

Master of Health Science in Anesthesia – Foundation Phase

Foundation I		
Block 1: Basic Science of Medicine		
Class number	Class name	Credit hours
ANES XXX	Human Form & Function: Pharmacology for Anesthesia	4
ANES XXX	Human Form & Function: Human Physiology	4
ANES XXX	Human Form & Function: Clinical Anatomy	3
ANES XXX	Physics for Clinical Science	3
BMS 5012	Health Policy & Social Determinants of Health	3
ANES XXX	Basic Technical Skills of the Anesthetist	3
ANES XXX	Comprehensive Competency Examination I & II	2
ANES XXX	Technology & Monitoring in Anesthesia	4
ANES XXX	Cardiac Electrophysiology	2
ANES XXX	Patient Evaluation & Physical Assessment	3
ANES XXX	Themes in Anesthesia: Professionalism & Servant Leadership	1
Total Credit Hours Block 1		32
Block 2: Clinical Immersion		
ANES XXX	Foundations of Clinical Anesthesia	3
ANES XXX	Clinical Practicum I	4
ANES XXX	Comprehensive Competency Examination III	1
Total Credit Hours Block 2		8
Foundation II		
Block 3: Foundation of Anesthesia		
ANES XXX	Pathophysiology & Disease Processes	3
ANES XXX	Applied Physiology for Anesthesia	3
ANES XXX	Anesthesia & Co-Existing Diseases	3
ANES XXX	Anesthesia Principles & Practices	3
MED 7333	Preventive Medicine, Epidemiology, and Public Health: Health Care Improvement	2
ANES XXX	Patient Optimization & Advanced Technical Skills	3
ANES XXX	Comprehensive Competency Examination IV & V	2
ANES XXX	Themes in Anesthesia II: Diversity, Equity & Inclusion / Wellness	1
ANES XXX	Anesthesia Crisis Resource Management	2
ANES XXX	Anesthesia Non-Technical Skills	3
Total Credit Hours Block 3		25
Total Credit Hours Foundation		65

Course Descriptions – Master of Health Science in Anesthesia

Year 1 – Block 1 – Basic Science of Medicine

Courses:

- **(ANES XXXX) Pharmacology for Anesthesia: 4 credit hours**
The course introduces students to the study of pharmacology with clinical applications. Emphasis has been placed on the integration of clinical therapeutics of various anesthesia medications as well as basic principles and pharmacologic properties of clinically relevant medications. The course content provides an opportunity for students to deepen their understanding of the clinical use of medications. This course introduces basic principles of pharmacology and focuses on those drugs most often used in the practice of anesthesia, including inhaled anesthetics, opioids, barbiturates, benzodiazepines, anticholinesterases and anticholinergics, neuromuscular blockers, and adrenergic agonists and antagonists. The course provides an overview of drug actions, interactions, metabolism, methods of administration, dosages, side effects, precautions, and contraindications. This course focuses on the pharmacokinetics and pharmacodynamics of major drug classifications. Their interactions with anesthetic agents are discussed. Basic principles of drug action; absorption, distribution, metabolism, and excretion of drugs; mechanisms of drug action; toxicity. Basis for the use of medicines in pharmacologic therapy of specific diseases.
- **(ANES XXX) Human Physiology: 4 credit hours**
Human physiology seeks to understand the mechanisms that work to keep the human body alive and functioning through scientific enquiry into the nature of mechanical, physical and biochemical functions of humans, their organs and the cell of which they are composed. The principal level of focus of physiology is at the level of organs and systems within systems. As a detailed study of the functioning, integration and interrelationships of organ systems This course is designed to provide the student with the essential and fundamental concepts in medical physiology for a career in healthcare. This information will be categorized into six sections within one block, covering Cell & Muscle Physiology, Autonomic & Endocrine Regulation of Body Systems, Cardiovascular Physiology, Pulmonary, Gastrointestinal, Renal, and Reproductive Physiology.
- **(ANES XXXX) Clinical Anatomy: 3 credit hours**
This course teaches students the structures within the human body; to include surface anatomy and diagnostic imaging, through regional study of prosected systems of the body. Utilizing lectures, discussion, models and prosected cadavers, students will have a structural introduction to the organ systems of the thorax, head and neck, abdomen, and pelvic vault. Upon completion of the course, students will be able to identify normal anatomical structures, recognize abnormal anatomy, and determine the clinical implications of pathologic anatomy.
- **(ANES XXXX) Physics for Clinical Science: 3 credit hours**
An introductory course to the physical principles and their clinical application in anesthesia. The course gives a firm grounding, avoiding complex mathematics and irrelevant detail. Measurement and monitoring are a key element of anesthesia for the Anesthesiologist Assistant. Topics covered will include fluid and gas laws, strain and pressure, imaging metrics, ionizing radiation and radiation safety, radioactivity, radiation therapy, computed tomography, nuclear medicine, ultrasound, and magnetic resonance imaging.

