and Skills Laboratory II (1 Credit)
Application of patient monitoring, clinical anesthesia practice and use of a high fidelity patient simulation environment will be covered. Students will utilize critical thinking skills to fully integrate didactic knowledge in patient care situations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Spring.

ANMS 5018 - Clinical Anesthesiology II (5 Credits)
Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Spring.

ANMS 5021 - Anesthesia Principles and Practice II (2 Credits)
Practical principles, application, and interpretation of various monitoring modalities including ECG, invasive and non-invasive blood pressure, oximetry, cardiac output, respiratory gas analysis, respiration, and instrumentation as they pertain to anesthesia practice. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Summer.

ANMS 5026 - Simulation and Skills Laboratory III (1 Credit)
Application of patient monitoring, clinical anesthesia practice and use of a high fidelity patient simulation environment will be covered. Students will utilize critical thinking skills to fully integrate didactic knowledge in patient care situations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Summer.

ANMS 5028 - Clinical Anesthesiology III (7.5 Credits)
Developmental skills and foundations of the clinical practice of anesthesia will be gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Summer.

ANMS 5100 - Cardiovascular Physiology (2 Credits)
Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Spring.

ANMS 5200 - Pharmacology I (2 Credits)
General pharmacologic concept, membrane receptor, transport, biotransformation, pharmacokinetics and pharmacodynamics will be covered. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Spring.

ANMS 5210 - Pharmacology II (2 Credits)
Covers drugs that include inhaled anesthetics, opioids, barbiturates, benzodiazepines, anticholinesterases and anticholinergics, neuromuscular blockers, adrenergic agonists and antagonists, non-steroidal anti-inflammatory drugs, antiarrhythmics, calcium channel blockers, diuretics, anticoagulants, antihistamines, and antimicrobials. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Summer.

ANMS 5300 - Applied Neurophysiology (2 Credits)
Basic science instruction utilizing systems based approach on human physiology. Prerequisite: Must be admitted to MSA Program
Grading Basis: Letter Grade
Typically Offered: Fall.
ANMS 5400 - Respiratory Physiology (2 Credits)
Physiology and pathophysiology of disease associated with the pulmonary system. Specific instruction on common disease states, restrictive and obstructive pulmonary disorders, mechanical ventilation, arterial blood gas analysis and how these concepts apply to patient under anesthesia care will be covered. Prerequisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade
Typically Offered: Spring.

ANMS 5500 - Liver, Endocrine, and Renal Physiology (2 Credits)
Physiology and pathophysiology of disease associated with the renal system. This includes specific instruction on common disease states, pre renal, intra renal and post renal failure. Prerequisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade
Typically Offered: Spring.

ANMS 6002 - Wellness and Professionalism (1 Credit)
This is a one credit hour course. Class time will be alternated weekly between Wellness and Professionalism. The Wellness portion is designed to provide anesthesia students with the tools necessary to navigate the demanding nature of an intense medical graduate program. The Professionalism portion is designed to provide anesthesiologist assistant students with the information necessary to develop as professionals as well as high performing anesthesiologist assistant students. Prerequisite: Must be admitted to MMS Program. Department consent required. Grading Basis: Pass/Fail Only
Typically Offered: Fall.

ANMS 6007 - Applied Clinical Anatomy & Physiology for Anesthetists (2 Credits)
Gross structures of the human body will be covered while integrating topographic and radiographic anatomy to stress the application and importance of clinical anatomy. This course will also develop the knowledge of the human anatomy necessary for the practice of anesthesiology. Prerequisite: Must be admitted to MS-Anesthesiology Program
Grading Basis: Letter Grade
Typically Offered: Summer.

ANMS 6031 - Anesthesia Principles and Practice III (2 Credits)
This is a course on improving system-based learning and practice. Prerequisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6038 - Clinical Anesthesiology IV (7.5 Credits)
Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department consent required. Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6058 - Clinical Anesthesiology VI (10 Credits)
Clinical experience in required rotations through anesthesia subspecialty areas. Two#week and four#week interval rotations assigned, and will require call during some nights and weekends. Clinical practice gained through one on one supervised instruction in operating room and other ancillary anesthetizing locations. Prerequisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade
Typically Offered: Summer.

