

# ANESTHESIA (ANESTH)

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## Courses

ANESTH 5505 Anatomy for Anesthesiologist Assistants I Credit: 1

This course is designed to meet the needs of students seeking a Master of Science in Anesthesia degree at UMKC. A thorough understanding of anatomy provides a basic foundation for future coursework and for the profession of Anesthesiologist Assistant. This course covers gross anatomy from a regional (or systemic in some cases) perspective bringing together all body systems present in each defined area of study.

**Prerequisites:** Acceptance to the MSA program.

ANESTH 5506 Anatomy for Anesthesiologist Assistants II Credit: 1

Students learn the anatomy, indications for, needle insertion technique, complications, contraindications, and dosing for the following peripheral nerve blocks: upper extremity blocks (interscalene, supraclavicular, infraclavicular, axillary musculocutaneous, wrist, digital), lower extremity blocks (femoral, fascia iliaca, adductor canal, IPACK, sciatic/popliteal, SPEDI, ankle), abdominal blocks (TAP, QL, rectus sheath, ilioinguinal/iliohypogastric), blocks of the chest wall (intercostal, paravertebral, PECS, serratus plane, erector spinae plane, transversus thoracic muscle plane), cervical plexus block, and airway blocks for awake intubation. Students also learn the principles of ultrasonography and the ultrasound monitor, and an ultrasound machine will be used to identify anatomy for a variety of clinical procedures, including intravenous line placement, central line placement, arterial line placement, and peripheral nerve block placement. Basic chest X-ray diagnostics are also taught.

**Prerequisites:** M.S. Anesthesia student

ANESTH 5518 Professionalism for the Anesthesiologist Asst I Credits: 0.5

Introduction to legal and ethical areas of Anesthesiologist Assistant practice; professional behavior, legal obligations of anesthesiologists and patient, and social and community contexts of health care.

**Prerequisites:** Acceptance to the MSA program.

ANESTH 5528 Professionalism for the Anesthesiologist Asst II Credit: 1

Students gain experience with professionalism and communication related topics and practice skills related to professional advocacy, lifelong learning, communication, evidence-based medicine, self-care wellness.

**Prerequisites:** Enrolled in the MSA program.

ANESTH 5538 Professionalism for the Anesthesiologist Asst III Credits: 0.5

Special topics in Anesthesiologist Assistant practice; principles of evidence based medicine and approaches to mastering life long learning and maintaining professional competencies.

**Prerequisites:** Acceptance to the MSA program.

ANESTH 5540 Patient Monitoring and Instrumentation Credits: 3

This is a three credit hour course which integrates concepts of circuits and engineering with the clinical application of anesthesia instrumentation. To the extent possible, the material covered will be directly linked to clinical scenarios. In order for the monitors to be fully understood from a clinical management perspective, relevant physiology related to the monitors and to the field of anesthesia will be taught and practiced. In addition to the monitors, students will gain an in depth understanding of all parts of the anesthesia machine, anesthesia circuits, central line and arterial line equipment, and the properties of common intravenous and inhalational anesthetics.

ANESTH 5541 Methods of Anesthesia I Credits: 2

In this course, students will be prepared to give safe anesthesia in all types of cardiac surgery, learn how to interpret arterial blood gases, and obtain an in depth understanding of ACLS principles so that they will be prepared for any resuscitation scenario in the OR. A cardiac drug card will be administered. Videos and PPTs will be administered to help students understand the concepts of ACLS, acid base management, cardiac bypass, cardiac surgery monitoring, techniques, and anesthetic management.

**Prerequisites:** ANESTH 5540.

ANESTH 5556 Physiology for Anesthesiologist Assistants I Credits: 3

This course is the first of two parts of a human physiology series. The course is designed to provide an understanding of basic neurophysiology, autonomic nervous system, muscle, blood, respiratory and cardiovascular physiology. Topics of special interest to anesthesiologist assistants will be highlighted.