- **(BMS 5012) Health Policy & Social Determinants of Health: 3 credit hours**
 The course provides students with information critical to understanding the development and organization of healthcare delivery and the role the anesthesiologist assistant profession plays within healthcare. This course provides students an understanding of the structure of the United States' healthcare system and the influence of policies on the cost, quality, and accessibility of health care services. The course introduces students to how health care is organized, delivered, and reimbursed. All topics, where applicable, will be discussed in the context of the *Patient Protection and Affordable Care Act of 2010*(ACA) and how policy affects the practice of medicine.
- **(ANES XXXX) Basic Technical Skills of the Anesthetist: 3 credit hours**
 This is an anesthesia laboratory in which we will begin our basic anesthesia concepts and skills. This course will incorporate all of the anesthesia classroom knowledge into the clinical setting as well as provide hands on work to learn our anesthesia skills. The knowledge base for this class includes the information learned in Intro to Clinical Anesthesia, Airway Management, Medical Terminology, Anatomy and Physiology. Skills learned in this class will be necessary for your introduction into your clinical anesthesia rotations where you will be performing all of the skills learned in this semester's lab. The skills learned are: (1) airway management including endotracheal intubation and laryngeal mask airway insertion; (2) anesthesia machine checkout; (3) patient monitoring; (4) intravenous insertion and management; and (5) patient positioning.
- **(ANES XXXX) Comprehensive Competency Examination I & II: 2 credit hours**
 In its entirety, this course will provide a complete review of current anesthesia practice. The Comprehensive Competency Examinations (CCE) are administered at ten (10) intervals throughout the Anesthesiologist Assistant Program. These examinations serve to ensure continued development of the core fundamentals of anesthetic knowledge, retention of previously introduced concepts and assimilation of the didactic curriculum into clinical practice. The student will be expected to demonstrate depth and breadth of knowledge of the practice of anesthesia. The examination will also serve as a guide to relevant study material for the student prior to sitting for his or her national certification examination administered by the National Commission on the Certification of Anesthesiologist Assistants (NCCAA).
- **(ANES XXXX) Technology & Monitoring in Anesthesia: 4 credit hours**
 Students are taught the proper balance between circuits and engineering concepts and the clinical application of anesthesia instrumentation. Monitors and devices used in the operating room are studied with respect to principles of operation, calibration and interpretation of data. Principles, application, and interpretation of various monitoring modalities including ECG, invasive and non-invasive blood pressure, oximetry, cardiac output, respiratory gas analysis, and respiration. Also includes intraoperative neurophysiology monitoring, temperature, renal function, coagulation/hemostasis, neuromuscular junction, transesophageal echocardiography, and ICP. The course covers advanced concepts of arterial pressure monitoring, ICP monitoring, transesophageal echocardiography, electric and radiation safety, and the hazards and complications of monitoring patients during anesthesia.
- **(ANES XXXX) Cardiac Electrophysiology: 2 credit hours**
 Acquiring a deeper understanding of the cardiovascular system and how it functions, students will practice basic electrocardiograph patient care techniques, applying legal and ethical responsibilities. Students learn the use of medical instrumentation, electrocardiogram theory, identification of and response to mechanical problems, recognition of cardiac rhythm and response to emergency findings. This course is designed to fill the needs of students who desire the ability to interpret the resting normal and abnormal ECG, as well as provide an overview of heart anatomy, function and neurophysiology. Coursework includes basic and advanced ECG interpretation using simulators to understand an overview of heart anatomy, function, and

electrophysiology. Diagnosis and practical applications of electrocardiography and echocardiography as monitoring techniques in the operating room will be emphasized.