ANMS 6068 - Clinical Anesthesiology VII (10 Credits)
Clinical experience in required rotations through subspecialty anesthesia areas. Rotations assigned in two#week and four#week intervals, and will require call during some nights and weekends. Clinical practice gained through one on one supervised instruction in the operating room and other ancillary anesthetizing locations. Prerequisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6110 - Hepatic and Maternal-Fetal Physiology (2 Credits)
Pathophysiology in a systems approach: cardiovascular, emphasizing hemodynamics, Starling forces, pulmonary responses, renal hemodynamics, temperature regulation, blood gases/pH, and maternal and fetal physiology. Emphasizes systems which affect evaluation and planning for anesthesia and systems affected by anesthesia administration. Prerequisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6201 - Senior Project I (1 Credit)
Each student will develop a senior year project with the help of a faculty mentor. Project will be research, process, or quality improvement related. Prerequisite: Must be admitted to MMS Program. Department Consent Required. Grading Basis: Letter Grade
Typically Offered: Spring.
ANMS 6212 - Senior Project II (1 Credit)
Each student will develop a senior year project with the help of a faculty mentor. Project will be research, process, or quality improvement related. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Summer.

ANMS 6220 - Pharmacology III (2 Credits)
This is a continuation of anesthesia specific pharmacology. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6221 - Senior Project III (1 Credit)
Each student will develop a senior year project with the help of a faculty mentor. Project will be research, process, or quality improvement related. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6301 - Senior Seminar I (2 Credits)
Each student will be required to research, prepare, and present on clinical challenges of different clinical scenarios. Each case will be analyzed and discussed by the group with faculty participation. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6311 - Senior Seminar II (2 Credits)
Each student will be required to research, prepare and present on clinical challenges of different clinical scenarios. Each case will be analyzed and discussed by the group with faculty participation. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Spring.

ANMS 6321 - Senior Seminar III (2 Credits)
Each student will be required to research, prepare and present on clinical challenges of different clinical scenarios. Each case will be analyzed and discussed by the group with faculty participation. Prerequisite: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Summer.

ANMS 6511 - Anesthesia and Co-Existing Diseases II (2 Credits)
Continuation of Anesthesia and Co-Existing Diseases I. Focuses on anesthetic considerations that must be accounted for in patients with co-existing diseases due to physiological changes. Disease states include ischemic heart disease, valvular heart disease, systemic hypertension, pulmonary hypertension, coagulation disorders, etc. Prerequisites: Must be admitted to MMS Program. Department Consent Required.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6701 - Anesthesia Non-Technical Skills & Wellness I (1 Credit)
(ANTS) will examine and develop an understanding of medical errors, situational awareness, decision making, leadership, management of stress and fatigue. In addition this course will cover pedagogical principles in medical education and professionalism, all of which are integral in developing well-rounded and adaptable clinicians. Requisite: Must be admitted to MSA Program.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6711 - Anesthesia Non-Technical Skills & Wellness II (1 Credit)
(ANTS) will examine and develop an understanding of medical errors, situational awareness, decision making, leadership, management of stress and fatigue. In addition this course will cover pedagogical principles in medical education and professionalism, all of which are integral in developing well-rounded and adaptable clinicians. Requisite: Must be admitted to MSA Program.
Grading Basis: Letter Grade
Typically Offered: Spring.

ANMS 6801 - MSA-1 Seminar I (1 Credit)
An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6811 - MSA-1 Seminar II (1 Credit)
An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar.
Grading Basis: Letter Grade
Typically Offered: Fall.

ANMS 6821 - MSA-1 Seminar III (1 Credit)
An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar.
Grading Basis: Letter Grade
Typically Offered: Summer.

ANMS 6831 - MSA-1 Seminar IV (1 Credit)
An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar.
Grading Basis: Letter Grade
Typically Offered: Fall.

School of Medicine Deferment Policy

Students can request an opportunity to defer in writing. Normally, deferrals are granted for unusual or mitigating circumstances that create challenges for a student to enter the Master of Science in Anesthesiology at that time. Also some “once in a lifetime opportunities” may arise, making a request to defer reasonable. Some examples include difficult family circumstances, birth of a child, participation in the Olympics, a Fulbright Scholarship opportunity, Teach for America, etc. Students should enter when they have achieved a high degree of readiness to engage fully in the Anesthesiologist Assistant Program. The AA Program Directors will decide whether to grant the deferral.

