Clinical Anesthesia I
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.

Medical Terminology
Medical language for appropriate and accurate communication in patient care, as well as terminology and symbols, word formation, body systems and disease terms, abbreviations, and procedures will be covered.

Principles of Airway Management I
This course will provide an opportunity to learn and appreciate structure, function, pathophysiology, disease and management of the human airway. The 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 and adult difficult airways. Course will correlate with laboratory work for a better understanding and use of bag-mask ventilation, oral and nasal airways, oral and nasal intubations techniques, light-wands, fiberoptic intubations, double lumen tubes, surgical airways, and application of laryngeal mask airway (LMA).

Introduction to Clinical Anesthesiology
Prepares and educates the student to work within the anesthesia care team. Includes introduction to induction, maintenance, and emergence from anesthesia, history of anesthesia, types of anesthesia, universal precautions and infection control, layout of the operating room, sterile fields and techniques, interacting with patients, starting intravenous catheters and arterial cannulation, obtaining arterial blood samples, and application of ASA-standard monitors. Students will utilize anesthesia simulator to gain the basic knowledge and usage of monitors.

Pre-operative evaluation
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.

Introduction to Cardiovascular and Pulmonary Physiology
Clinically relevant physiologic principles of the cardiac, vascular and pulmonary organ systems will be covered in these lectures, as well as pathological changes that occur in human physiology in the disease process.

Physics for Anesthesia
Clinically relevant principles in physics concerning electricity, gas/liquid interface, computer systems and fluid and gas dynamics will be covered.

Intro to Anesthesia Delivery Systems and Equipment
Students will undertake classroom and coincident laboratory experiences concerning anesthesia delivery systems and methods for evaluating patient safety issues including equipment and monitoring systems failures.

Anesthesia Laboratory and Simulator I
A state-of-the-art laboratory and anesthesia simulator will prepare the student for the usage and complete understanding of the monitors and practice of anesthesia. Students will apply
their didactic knowledge to scenarios on the anesthesia simulator. Patient modalities are explored, such as pulse oximetry, capnography, and blood pressure monitoring systems. Laboratory experiments will develop the students’ understanding of anesthesia delivery systems, various types of 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. A vascular sonography lab will allow a unique and comprehensive understanding of tranesophageal and transthoracic echocardiography, cerebrovascular testing, and venous and peripheral arterial testing.

**Basic Life Support (BLS)**
Non-Credit Certification will be obtained during first semester.

**Clinical Anesthesia II**
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.

**Anesthesia Skills & Simulation Lab II**
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.

**General Physiology**
Basic science instruction utilizing systems based approach on human physiology.

**Cardiovascular Physiology for Anesthesia Practice I**
This course focuses on the structure and function of the human cardiovascular system. Topics include cardiac cycle, assessment of cardiac function, control of cardiac output, microcirculation, solute and fluid transfer and vasculature design as it applies to anesthesia practice.

**Anesthesia Patient Monitoring I**
Emphasizes basic monitors related to the practice of anesthesia, including ECG, NIBP, arterial line, Sp02 and respiratory gas analysis.

**Anesthesia Principle and Practices I**
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.

**Principle of Airway Management II**
This course will provide an opportunity to learn and appreciate structure, function, pathophysiology, disease and management of the human airway. The 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 and adult difficult airways will also be covered. Course will correlate with laboratory work for a better understanding and use of bag-mask ventilation, oral and nasal airways, oral and nasal intubations techniques, light-wands, fiberoptic intubations, double lumen tubes, surgical airways, and application of laryngeal mask airway.
Anatomy for Anesthesia
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 the Anesthesiology.

Clinical Anesthesia III
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.

General Pharmacology
General pharmacologic concept, membrane receptor, transport, biotransformation, pharmacokinetics and pharmacodynamics will be covered.

Anesthesia Skills & Simulation Lab III
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.