ANESTH 5557 Physiology for Anesthesiologist Assistants II Credits: 2

This course is the 2nd of two parts of a human physiology series. The course is designed to provide an understanding of endocrine, reproductive, neonatal, gastrointestinal, and neurophysiology. Topics of special interest to anesthesiologist assistants will be highlighted as it relates to the physiology.

**Prerequisites:** ANESTH 5556.

**ANESTH 5558 Anesthesia & Co-existing Disease I Credits: 2**

This course provides an essential anesthesia link to the basic anatomy and physiology classes in the Masters of Science in Anesthesia program. The content outline intentionally corresponds with and builds upon that of the Physiology for Anesthesiologist Assistants coursework. This course focuses on primary cardiac, respiratory and endocrine coexisting diseases that affect anesthetic care. It provides for the student a strategic plan in the management of patients with these disease processes.

**Prerequisites:** ANESTH 5556.

**ANESTH 5559 Anesthesia & Co-existing Disease II Credits: 2**

This is the second course that establishes an essential anesthesia link to the basic anatomy and physiology classes in the Masters of Science in Anesthesia program. The content outline intentionally corresponds with and builds upon that of the Physiology for Anesthesiologist Assistants coursework. This course focuses on a variety of coexisting diseases states but all focuses on pediatric and obstetric co-existing disease and how they affect anesthesia management.

**Prerequisites:** ANESTH 5558.

**ANESTH 5560 Introduction to Anesthesia Credits: 2**

Introduction to basic concepts dealing with clinical anesthesia. Medical terminology, human anatomy, medical chart interpretation and drug dosage calculations.

**ANESTH 5561 Introduction to Anesthesia Clinical Experience Credits: 3**

Students are introduced to patient care experience in the operating room. Clinical experience focuses on orientation to the OR, application of medical knowledge to the clinical setting, and introduction to performing basic tasks and patient management skills with frequent assistance according to the UMKC MSA Program Competencies for Spring Semester I.

**Prerequisites:** Enrolled in MS Anesthesia program

**ANESTH 5562 Anesthesia Clinical Correlation I Credit: 1**

This course is designed to support students in their preparation for the NCCAA examination.

**ANESTH 5563 Anesthesia Clinical Experience I Credits: 4**

Students gain clinical and professional experience in the operating room and demonstrate competency consistent with time and place in the program. Students train one on one with a Certified Anesthesiologist Assistant or Anesthesiologist clinical supervisor while obtaining these goals. Students will also complete a specific IV, pre-surgical testing and post anesthesia care unit rotation.

**Prerequisites:** ANESTH 5561.

**ANESTH 5564 Anesthesia Clinical Correlation II Credit: 1**

This course is designed to support students in their preparation for the NCCAA examination.

**ANESTH 5565 Anesthesia Clinical Experience II Credits: 8**

Students gain clinical and professional experience in the operating room and demonstrate competency consistent with time and place in the program. Students train one on one with a Certified Anesthesiologist Assistant or Anesthesiologist clinical supervisor while obtaining these goals. Students will also complete a specific IV, pre-surgical testing and post anesthesia care unit rotation.

**ANESTH 5567 Anesthesia Clinical Experience III Credits: 4**

Students are in the operating room (OR) five days per week and will be supervised one on one with a Certified Anesthesiologist Assistant or Anesthesiologist. Upon completion of the clinical phase, students will gain experience in all required anesthesia clinical subspecialties, procedures, and obtain required clinical hours. Students are expected to perform program competencies with the level of assistance defined for the cohort's specific clinical phase.

**Prerequisites:** ANESTH 5565

**ANESTH 5568 Anesthesia Clinical Correlation III Credit: 1**

This course is designed to support students in their preparation for the NCCAA examination.

**ANESTH 5569 Anesthesia Clinical Experience IV Credits: 4**

Students are in the operating room (OR) five days per week and will be supervised one on one with a Certified Anesthesiologist Assistant or Anesthesiologist. Upon completion of the clinical phase, students will gain experience in all required anesthesia clinical subspecialties and procedures, and obtain required clinical hours. Students are expected to perform program competencies with the level of assistance defined for the cohort's specific clinical phase.