- **(ANES XXXX) Patient Evaluation & Physical Assessment: 3 credit hours**

This course provides students with the tools to conduct a comprehensive medical interview. Students will learn effective methods for obtaining and documenting historical information, developing communication skills with patients and healthcare providers, and providing patient counseling through lectures, case discussions, simulations, and standardized patients. This course also provides students with the skills to perform a complete physical examination essential to patient evaluation and anesthetic management. Students will learn critical thinking skills, physical examination techniques, and interpretation and documentation of medical findings through participation in laboratory sessions, patient simulations, and small group discussions.

- **(ANES XXXX) Themes in Anesthesia I: Professionalism & Servant Leadership: 1 credit hour**

Themes in Anesthesia I is the first of three Theme weeks during the Foundation Phase of the curriculum, followed by a 'threaded' theme course throughout the Integrative Phase. This course integrates thematic content with an emphasis on core concepts needed for professional clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, equity and inclusion, determinants of health, advocacy for the profession and sub-specialties of anesthesiology. Theme I focuses on professionalism and advocacy for the Anesthesiologist Assistant profession and the Anesthesia Care Team. This course exposes students to the societal, regulatory, ethical and professional aspects of coming an Anesthesiologist Assistant. Students will learn the history of the AA profession and address specific topics including professional mobility, governmental funding, healthcare system structure, employment, credentialing, intra-professional communication, leadership and resources for lifelong learning all through the lens of servant leadership.

Year 1 – Block 2 – Clinical Immersion

Block 2 – The Clinical Immersion is an eight-week intensive introduction to the clinical environment, the perioperative setting and anesthetic management of the patient. The Block begins with a clinical boot camp that ensures student readiness to enter the clinical setting, provides basic skill and knowledge review, and covers topics of orientation to the perioperative system.

Courses:

- **(ANES XXXX) Foundations of Clinical Anesthesia: 3 credit hours**
This course is a hybrid course, integrating immersive experience in clinical anesthesia and educates the student to work within the anesthesia care team (ACT) as an anesthesiologist assistant (AA). The coursework focuses on an introduction to experiences in the operating room with emphasis on the fundamental procedures and techniques used in administering an anesthetic. Prepares and educates the student to work within the anesthesia care team. The course includes a anesthetic techniques, hazards and complications, universal precautions and infection control, layout of the operating room, sterile fields and techniques, interacting with patients, starting intravenous catheters, and application of ASA-standard monitors. Students will utilize anesthesia simulator to gain the basic knowledge and usage of monitors. Preoperative assessment, IV placement techniques, airway management, intraoperative patient care and postoperative management are all emphasized in this course. Basic Life Support (BLS), Advanced Life Support (ACLS) and Pediatric Advanced Life Support (PALS) certification is required for course completion.
- **(ANES XXXX) Clinical Practicum I: 4 credit hours**
During the first year of the program curriculum students encounter eight weeks of broad education in basic science disciplines relevant to the practice of anesthesiology. This academic year, termed the *Foundation Year* emphasizes the fundamental aspects of anesthesia, including basic physiology and pharmacology, and the skills involved in the administration of anesthesia and associated invasive and non-invasive monitoring. Much of this year is spent completing the didactic curriculum, with approximately 300 hours of clinical experience in the general operating rooms of adult hospitals. During the Foundation year students develop knowledge and skills in patient assessment and physical examination and optimization, vascular access, and airway management. Clinical experience is intertwined with didactic and simulation-based learning. The Clinical Performance Goals for the Foundation Year are pre-defined and must be satisfactorily completed prior to student promotion to the Integrative Year.
- **(ANES XXXX) Comprehensive Competency Examination III: 1 credit hour**
In its entirety, this course will provide a complete review of current anesthesia practice. The Comprehensive Competency Examinations (CCE) are administered at ten (10) intervals throughout the Anesthesiologist Assistant Program. These examinations serve to ensure continued development of the core fundamentals of anesthetic knowledge, retention of previously introduced concepts and assimilation of the didactic curriculum into clinical practice. The student will be expected to demonstrate depth and breadth of knowledge of the practice of anesthesia. The examination will also serve as a guide to relevant study material for the student prior to sitting for his or her national certification examination administered by the National Commission on the Certification of Anesthesiologist Assistants (NCCAA).

Year 1 – Block 3 – Foundations of Anesthesia

Block 3 – The Foundations of Anesthesia is a comprehensive system-based block that integrates basic science and anesthesia curriculum to provide the student with the medical knowledge to understand the normal structure and function of the systems, to address maintaining the health of the patient undergoing surgical procedure, and to address the most common medical and surgical conditions that occur. The block also includes structural treatments to restore the normal movement and function, surgical procedures required to correct certain abnormalities, and pharmacologic treatment where required.

