



ADMISSION REQUIREMENTS

• AOS INVASIVE CARDIOVASCULAR TECHNOLOGIST PROGRAM

1. All applicants for the AOS degree programs will be ranked using a point system in specific categories. Refer to the Admission Point System form.
2. A letter grade of B, or a minimum GPA of 3.0 is required for all General Education courses in the AOS programs.
3. A high school diploma or its equivalent.
4. Documentation of high school transcript or GED certificate.
5. Documentation of college credits and advanced degree(s) if applicable.
6. Proficiency in keyboarding is preferred.
7. Prior allied health work experience is preferred.
8. A personal interview at the school between applicant and Admissions Officer.
9. A pre-enrollment interview with the Director of Education.
10. Completion of entrance examination.
11. Three (3) Professional references.
12. Resume (one page).
13. Submission of a formal application as provided by the school. Arrangements for high school or college transcripts will be made prior to enrollment.
14. The above factors will determine the applicant's ranking in the point system.

PROGRAM: INVASIVE CARDIOVASCULAR TECHNOLOGIST

Program Description:

The AOS Invasive Cardiovascular Technologist student is trained to assist in the performance of invasive testing procedures which provide critical data used in the detection and treatment of diseases of the heart and circulatory system.

Invasive cardiovascular studies include a foundation in anatomy, physiology & pathology, medical terminology, universal precautions, cardiovascular pharmacology, basic and advanced electrocardiography, physics, vital signs, IV administration, diagnostic cardiac catheterization, hemodynamics, and principles of radiology. The recognition of and intervention in lethal arrhythmias are also included. In addition, interventional procedures such as angioplasty, stents, and intra-aortic balloon pumps are presented within the context of this program. Sufficient time is devoted to the concepts of cardiac electrophysiology and pacemakers. Advanced Cardiac Life Support (ACLS) is presented according to the guidelines of the American Heart Association.

Emerging technologies of peripheral vascular intervention are presented and explored. These advances in the treatment of lower arterial and carotid artery disease include endovascular stenting, thrombectomy, and laser and rotational atherectomy.



The externship rotation is an integral part of the training program. Eligible students are assigned to school- approved hospital site or medical facility and will maintain this rotation until all required hours have been successfully completed within the duration of eligibility. Refer to Student Handbook.

The student's performance of program objectives is closely monitored by the school's Education Department, Program Supervisor and hospital preceptors.

Upon successful completion of the AOS Invasive Cardiovascular Technologist Program, and the knowledge and skills acquired, students are prepared for responsible career entry positions with advancement opportunities in hospitals, specialty clinics, doctor's offices, and non-invasive cardiovascular laboratories. The minimum expectation is to prepare competent entry-level Invasive Cardiovascular Technologists in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains for Invasive Cardiovascular. There is a widespread demand for competent, credentialed Invasive Cardiovascular Technologists.

Marketable Skills / Outcomes:

Upon completion of program requirements, Carnegie Invasive Cardiovascular Technologist graduates will be able to:

- Utilize communication, critical thinking and mathematic skills in assessment, planning, intervention, and evaluation of patient care.
- Demonstrate understanding of cardiac, vascular, respiratory, and renal anatomy, physiology and pathology
- Demonstrate thorough understanding of ECG and related medical terminology
- Prepare patient for electrocardiogram
- Perform electrocardiogram
- Standardize and operate various types of electrocardiograph instruments
- Recognize and correct various types of artifact
- Perform time/voltage measurements on the ECG
- Perform axis measurement and recognize significance
- Demonstrate understanding of waveform morphology
- Recognize ECG wave patterns and significance
- Recognize and interpret normal vs. abnormal wave patterns on the ECG with emphasis on lethal arrhythmias
- Recognize and interpret arrhythmias and heart block abnormalities
- Assist in the performance of exercise stress testing
- Demonstrate understanding of the indications for pacemakers, mechanisms, normal function, signs of malfunction, and ECG patterns
- Recognize electrocardiographic changes which occur in chamber enlargement and myocardial ischemia/infarction
- Perform intravenous administration, blood pressure and vital sign measurements