Cardiovascular Physiology for Anesthesia Practice
Pathophysiology in a systems approach: cardiovascular, emphasizing hemodynamics, Starling forces, pulmonary responses, renal hemodynamics, temperature regulation, blood gases/pH, and maternal and fetal physiology. This course emphasizes those systems which affect evaluation and planning for anesthesia and those systems affected by the administration of anesthesia.

Pulmonary Physiology for Anesthesia Practice I
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 the patient under anesthesia care will be covered.

Anesthesia Principle and Practice II
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. Also, includes intra-operative neurophysiology monitoring, temperature, renal function, coagulation/hemostasis, neuromuscular junction, transesophageal and transthoracic echocardiography, cerebrovascular testing, and venous and peripheral arterial testing.

Anesthesia Patient Monitoring II
More advanced monitoring including, BIS, Sv02, arterial and central pressure monitoring, basics of ultrasound, advanced ECG and ST analysis.

Anesthesia Pharmacology I
Emphasizes drugs specifically related to the practice of anesthesia, including 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.

Advanced Life Support (ACLS)
Introduction to the accepted principles of the advanced life support measures used in non-credit adult medical, traumatic, and pediatric emergencies. Includes a review of the most common emergency situations encountered and provides hands-on practical training that will assist the clinician in developing the skills required to stabilize patients with life-threatening conditions.

Clinical Anesthesia IV
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.

Pulmonary Physiology for Anesthesia Practice II
Physiology and pathophysiology of disease associated with the pulmonary system, as well as specific instruction on common disease states, restrictive and obstructive pulmonary disorders, mechanical ventilation, arterial blood gas analysis and how these concepts apply to the patient under anesthesia care will be covered.

Renal Physiology and Pathophysiology
Physiology and pathophysiology of disease associated with the renal system. Specific instruction on common disease states, pre renal, intra renal and post renal failure.

Regional Anesthesia
Anatomy, physiology, pharmacology and placement techniques for regional anesthetics will be covered.

Anesthesia Principles and Practice III
This is a course on improving system-based learning and practice.

Anesthesia Pharmacology II
This is a continuation of anesthesia specific pharmacology.

Anesthesia Skills and Simulation IV
Application of patient monitoring, clinical anesthesia practice and use of a high fidelity patient simulation environment will be covered. Students will also utilize critical thinking skills to fully integrate didactic knowledge in patient care situations.

Pediatric Advanced Life Support (PALS)
Non-credit certification will be obtained during semester IV.

Senior Seminar I
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.
Anesthesia Review I
Lectures, required readings and discussions by faculty, visiting faculty and students, on clinical and research topics, including correlation of case management and complications will be covered.

Clinical Anesthesia V
This encompasses the student's clinical experience in required rotations through all subspecialty areas of anesthesia. Clinical rotations are assigned in two-week and four-week intervals, and will require call during some nights and weekends. Clinical practice of anesthesia is gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Monthly required readings are assigned, and monthly comprehensive examinations are administered. Each course's grade is comprised of clinical evaluations and comprehensive examination scores.

Senior Seminar II
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.

Anesthesia Review
Lectures, required readings and discussions by faculty, visiting faculty, and residents, on clinical and research topics, including correlation of case management and complications will be covered.

Clinical Anesthesia VI
This encompasses the student’s clinical experience in required rotations through all subspecialty areas of anesthesia. Clinical rotations are assigned in two-week and four-week intervals, and will require call during some nights and weekends. Clinical practice of anesthesia is gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Monthly required readings are assigned, and monthly comprehensive examinations are administered. Each course’s grade is comprised of clinical evaluations and comprehensive examination scores.

Senior Seminar III
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.

Anesthesia Review III
Lectures, required readings and discussions by faculty, visiting faculty, and residents on clinical and research topics, including correlation of case management and complications will be covered.

Clinical Anesthesia VII
This encompasses the student’s clinical experience in required rotations through all subspecialty areas of anesthesia. Clinical rotations are assigned in two-week and four-week intervals, and will require call during some nights and weekends. Clinical practice of anesthesia is gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Monthly required readings are assigned, and monthly comprehensive examinations are administered. Each course’s grade is comprised of clinical evaluations and comprehensive examination scores.