Courses:

- **(ANES XXXX) Pathophysiology & Disease Processes: 3 credit hours**
Pathophysiology is defined as the physiology of altered health. Pathophysiology deals with the study of structural and functional changes in cells, tissues, and organs of the body that cause or are caused by disease. Pathophysiology also focuses on the mechanisms of the underlying disease process and provides the background for preventative as well as therapeutic health care measures and practices. In this course, students will have the opportunity to apply their knowledge of normal physiology while analyzing the consequences of pathophysiological processes and applying this analysis to basic diagnostic and treatment principles. Students will also be evaluating and analyzing current medical advances using the scientific process. This course focuses on the pathophysiology of the human cardiovascular, respiratory, and renal systems, and on how these systems are altered by various physiologic challenges. The concept of homeostasis is integrated with general disease processes such as injury, inflammation, fibrosis, and neoplasia to demonstrate ways in which perturbations in physiological regulatory mechanisms and anatomy result in pathophysiology. We particularly focus on the effects of stress and obesity on these systems, and on differences between men and women in the manifestation of diseases of these systems.
- **(ANES XXXX) Applied Physiology for Anesthesia: 3 credit hours**
Anesthesia practice depends on the basic sciences of physiology and pharmacology, and this course summarizes the main aspects of physiology to anesthesiology. While anesthesia is intended to block or diminish the physiologic responses to painful stimuli, as well as the perception of pain, the neurologic effects are not the only important consideration. Circulatory and respiratory effects of anesthesia and perioperative events are also vital concerns. Additionally, interactions with the patient's pathophysiology can crucially affect the anesthetic course. This course offers Basic and applied human systems physiology with emphasis on topics and areas of special concern to the anesthetist. This course has been developed to instruct anesthesiologist assistant students in application of physiology with a focus on the clinical relevance of human physiology that pertains to patients in the perioperative period.
- **(ANES XXXX) Anesthesia & Co-Existing Diseases: 3 credit hours**
The course offers a concise, thorough coverage of pathophysiology of the most common diseases and their medical management relevant to anesthesia. The primary aim of the course is to provide the guidance to the student needed to successfully manage or avoid complications stemming from pre-existing conditions with detailed discussions of each disease, the latest practice guidelines, and easy-to-follow treatment algorithms. The course will also present detailed discussions of common diseases, as well as highlights of more rare diseases and their unique features that could be of importance in the perioperative period, as well as specific anesthesia considerations for special patient populations—including pediatric, obstetric, medically-underserved and elderly patients.

- (ANES XXXX) Anesthesia Principles & Practices: 3 credit hours**

This course offers a deep dive into specific surgical and procedural specialties to understand the implications on a derivative anesthetic plan. The course serves as the culmination of medical knowledge learned to this point and ties together knowledge and application domains for anesthetic plan development. Principles involved in the formulation of anesthetic plans based upon data obtained during the preoperative evaluation will be discussed, including the formulation and practices of different anesthetic plans and techniques as related to specific surgical procedures and pathophysiology. Advanced principles of anesthesia equipment, monitoring, documentation, patient assessment, basic patient care, and infection control are examined with detailed studies of anesthetic techniques for different surgical procedures and for patients with acute and chronic diseases. Concepts of perioperative and psycho-social assessment, care plans, and anesthesia techniques are explored in detail.
- (MED 7333) Preventive Medicine, Epidemiology, and Public Health: Health Care Improvement: 2 credit hours**

In this course, students will acquire knowledge of practice transformation in specific ways to improve health care. Thirteen online modules from the Institute for Healthcare Improvement are included. Upon successful completion of the 13 modules, students will be awarded a Basic Certificate in Quality and Safety from the Institute for Healthcare Improvement. The IHI modules address patient safety, health care leadership, the Triple Aim, patient safety, quality improvement, and patient-focused care. Five online modules from the Institute for Healthcare Improvement introduce patient safety, discuss the relationship between error and harm, explore how human factors impact safety, stress the importance of teamwork and communications in delivering safe care, and explain how to respond to adverse events. An additional five modules address the challenges to continuous quality improvement, the model for improvement, approaches to implementing change, how to test and measure changes in the PDSA cycle, interpret quality improvement data, and lead quality improvement initiatives. One module introduces patient-centered care and includes addressing implicit bias, the components of empathy, and effective communications. Another module discusses the Triple Aim for populations, what contributes to population health, and the importance of providing a high-value health care system. The leadership module describes the characteristics of effective leadership, approaches to implement changes. This course includes an Interprofessional Experience (IPE) experience.
- (ANES XXXX) Patient Optimization & Advanced Technical Skills: 3 credit hours**