- Demonstrate understanding of the principles related to basic and ultrasound physics
- Demonstrate understanding of pharmacology and pharmacokinetics related to cardiac and vascular function
- Demonstrate knowledge of cardiopulmonary resuscitation through American Heart Association Healthcare Provider course
- Respond to the occurrence of a lethal arrhythmia following ACLS standards
- Identify coronary anatomy in cine angiographic projections
- Identify cardiac pressure waveforms
- Calculate basic hemodynamic parameters using the recording computer
- Record catheterization events in the database computer
- Properly document medications commonly used in the cath lab, including indications for administration, dosages, generic and trade names
- Recognize and alert physicians to abnormalities in clinical laboratory values for arterial blood gases, electrolytes, hemoglobin, BUN, and creatinine
- Describe the fundamental steps in a diagnostic heart catheterization
- Monitor a diagnostic cardiac cath to ensure patient safety
- Provide the physician with the appropriate supplies for a diagnostic cath
- Perform cardiac outputs, oxygen saturations and ACT (activated clotting time) measurements
- Distinguish between the following interventional cardiovascular modalities: PTCA, directional atherectomy, mechanical rotation atherectomy, extraction devices such as AngioJet, laser revascularization and stents
- Explain the indication and potential complications of thrombolytic therapy for acute MI
- Identify the benefits of supplementing angiographic imaging with intravascular ultrasound such as Optical Coherence Tomography and Fractional Flow Reserve
- Describe the indications for electrophysiologic testing, permanent pacemaker implant, therapeutic ablation of dysrhythmias, tilt table testing, and implantable cardioverter defibrillators
- Identify the main components of the cath lab x-ray system
- Demonstrate radiation safety
- Demonstrate sterile technique in scrubbing and patient prep
- Demonstrate universal precautions around patient body fluids
- Assist with the operation of the intra-aortic balloon pump
- Set up a sterile table for a cardiac catheterization procedure
- Drape patient for a cardiac catheterization procedure
- Describe left ventriculography, aortography, peripheral arteriography and coronary arteriography
- List and describe most common cardiac pathologies, including symptoms and treatment
- Demonstrate understanding of pharmacological effects of drugs used to control lethal arrhythmias and respiratory arrest
- Use wall suction for Yankauer, ET and NG suction
- Use oxygen flow meter with nasal cannula, non-breather mask and ambu bag



- Describe the operation of left ventricular assist devices such as the Impella
- Identify the steps in Trans-catheter Aortic Valve Implantation/replacement (TAVR)
- Identify commonly used types of Peripherally Inserted Central Catheters (PICC)
- Assist in obtaining and processing endomyocardial biopsy specimens
- Identify basic concepts of Pacemaker and ICD Technology
- Describe percutaneous intervention techniques for aortic aneurysm, renal artery stenosis, lower extremity peripheral artery disease, deep vein thrombosis, arteriovenous fistula thrombosis, carotid artery stenosis and acute stroke intervention
- Demonstrate the operation of endovascular stents, vena cava filters, excisional atherectomy devices, excimer laser and rheolytic thrombectomy systems
- Adhere to the principles of medical ethics as applied to the role of the Invasive Cardiovascular Technologist

Delivery:

Hybrid – synchronous and asynchronous

- “Distance Education Program” means a program in which all courses are delivered via distance education teaching and learning activities, without the need for any on-campus in-person classes/activities.
- “Hybrid” or “Blended” means courses or programs in which some portion of on-campus instruction is replaced by distance education teaching and learning activities.
- “Synchronous” means courses where all students are required to participate at the same time with an instructor with interaction in real time between student and instructor, although in separate locations. These courses may be delivered by video conferencing, web conferencing, audio conferencing, etc.
- These courses may be delivered by video conferencing, web conferencing, audio conferencing, etc.
- “Asynchronous” means courses where students are not required to participate in any distance education teaching and learning activities live/in real time with an instructor, but instead engage in lecture courses based upon teaching materials and assignments compiled and made available by an instructor.



Quarterly Schedule of Instruction:

Twenty-Seven (27) Months

Nine (9) 12 Week Quarters and 1000 Hour Externship

Quarter I: Asynchronous

Quarters: II - III:

- Tuesday & Thursday, 6 PM - 9:30 PM / 5:30 PM-9 PM
- Saturday, 8 AM - 3 PM

Quarter IV:

- Tuesday & Thursday, 8 AM to 4:30 PM
- Saturday, 8 AM - 2 PM

Quarters V - VII:

- Tuesday & Thursday, 4:30 PM – 8:30 PM / 6PM-9:30 PM
- Saturday, 8 AM – 11:30 AM

Quarter VIII:

- Saturday, 8 AM - 1:30 PM

Quarter IX:

- Thursday, 10AM -3:30 PM

Course	Contact Hours	Quarter Credit Hours
<i>Quarter I</i>		
GE011: Anatomy & Physiology	45	4.5
GE112: Algebra I	45	4.5
GE130: Written and Oral Communication	45	4.5
<i>Work Outside of Class: 67.5 Hours</i>		
<i>Total Quarter I:</i>	135	13.5
<i>Quarter II</i>		
C100a: Anatomy & Physiology / Pathophysiology / Therapeutic Communications/HIPAA	54	3.5
C101a: Physics I - Basic Ultrasound	12	0.5
C115a: Pharmacology	18	1.0
C118a1: ECG I - Theory	36	2.5
C118a2: ECG I – Practical – Telemetry & Exercise Stress Testing	36	2.0
<i>Work Outside of Class: 39 Hours</i>		
<i>Total Quarter II:</i>	156	9.5
<i>Quarter III</i>		
C100b: Anatomy & Physiology / Pathophysiology	42	2.5
C101b: Physics II - Pulsed Ultrasound	12	0.5
C115b: Pharmacology	18	1.0
C110: Vital Signs: Theory & Practical / IV Administration: Theory & Practical	12	0.5



Course	Contact Hours	Quarter Credit Hours
C128b1: ECG II - Theory	36	2.5
C128b2: ECG II - Practical - 12-Lead Analysis, Arrhythmia Interpretation	32	2.0
C129 Healthcare Provider Basic Life Support	4	0.0
<i>Work Outside of Class: 39 Hours</i>		
Total Quarter III:	156	9.0
Quarter IV		
C130 Clinical Preparation Skills	80	5.0
C150: Advanced Cardiovascular Life Support (ACLS)	40	2.0
C140: Invasive Cardiac Diagnostics, Diagnostic Catheterization Techniques, Cardiac Pathology, Basic Hemodynamics, Advanced ECG	132	9.0
<i>Work Outside of Class: 63 Hours</i>		
Total Quarter IV:	252	16.0
Quarter V		
C245: Interventional Cardiology Part I, Cardiac Pharmacology I, Principles of Radiology, Advanced Hemodynamics	132	9.0
C260a: Clinical Site Rotation / Externship	120	4.0
<i>Work Outside of Class: 33 Hours</i>		
Total Quarter V:	252	13.0
Quarter VI		
C255: Interventional Cardiology Part II, PTCA Mechanisms and Equipment, Management of Complications, Intra-Aortic Balloon Pump, Atherectomy Techniques	132	9.0
C260b: Clinical Site Rotation / Externship	120	4.0
<i>Work Outside of Class: 33 Hours</i>		
Total Quarter VI:	252	13.0
Quarter VII		
C265: Interventional Cardiology Part III, Stenting, Ancillary Imaging Techniques, Structural Heart Intervention, Cardiac Pharmacology II	132	9.0
C260c: Clinical Site Rotation / Externship	120	4.0
<i>Work Outside of Class: 33 Hours</i>		
Total Quarter VII:	252	13.0
Quarter VIII		
C275: Principles of Cardiac Pacemaker & Defibrillators, Pacemaker and ICD, Introduction to Peripheral Interventions	66	4.5
C260d: Clinical Site Rotation / Externship	120	4.0
<i>Work Outside of Class: 16.5 Hours</i>		
Total Quarter VIII:	186	8.5
Quarter IX		
C285: Diagnostic & Interventional Concepts – Summary and Review,	66	4.5



Course	Contact Hours	Quarter Credit Hours
Advanced Peripheral Interventions		
C260e: Clinical Site Rotation / Externship	120	4.0
<i>Work Outside of Class: 16.5 Hours</i>		
Total Quarter IX:	186	8.5
Clinical Site Rotation / Externship		
C260f: Clinical Site Rotation / Externship	400	13.0
Externship Total:	400	13.0
PROGRAM TOTAL	2227	117.0
Work Outside of Class: 340.5 Hours		
<i>Note: Total work outside of class hours are approximate.</i>		

Definitions:

- A “didactic learning environment (**theory**)” is one which is led by a qualified faculty member for the intention of teaching and learning and can be in a classroom or laboratory setting of instruction.
- A “supervised laboratory setting of instruction (**practical**)” is one where students engage in discussion and/or the practical application of information presented in the didactic portion of the program or discovered through out-of-class work/preparation.
- “Out-of-class work/preparation” is that which students engage in as a means to prepare for the didactic learning environment or supervised laboratory setting of instruction.
- “Externship” is a component of a program offered in a bona fide occupational setting for which training and education are provided, the externship component occurs during and after coursework is completed. The objectives and goals of an externship must be to allow students to apply practically the knowledge and skills taught in didactic and laboratory settings of instruction.