**ANESTH 5570 Anesthesia Clinical Correlation IV Credit: 1**

This course is designed to support students in their preparation for the NCCAA examination.

**ANESTH 5571 Anesthesia Clinical Experience V Credits: 4**

Students are in the operating room (OR) five days per week and will be supervised one on one with a Certified Anesthesiologist Assistant or Anesthesiologist. Upon completion of the clinical phase, students will gain experience in all required anesthesia clinical subspecialties and procedures, and obtain required clinical hours. Students are expected to perform program competencies with the level of assistance defined for the cohort's specific clinical phase.

**ANESTH 5573 Anesthesia Clinical Experience VI Credits: 4**

Students are in the operating room (OR) five days per week and will be supervised one on one with a Certified Anesthesiologist Assistant or Anesthesiologist. Upon completion of the clinical phase, students will gain experience in all required anesthesia clinical subspecialties and procedures, and obtain required clinical hours. Students are expected to perform program competencies with the level of assistance defined for the cohort's specific clinical phase.

**Prerequisites:** Enrolled in MS Anesthesia program

**ANESTH 5575 Pharmacology for Anesthesiologist Assistants I Credits: 2**

Basic concepts in pharmacology: principles of drug action, receptor theory, pharmacokinetics, pharmacodynamics and drug dose calculations. The course will emphasize the primary medications used to provide anesthesia and to support patients during the perioperative period.

**ANESTH 5576 Pharmacology for Anesthesiologist Assistants II Credit: 1**

This course prepares students to apply knowledge of pharmacotherapy to anesthesia care by taking into account type of surgery and patient coexisting diseases.

**ANESTH 5577 Methods of Anesthesia II Credits: 3**

In this course, students will be prepared to manage anesthetics for more complex situations. Anesthetic management for certain patient conditions will include permanent implantable pacemakers, fluid electrolyte abnormalities, and congenital heart disease. Clinical management for individual patient populations will include obstetrics and pediatric advanced life support (PALS). In addition, clinically relevant information regarding advanced equipment and techniques will include 12 lead ECG interpretation, ultrasound guided peripheral nerve blocks, neuraxial anesthesia, and physics for anesthesiologist assistants.

**ANESTH 5578 Pharmacology for Anesthesiologist Assistants III Credits: 2**

The course prepares students to apply knowledge of pharmacotherapy to anesthesia care by taking into account type of surgery and patient coexisting diseases.

**Prerequisites:** ANESTH 5575, ANESTH 5576.

**ANESTH 5584 Orientation to Physiological Model-Based Simulation Credits: 5**

This skills-based course prepares students for early introduction to the operating room. Simulated clinical models are used to allow students to practice anesthesia care in a safe, controlled, low pressure environment. Operating room set up and etiquette, pre-operative assessment, IV placement techniques, airway management, intraoperative care, and postoperative management are emphasized. The first 6 weeks is delivered as an "anesthesia bootcamp" during which students gain foundational knowledge and skills.

**Prerequisites:** Enrolled in MS Anesthesia program

**ANESTH 5585 Physiological Model-based Simulation I Credits: 2**

This is a two credit hour course, which utilizes physiological model-based simulation and procedure simulation to integrate anesthesia-associated basic science knowledge into a laboratory setting. The focus for this semester is designed to help student become proficient in central lines, pulmonary artery monitoring, epidural and spinal placement, and managing more complex anesthetic cases involving trouble shooting and crisis management via simulation. Advanced Cardiac Life Saving is obtained during this course.

**ANESTH 5586 Physiological Model-based Simulation II Credits: 2**

This is a two credit hour course, which builds upon the technical skills learned in ANES 5585. Students will be asked to manage complex anesthetic cases involving multiple co-existing diseases and methods of anesthesia. Pediatric Advanced Lifesaving Saving (PALS) is a certification required to be obtained during this course.

**Prerequisites:** ANESTH 5585.

**ANESTH 5590 Special Topic Credits: 0.5-3**

An opportunity to explore new topics or existing topics in greater detail and are not included in the usual course offerings.