A hybrid course experience in the standardized patient 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, relations between mean circulatory filling pressures and central venous pressure. Additionally, the course expands upon the student skill set of tools to perform a comprehensive health assessment on clients across the lifespan. Builds knowledge of anatomy, physiology, pathophysiology and health assessment skills previously attained in the curriculum. The diagnostic reasoning skills needed for clinical reasoning in the advanced practice role is emphasized.

- (ANES XXXX) Comprehensive Competency Examination IV & V: 2 credit hour**
 In its entirety, this course will provide a complete review of current anesthesia practice. The Comprehensive Competency Examinations (CCE) are administered at ten (10) intervals throughout the Anesthesiologist Assistant Program. These examinations serve to ensure continued development of the core fundamentals of anesthetic knowledge, retention of previously introduced concepts and assimilation of the didactic curriculum into clinical practice. The student will be expected to demonstrate depth and breadth of knowledge of the practice of anesthesia. The examination will also serve as a guide to relevant study material for the student prior to sitting for his or her national certification examination administered by the National Commission on the Certification of Anesthesiologist Assistants (NCCAA).
- (ANES XXXX) Themes in Anesthesia II: Diversity, Equity and Inclusion / Wellness: 1 credit hour**
 Themes in Anesthesia II is a continuation in the series during the Foundation Phase of the curriculum, followed by a ‘threaded’ theme course throughout the Integrative Phase. This course integrates thematic content with an emphasis on core concepts needed for professional clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, equity and inclusion, determinants of health, advocacy for the profession and sub-specialties of anesthesiology. Theme II focuses on diversity, equity and inclusion in healthcare as well as seeking work-life balance through wellness. Healthcare professionals have a growing responsibility to improve diversity, equity, and inclusion (DEI) efforts not only for their employees, but also to better serve patients and their families. DEI has been a recent focus for many businesses and organizations across the world. But the healthcare industry has a particularly unique opportunity to make a greater impact, as it directly affects a broad set of patient health outcomes and quality of life in a profound way. The week-long intensive also explores aspects of wellness of mind, body and spirit with a focus on work-life balance.
- (ANES XXXX) Anesthesia Crisis Resource Management: 2 credit hours**
 Healthcare is a high-stakes industry that is prone to crises; this is especially true for acute care specialties such as anesthesiology and emergency medicine, in which healthcare practitioners must treat critically ill patients while facing diagnostic ambiguity, resource limitations, and numerous disruptions in chaotic work environments. To deliver safe and effective patient care, Anesthesiologist Assistants must execute highly coordinated team-based strategies. Crisis resource management (CRM) refers to a set of principles dealing with cognitive and interpersonal behaviors that contribute to optimal team performance. This course is designed around a two-fold objective: (1) understanding how human factors can improve patient safety; and (2) how to mitigate errors in anesthesia care through an appreciation for how they occur and how human providers react in a crisis situation. Human factors are the study of how humans behave and interact with each other and their surroundings. It considers how humans interact in the perioperative workplace and how, due to the inevitability of human error, mistakes are likely to occur. In this course you will look at human factors in a healthcare environment, an area where it is vital to limit mistakes because human error can affect patient safety. Students will learn about systems that pre-empt the inevitability of human error and can help improve clinical practice and patient safety as a whole.

- **(ANES XXXX) Anesthesia Non-Technical Skills: 3 credit hours**

This course is the practical corollary to ANESXXX and integrates the principles of crisis resources management through immersive clinical scenarios and formative debrief of student performance. Integrating medical knowledge and clinical skills, non-technical skills should help to support safe and effective performance in everyday tasks and emergency situations. The ANTS premise describes the main observable non-technical skills associated with sound anesthesia fundamentals. The purpose of the system is to provide the Anesthesiologist Assistant student with a framework for describing non-technical skills and a tool to guide their assessment in an explicit and transparent manner. In short, the ANTS system supplies students with a language for discussing the 'behavioral aspects' of performance. It can be used for assessing an individual's behavior, to provide input for the training process, and for structuring feedback on skills development. Instructors utilize simulator technique to teach advanced principles of anesthesia, including case management, effective communication while under stress, diagnosis and treatment of acute physiologic abnormalities, including support for and review of training in BLS and ACLS. A review of critical crisis management and rescue techniques, which are not often seen in practice.