Course Descriptions:

GE011: Anatomy & Physiology

In this course, the essential basics of structures and functions of the human body systems will be discussed. Topics on all individual major organ systems will be examined, while considering them in the state of health versus the state of disease, focusing mainly on structures. Various clinical implications and possible deviations from norm of each organ system will be brought up throughout the course.

GE112: Algebra I

This course is designed to give students the math skills that provide a foundation for more advanced courses. Students will explore writing and solving linear and nonlinear equations, powers and exponents, quadratic equations, polynomials and factoring, graphing and solving linear inequalities, and functions.



GE130: Written and Oral Communication

In this course, students will explore the fundamental analog and digital skills of oral and written communication to help create professional written and oral communication within their career. This is an introduction to a variety of methods used to communicate effectively and create language that articulates information in a way that connects a speaker to an audience.

C100a: Anatomy & Physiology / Pathophysiology / Therapeutic Communications / HIPAA

Covers the principles of human anatomy and physiology with emphasis on the cardiovascular system. Topics include cell biology, normal anatomy and physiology of the cardiovascular, respiratory, urinary, nervous, and endocrine systems. The format includes class discussion, and a high degree of student participation on the major pathologies of each organ system presented. Emphasis is placed on the physiologic principles underlying the disease processes which the Cardiovascular Technologist is likely to encounter in a clinical environment. Presents the concepts of basic human behavior with emphasis on effective communication with the patient and family, physicians, and staff. Student will be able to identify styles and types of verbal and non-verbal communication and differentiate between adaptive and non-adaptive coping mechanisms. Student will recognize the role of patient advocacy as it applies to their scope of practice. Focus is placed on active listening skills and increasing awareness of how a message is received and the formation of a professional response. Communication skills incorporate respect for cultural diversity and sensitivity. HIPAA guidelines and how they pertain to the role of the allied health professional are also presented.

C101a: Physics I - Basic Ultrasound

Student learns the physical properties of ultrasound. Topics include the piezoelectric effect, the parameters of a sound wave, acoustic variables and the concept of direct and inverse relationships among variables. The student performs calculations of frequency, period, wavelength, velocity, amplitude, power, and intensity.

C115a: Pharmacology

A study of the major categories of medications prescribed for cardiac patients. The student learns the indications, contraindications, and mechanisms of action of drugs used for the control of angina, dysrhythmias, heart failure and hypertension. Adrenergics and anticoagulants are covered. Selected ancillary medications for sedation, analgesia, diuresis, and cardiopulmonary emergencies are also examined.

C118a1: ECG I - Theory

A study of the basic levels of electrocardiology and electrocardiography. Focus is placed on waveform morphology with emphasis on Einthoven's theory and lead derivation. Student learns to perform ECG measurements of significant diagnostic value. Ancillary ECG methods such as telemetry monitoring and stress testing are also presented. ECG I is a prerequisite for the study of advanced principles offered in ECG II.



C118a2: ECG I – Practical – Telemetry & Exercise Stress Testing

Hands-on ECG testing procedures and placement of chest electrodes. Principles of machine operations and troubleshooting to maintain quality of ECG tracing is thoroughly covered. Technical skills are performed under the supervision of certified specialists to ensure quality control and professional skill development.

C100b: Anatomy & Physiology / Pathophysiology

This course is designed to continue the principles of human anatomy and physiology introduced in C100a Anatomy & Physiology/Pathophysiology which have a direct relationship to the function of cardiac activity and blood flow. Focus is placed on feedback mechanisms underlying circulatory physiology. Anatomy and physiology of the heart is discussed with focus placed on myocyte contraction, cardiodynamics, and basic cardiovascular pathology. Discussion also includes nervous, endocrine, respiratory and renal function as it relates to the cardiovascular system.

C101b: Physics II - Pulsed Ultrasound

Student learns the principles of pulsed ultrasound and the behavior of sound as it propagates through the body. Topics include pulsed ultrasound, attenuation, impedance reflection and refraction. The student performs calculations of pulse repetition frequency, pulse repetition period, spatial pulse length, pulse duration, duty factor, attenuation coefficient, intensity reflection coefficient and Snell's Law of Refraction.

C115b: Pharmacology

This course is designed to continue the principles of Pharmacology introduced in C115a. This course involves the study of adrenergics, antiarrhythmics, antihypertensives & nitrates. The student will also learn the medications used for each of the above referenced modules, including the mechanism of action, indications, side effects, contraindications and/or interactions.