If a student is a non-resident at the time of initial acceptance, it is not possible to move to Colorado and during the year of deferral become a Colorado resident. There are certain requirements regarding deferral that must be met:
• Student must complete the majority of paperwork as if entering in the year for which they applied and pay the $1000 deposit.
• For the actual year in which the student plans to enter, a CASAA application must be completed. If the student makes an application for deferral and it is granted, the student will be in a category of “deferred/delayed admission.”
• Deferrals are for one year period only.
• The deadline for a requested deferral is May 1st of the year in which the student is scheduled to start. Deferrals after that date will not be accepted.

Program Leadership

Vesna Jevtovic-Todorovic, MD, PhD, MBA (https://som.ucdenver.edu/Profiles/Faculty/Profile/24033/)
Chair, Department of Anesthesiology

Melanie Donnelly, MD, MPH, MBA (https://som.ucdenver.edu/Profiles/Faculty/iframeProfile/22713/)
Medical Director

Jillian Vitter, MD (https://www.cudoctors.com/Find_A_Doctor/Profile/25689/)
Associate Medical Director

Ann-Michael Holland, CAA, MMSc (https://som.ucdenver.edu/Profiles/Faculty/Profile/23030/)
Program Director

Felix De Clercq, CAA (https://som.ucdenver.edu/Profiles/Faculty/Profile/36398/)
Associate Program Director

Erin Stewart, MD, MS (https://www.cudoctors.com/Find_A_Doctor/Profile/29005/)
Medical Director of Simulation

Sam Lee, CAA, MSA (https://www.cudoctors.com/Find_A_Doctor/Profile/25583/)
Director of Simulation

Amy Hebbert
Lead Program Coordinator

Aislinn Lederman
Program Coordinator

Student Learning Outcomes

The Master of Science in Anesthesiology/MSA Program prepares students to be competent entry-level Anesthesiologist Assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

Competency Based Learning Objectives

Domain I: Cognitive (Knowledge)

Medical Knowledge – Students will have a mastery of the practice of Anesthesiology and be conversant in its subspecialties.

Systems-Based Practice – Students will demonstrate an understanding of university-based anesthesiology practice, including its interactions with other specialties, both medical and surgical. Students will practice cost-effective health care and resource allocation through evidence-based medical practice that does not compromise quality of care.

Domain II: Psychomotor (Skills)

By the end of the curriculum, the MSA students will have the psychomotor skills and demonstrate the proper technique of; IV placement, intubation with various airway devices, arterial and central line placement, and spinal and epidural placement.

Skills in these techniques will be established through:

Entry Level Skills Mastery – Students will be able to demonstrate a comprehensive knowledge of the practice of anesthesiology and its subspecialties through supervised clinical experiences and be able to perform as an entry-level anesthesiologist assistant.

Practice-Based Learning & Improvement – Students will be adept at gathering current information on their own, and will be able to judge the quality of this information as it pertains to their clinical milieu.

Domain III: Affective (Behavior)

By the end of the curriculum the MSA students will be; consummate professionals, passionate members of the patient care team, life-long learners, and patient care quality advocates.

Students will develop these skills through:

1. Patient Care – Students will train to become compassionate, efficient, and effective CAAs that maintain a constant focus on patient safety.
2. Interpersonal & Communications Skills – Students will have the ability to communicate needs efficiently and clearly (both verbally and in writing) to anesthesiologists, surgeons, patients, patient families, peers and all perioperative staff.
3. Professionalism – Students will demonstrate the ability to interact professionally with the OR staff, and will maintain a professional image at all times, especially with respect to patients and their visiting family members.

Upon completion of the M.S. in Anesthesiology/MSA Program, students will be able to:

1. Evaluate patient medical history
2. Perform a physical examination
3. Understand the risks related to surgery
4. Formulate a safe and cost-effective anesthetic plan based on medical history, physical examination and type of surgery
5. Have the knowledge base to understand patient physiology and pathophysiology, pharmacology related to anesthesia
6. Have the knowledge base to appropriately respond to changes of patient condition during surgery
7. Use electronic medical record appropriately
8. Create a preoperative evaluation, intraoperative chart and a postoperative note in electronic medical record
9. Will be able to perform sedation, regional and general anesthesia safely and cost-effectively