Master of Health Science in Anesthesia – Integrative Phase

Integrative I

Block 4: Clinical Practicum

Class number	Class name	Credit hours
ANES XXXX	Clinical Practicum II	11
ANES XXXX	Context Appropriate Simulation Training I	1
ANES XXXX	Comprehensive Competency Examination VI, VII & VIII	3
ANES XXXX	Themes in Anesthesia III: Specialties of Anesthesiology	1
BMS 5920	Research Methods & Biostatistics	3
ANES XXXX	Professional, Ethical & Legal Concepts in Anesthesia	1
ANES XXXX	Capstone Project I	1
Total Credit Hours Block 4		21

Block 5: Anesthesia Specialty Care

ANES XXXX	Clinical Practicum III	9
ANES XXXX	Themes in Healthcare & Anesthesiology I	1
ANES XXXX	Context Appropriate Simulation Training II	1
ANES XXXX	Comprehensive Competency Examination IX & X	2
ANES XXXX	Certification Exam Preparation	1
ANES XXXX	Capstone Project II	5
Total Credit Hours Block 5		17

Integrative II

Block 6: Transition to Practice

ANES XXXX	Clinical Practicum IV	5
ANES XXXX	Themes in Healthcare & Anesthesiology II: Transition to Practice	1
Total Credit Hours Block 6		6
Total Credit Hours Integrative		44
Total Credit Hours Program		109

Course Descriptions – Master of Health Science in Anesthesia

Year 1/2 – Block 4 – Clinical Practicum

Courses:

- **(ANES XXXX) Clinical Practicum II: 11 credit hours**
Both clinical and non-clinical learning activities during the Integrative Year are based upon a philosophy of increasingly self-directed learning. The didactic lectures are presented in a seminar format directed toward critical review of literature on selected topics. The Block clinical exposure is primarily spent in general anesthesia rotations, but advanced student standing may allow some exposure to specialty areas of care. At the discretion of the Medical Directors, all students in good standing are given the opportunity to undertake satellite elective months. During the entire Integrative Phase, students are permitted to complete up to three (3) elective satellite rotations. Additionally, students may voluntarily utilize their vacation time between the fall and winter semesters for additional satellite rotations.
- **(ANES XXXX) Context Appropriate Simulation Training: 1 credit hour**
This course is a continuation in the student's exploration into cognition and decision-making under stressful situations, with recognition that performance of both novice and experienced anesthesia clinicians is limited in certain ways. The simulation-based course is designed expose students to difficult immersive situations to continually reinforce abnormal situation recognition, error mitigation and team dynamics. The course is a structured and systematic training in handling critical events, to provide reference source for such information, and to aid in handling emergency procedures to prepare students in advance and to support them as they manage crisis situations. Anesthesiologist assistants need to know how to manage a variety of resources effectively, bringing them together in concert as necessary to deal with the situation. The Context Appropriate Simulation Training (C.A.S.T.) System is based on the same principles while incorporating innovative simulation-based education and unique scenarios.
- **(ANES XXXX) Comprehensive Competency Examination VI, VII & VIII: 3 credit hours**
In its entirety, this course will provide a complete review of current anesthesia practice. The Comprehensive Competency Examinations (CCE) are administered at ten (10) intervals throughout the Anesthesiologist Assistant Program. These examinations serve to ensure continued development of the core fundamentals of anesthetic knowledge, retention of previously introduced concepts and assimilation of the didactic curriculum into clinical practice. The student will be expected to demonstrate depth and breadth of knowledge of the practice of anesthesia. The examination will also serve as a guide to relevant study material for the student prior to sitting for his or her national certification examination administered by the National Commission on the Certification of Anesthesiologist Assistants (NCCAA).
- **(ANES XXXX) Themes in Anesthesia III: Specialties of Anesthesiology: 1 credit hour**
Themes in Anesthesia III is a continuation in the series during the Foundation Phase of the curriculum, followed by a 'threaded' theme course throughout the Integrative Phase. This course integrates thematic content with an emphasis on core concepts needed for professional clinical practice in the changing healthcare environment. In this section, students will explore an intensive instruction in the anesthesiology specialty areas of critical care, regional anesthesia and pain medicine. The Theme III concentration areas are grouped together as important components of the Perioperative Surgical Home in efficiency of care, patient safety, and transitions of care.