C110: Vital Signs: Theory & Practical / IV Administration: Theory & Practical

Prepares student to perform blood pressure, pulse, and respiration procedures. Hands-on practice is supervised by credentialed subject specialists to ensure quality control and successful development of clinical skills. Trains the student in the proper procedural techniques for IV administration. Special attention is given to sites and equipment which may be used for IV infusion. Supervised hands-on training (1-1 ratio) for all intravenous procedures is closely monitored by credentialed subject specialists to ensure quality control and to instill professional confidence. IV administration labs are limited in size for the successful development of IV administration skills. Focus is placed on OSHA guidelines and how this pertains to the role of the allied health professional.

C128b1: ECG II - Theory

Builds on the basic principles of waveform morphology presented in ECG I. The student develops the ability to recognize and interpret cardiac arrhythmias, heart blocks, chamber enlargement, and 12-lead interpretation as it relates to myocardial infarction, and pacemaker analysis.



C128b2: ECG II Practical / BLS – 12-Lead Analysis, Arrhythmia Interpretation

Student develops expertise in the recognition and interpretation of cardiac arrhythmias, heart blocks, and chamber enlargement. Special attention is also given to the recognition of pacemaker patterns and ECG changes caused by a myocardial infarction. The student is required to interpret and analyze numerous rhythm strips for each cardiac anomaly.

C129 Healthcare Provider Basic Life Support

This is a programmed course designed and supported by the American Heart Association. Student learns to accurately identify an emergency and provide appropriate care for the adult, child, and infant. Emphasis is placed on skill development in CPR, AED and rescue breathing. In addition, the Healthcare Provider Basic Life Support training is designed and supported by the American Heart Association. Student learns to accurately identify an emergency and provide appropriate care for the adult, child, and infant. Emphasis is placed on skill development in CPR, AED and rescue breathing.

C150: Advanced Cardiovascular Life Support (ACLS)

This course is designed and supported by the guidelines of the American Heart Association. It provides the knowledge and skills needed to evaluate and manage a potentially life-threatening situation. Providers are required to learn algorithms for bradycardia, tachycardia, cardiac arrest, acute coronary syndrome and stroke. The course consists of a combination of lectures and hands-on skills. Practical skills are evaluated through case scenarios and a written exam is required.

C140: Invasive Cardiac Diagnostics, Diagnostic Catheterization Techniques, Cardiac Pathology, Basic Hemodynamics, Advanced ECG

Invasive Cardiac Diagnostics

Includes a brief history of catheterization, radiation safety and patient safety measures, vascular access and catheter and related equipment used by the cardiologist.

Diagnostic Catheterization Techniques

This section of the program describes the different features of Left and Right heart catheterization procedures. The student is familiarized with common arterial and venous catheters used for angiography, pressure sampling and cardiac output measurement. Ancillary equipment including power injectors, oximeters and anticoagulation monitoring devices are introduced.

Cardiac Pathology

Addresses the major cardiac pathologies, both congenital and acquired, which are encountered in an invasive cardiac setting. Emphasis is on coronary artery disease and valvular abnormalities, with special attention to acute myocardial infarction.

Basic Hemodynamics

Introduces the fundamentals of pressure monitoring, waveform recognition and interpretation, basic measurements and derived parameters.



Advanced ECG

Focuses on advanced 12-lead ECG interpretation. Thorough review of various rhythms including sinus, atrial, junctional, and ventricular is conducted. In addition, heart blocks and reentry mechanisms are presented with special emphasis on myocardial infarction criteria.

C245: Interventional Cardiology Part I: Cardiac Pharmacology I, Principles of Radiology, Advanced Hemodynamics

Cardiac Pharmacology I

This is an introduction to the most commonly used medications in the cath lab and a survey of ACLS medications that may be required in the event of a need for CPR in the cath lab.

Principles of Radiology

Covers the basic physics of ionizing radiation, the evolution of fluoroscopic imaging, the generation of x-rays in the cath lab, features of the imaging chain and basic troubleshooting.

Advanced Hemodynamics

Focuses on the calculation of more complex hemodynamic parameters such as shunt ratios, valve areas, regurgitant fractions, special gradients and contractility indices.

C255: Interventional Cardiology Part II: PTCA Mechanisms and Equipment, Management of Complications, Intra-Aortic Balloon Pump, Atherectomy Techniques

PTCA Mechanisms and Equipment

Introduces the mechanisms of Percutaneous Transluminal Coronary Angioplasty and the varieties of balloons, wires, catheters and devices used in this intervention.

Management of Complications

Concentrates on the complications which may occur during cardiac interventions and the range of measures employed in managing complications. Modalities introduced include the Cardiopulmonary Support machine, devices for foreign body retrieval, the use of thrombolytic drugs and emergent coronary artery bypass surgery.

Intra-Aortic Balloon Pumping and Assist Devices

Introduces the theory of counterpulsation, recognition of waveforms, timing, hardware and troubleshooting. Left ventricular assist devices such as the Impella and Tandem Heart are also presented.

Atherectomy Techniques

This section of the program focuses on atherectomy techniques. Devices discussed include mechanical rotational atherectomy, transluminal endarterectomy, thrombectomy, directional atherectomy and laser PTCA.



C265: Interventional Cardiology Part III, Stenting, Ancillary Imaging Techniques, Structural Heart Intervention, Cardiac Pharmacology II

Stenting

Continuing the survey of interventional modalities, this course examines the fundamentals of stenting including drug eluting stents.

Ancillary Imaging Techniques

Introduces intravascular ultrasound and fractional flow reserve measurement. New developments in Optical Coherence Reflectometry and Near Infrared Lipiscan are also presented.

Structural Heart Interventions

Focuses on structural heart interventions such as septal ablation for HOCM, pericardiocentesis, PFO closure, myocardial biopsy, Valvuloplasty, Transcatheter Aortic Valve Implantation and Left Atrial Appendage closure.

Cardiac Pharmacology II

Deepens student knowledge of the range of cardiac medications in common usage including antihypertensives, diuretics, hypolipidemics, ACE inhibitors and medications currently in research trials.

C275: Principles of Cardiac Pacemaker & Defibrillators, Pacemaker and ICD, Introduction to Peripheral Interventions

Principles of Cardiac Pacemakers & Defibrillators

This course introduces artificial pacemakers and implantable defibrillators. Focus is placed on common units of measurement, application of Ohm's Law to implant thresholds, key steps in the surgical implant and the technologist's roles in assisting the cardiologist during the procedures.

Pacemaker and ICD

Basic Pacemaker and ICD fundamentals are included in this course. Pacemaker concepts are presented including history, indications, pacing components, Mode terminology and hemodynamic effects of pacing. Cardiac Resynchronization Therapy and Loop Recorder technology are also explained. Basic ICD focuses on history, indications, operation of generators, coils and leads. Differentiation of tiered therapies are clarified for student recognition of cardioversion, defibrillation and anti-tachycardia pacing.

Introduction to Peripheral Interventions

Introduces interventions in the peripheral vascular circulation such as lower extremity arterial angioplasty, renal stenting and endovascular aortic aneurysm repair.



C285: Diagnostic & Interventional Concepts – Summary and Review, Advanced Peripheral Interventions

Diagnostic & Interventional Concepts: Summary and Review

Highlights and discusses the primary concepts presented in the Invasive Cardiovascular Technologist segment. Special attention is given to invasive cardiac diagnostics and interventional cardiology as outlined in the program course descriptions.

Advanced Peripheral Interventions

Focuses on advanced vascular interventions such as vena cava filters, stenting of carotids, hemodialysis shunt declotting, laser, atherectomy and rotational ablation devices, PICC lines and other miscellaneous procedures.

C260a – C260g: Externship

Externship can take place when the student reaches eligibility and continues until requirement is completed. Externship is an opportunity for a learning experience outside school facilities. The off-campus externship is an integral part of the program. The student is assigned to a school-approved facility. Written and verbal contact with externship preceptor is maintained throughout externship experience and communication with sites is routinely performed by the school to monitor student progress.

Maximum number of students in a classroom and laboratory:

Delivery	Faculty	Students
Classroom (Theory) Core Courses	1	25
Laboratory (Practical) Core Courses	2	12
General Education Courses	1	25

Requirements For Graduation:

An Associate of Occupational Science degree, designating the graduate as an Invasive Cardiovascular Technologist is conferred on those students meeting the following requirements:

Satisfactory completion of the course requirements which include stipulated externship hours at a school approved site and an externship evaluation from the medical supervisor.

- A combined average grade of not less than 80%.
- A Minimum Cumulative Completion Rate of 67%.
- Recommendation of the faculty.
- Satisfaction of all indebtedness to the school.
- A satisfactory record of attendance.