- **(BMS 5920) Research Methods & Biostatistics: 3 credit hours**

The course will provide an overview of the important concepts of research design, data collection, statistical and interpretative analysis, and final report presentation. The focus of the course is not on mastery of statistics but on the ability to use research in the clinical anesthesia environment. The course uses systematic inquiry and analysis while reinforcing the problem-solving method and uses research in the improvement of healthcare practice to affect positive outcomes. The course focuses on the fundamentals of the research process, namely research ethics, qualitative research methods and non-experimental methods. Students are taught how to use statistics to answer questions and how to use this skill to aid in the review and interpretation of healthcare literature and research.

- **(ANES XXXX) Professional, Ethical, and Legal Concepts in Medicine: 1 credit hour**

The course begins with a discussion on the basic principles of medical ethics and expands to include major principles and themes in clinical ethics. Topics covered include legal aspects of the doctor-patient relationship, informed consent and competence, privacy issues, end-of-life issues, organ donation, pediatric bioethics, responsible prescribing, and human genetics. Particular attention is paid to health disparities and the difficulties related to the development of normative ethical arguments in a multicultural context and the role a physician plays as a patient advocate. The course concludes by bringing attention to the ethical dilemmas faced when encountering the hidden values in the clinical setting.

- **(ANES XXXX) Capstone Project I: 1 credit hour**

In this course the student will learn about the importance of quality in healthcare and how they can contribute by implementing a project to improve processes of care and patient outcomes. The student will learn the steps in the QI process during short lectures and reflective exercises then will identify a clinically relevant project to address or a personal improvement project and apply the QI tools. The QI project will be considered within the context of inter-professional teams and from a systems perspective. Care environments are complex settings and call for a sophisticated set of collaborative teamwork skills and systems thinking. This course provides students with the opportunity to develop critical thinking and problem-solving skills. Students will learn how to connect the knowledge and attitudes developed in behavioral, basic, and clinical science courses to patient care. Increasing student capacity to seek and apply knowledge as individual problem solvers and members of a health care team are key to this course. The Project is a culminating activity that provides a way for students to demonstrate the knowledge and skills they acquired throughout the Program. It engages students in a project/experience that focuses on an interest relative to healthcare delivery, quality improvement, or coordinated perioperative care that synthesizes didactic study and real-world perspective.

Year 2 – Block 5 – Clinical Practicum

Courses:

- **(ANES XXXX) Clinical Practicum III: 9 credit hours**
Both clinical and non-clinical learning activities during the Integrative Year are based upon a philosophy of increasingly self-directed learning. The didactic lectures are presented in a seminar format directed toward critical review of literature on selected topics. The Block clinical exposure is primarily spent in subspecialty anesthesia rotations, including pediatrics, cardiothoracic, neurosurgery, obstetrics, critical care and Perioperative Surgical Home. At the discretion of the Medical Directors, all students in good standing are given the opportunity to undertake satellite elective months. During the entire Integrative Phase, students are permitted to complete up to three (3) elective satellite rotations. Additionally, students may voluntarily utilize their vacation time between the fall and winter semesters for additional satellite rotations.
- **(ANES XXXX) Themes in Healthcare & Anesthesiology I: 1 credit hour**
Themes in Healthcare is the final installment of the Themes series of ‘threaded’ coursework throughout the Integrative Phase. This course integrates thematic content with an emphasis on core concepts needed for professional clinical practice in the changing healthcare environment. In this section, students will explore topics germane to planning and executing their Capstone project, the function, structure and economics of healthcare systems, and future practice models and technology within the anesthesiology field.

The second part of the course focuses on the student’s transition to practice, providing the students with a foundation in professional development topics related to employment and practice, such as maintaining certification, lifelong learning, developing and fostering effective team-based practice, and successful long-term functioning within the larger healthcare system. Students will learn principles of professional interviewing, contract negotiations, health literacy, medical malpractice and reimbursement, servant leadership in practice, and cultural diversity impacting the provision of health care.

- **(ANES XXXX) Context Appropriate Simulation Training II: 1 credit hour**
This course is a continuation in the student’s exploration into cognition and decision-making under stressful situations, with recognition that performance of both novice and experienced anesthesia clinicians is limited in certain ways. The simulation-based course is designed expose students to difficult immersive situations to continually reinforce abnormal situation recognition, error mitigation and team dynamics. The course is a structured and systematic training in handling critical events, to provide reference source for such information, and to aid in handling emergency procedures to prepare students in advance and to support them as they manage crisis situations. Anesthesiologist assistants need to know how to manage a variety of resources effectively, bringing them together in concert as necessary to deal with the situation. The Context Appropriate Simulation Trainig (C.A.S.T.) System is based on the same principles while incorporating innovative simulation-based education and unique scenarios.
- **(ANES XXXX) Comprehensive Competency Examination IX & X: 2 credit hours**
In its entirety, this course will provide a complete review of current anesthesia practice. The Comprehensive Competency Examinations (CCE) are administered at ten (10) intervals throughout the Anesthesiologist Assistant Program. These examinations serve to ensure continued development of the core fundamentals of anesthetic knowledge, retention of previously introduced concepts and assimilation of the didactic curriculum into clinical practice. The student will be expected to demonstrate depth and breadth of knowledge of the practice of anesthesia. The examination will also serve as a guide to relevant study material for the student prior to sitting for his or her national certification examination administered by the National Commission on the Certification of Anesthesiologist Assistants (NCCAA).

- **(ANES XXXX) Certification Exam Preparation: 1 credit hour**

In its entirety, the course will provide a complete review of current anesthesia practice framed against the primary topic areas of the certification exam delivered by the *National Commission for Certification of Anesthesiologist Assistants (NCCAA)*. Students will be provided a thorough update on issues and topics germane to the professional practice of the AA, including the principles of anesthesia, pathophysiology, technology and monitoring, pharmacology, and subspecialty areas of anesthesiology. The course builds off the progressive curriculum-wide comprehensive examinations and provides a culminating review of material likely to be addressed on the national certifying exam.

- **(ANES XXXX) Capstone Project II: 3 credit hours**

This is a continuation of Capstone I and focused on the development and presentation of the Capstone Project. With the guidance of a faculty advisor, each student completes an approved master's paper during the final nine months of the clinical phase of the Program. Completion of this learning activity serves to deepen the students' fund of knowledge as well as promoting the development of critical thinking abilities through critical analysis of current literature and exploration of key anesthesia care issues. Emphasis is placed on the enhancement of the students' abilities to communicate with precision, cogency, and force in both written and oral forms. Satisfactory completion of the capstone project is a final requirement of the M.H.Sc. degree. Conducting actual scientific research is not mandatory, but highly recommended. An in-depth review of the primary literature regarding a faculty-approved anesthetic topic is required. The project should be a systematic investigation of a topic in the anesthesia field and should demonstrate an ability to critically analyze and integrate pertinent literature. The final paper must be considered suitable for publication in a refereed professional journal.

Year 3 – Block 6 – Transition to Practice

Courses:

- **(ANES XXXX) Clinical Practicum IV: 5 credit hours**
Both clinical and non-clinical learning activities during the Integrative Year are based upon a philosophy of increasingly self-directed learning. The didactic lectures are presented in a seminar format directed toward critical review of literature on selected topics. The Block clinical exposure is primarily spent in subspecialty anesthesia rotations, including pediatrics, cardiothoracic, neurosurgery, obstetrics, critical care and Perioperative Surgical Home. At the discretion of the Medical Directors, all students in good standing are given the opportunity to undertake satellite elective months. During the entire Integrative Phase, students are permitted to complete up to three (3) elective satellite rotations. Additionally, students may voluntarily utilize their vacation time between the fall and winter semesters for additional satellite rotations.
- **(ANES XXXX) Themes in Healthcare & Anesthesiology II: 1 credit hour**
Themes in Healthcare is the final installment of the Themes series of ‘threaded’ coursework throughout the Integrative Phase. This course integrates thematic content with an emphasis on core concepts needed for professional clinical practice in the changing healthcare environment. The second part of the course focuses on the student’s transition to practice, providing the students with a foundation in professional development topics related to employment and practice, such as maintaining certification, lifelong learning, developing and fostering effective team-based practice, and successful long-term functioning within the larger healthcare system. Students will learn principles of professional interviewing, contract negotiations, health literacy, medical malpractice and reimbursement, servant leadership in practice, and cultural diversity impacting the provision of health care.