ACADEMIC ASSOCIATE OF SCIENCE IN DIAGNOSTIC VASCULAR SONOGRAPHY COURSES		
GENERAL EDUCATION COURSEWORK		
Algebra I	**ALG101**	This course introduces the student to the basic rudiments of algebraic theory including the following: linear algebra, associative algebra, logarithmic scale, scientific notation, solving for x. Practice exercises are provided throughout the course.
Anatomy and Physiology I	**AP101**	In this course, students will learn the chemical basis of life, cellular metabolism, and the different types of tissues that comprise the human body. The structure and function of the integumentary, skeletal, and muscular systems of the human body will be taught.
Anatomy and Physiology II	**AP102**	In this course, students will learn the structure and function of the nervous, endocrine, blood, cardiovascular, Immune and lymphatic systems of the human body. Electrical and chemical reactions, transport of substances, and defense mechanisms of the human body will be studied.
Anatomy and Physiology III	**AP103**	In this course, students will learn the structure and function of the digestive, respiratory, urinary, and reproductive systems of the human body. Nutrition and metabolism, water, electrolyte, and acid base balance will be discussed. Pregnancy, growth, and development will be studied. Students will also be introduced to the study of genetics and genomics.
Oral Communication	**OCOM101**	This course is designed to empower students to speak effectively in a public forum. Students will learn public speaking contexts, topic selection, audience analysis and ethical communication. Students will practice organizing and outlining ideas, constructing introductions and conclusions, and utilizing presentational aids. Students will deliver three speeches in this class; to include one demonstration speech, one informative speech, and one persuasive speech.
Written Communication	**WCOM101**	This course is designed to empower students to write effectively. Students will learn to choose topics and organize their ideas and materials. They will practice writing a first draft, editing and proof reading their work for errors. Additionally, students will undertake a research project following a systematic process.
TECHNICAL COURSEWORK		
Advanced Vascular Sonography Lecture	**VAS202**	This lecture course will take the student to the upper levels of Advanced Vascular Sonography. The ultrasound scanning protocols will include radio frequency ablation of the superficial veins, IMT (Intima Media Thickness), renal insufficiency, penile Doppler and diabetes evaluation. A particular emphasis will be placed on carotid examination and disease state, intracranial study and disease, and lower extremity vascular study and disease. Students will also study vein mapping for surgical interventions, graft studies, upper vascular, renal failure with inclusion of hemodialysis and the study

		of patients with diabetes and pathology due to the disease.
Advanced Vascular Sonography Laboratory	**VAS202L**	The student will perform bilateral carotid artery Duplex examination, transcranial Doppler (TCD), bilateral lower extremity arterial and venous Duplex examination, and bilateral upper extremity arterial and venous Duplex examination. Arterial segmental pressures of upper and lower extremities will be introduced. The student will also perform mesenteric Duplex examination, renal artery Duplex, aorto-iliac Duplex and venous valvular incompetence Duplex examinations. The student will also perform bilateral lower and upper extremity vein mapping.
Clinical Vascular Techniques and Procedures Lecture	**VAS203**	This course will discuss the types of vascular techniques, the etiology, risk factors, indications of exam and explanation of the procedure of pathology that is demonstrated through vascular evaluation. The topics included in this course are the following: Intra-inoperative vascular ultrasound, sterile technique and angiography correlation to the noninvasive testing, quality assurance utilizing the CHI Square system (Sensitivity, Specificity, Positive Predictive Value PPV, Negative Predictive Value NPV and Accuracy). Also, the measurement of stenosis utilizing the diameter vs. area reduction of B-mode images along with the angiographic determination of stenosis. The Diabetes Diagnostic protocols and summary of disease process will be discussed. Students will be introduced to Diagnostic Diabetes vascular scanning. The North American Symptomatic Carotid Endarterectomy Trial (NASCET) and the European Carotid Surgery Trial (ECST) will be discussed.
Clinical Vascular Techniques and Procedures Laboratory	**VAS203L**	This course will demonstrate the proper sterile techniques for the preparation of intra-operative ultrasound. The students will continue to practice the multiple scanning protocols introduced in the previous modules of the Vascular Sonography Laboratory and the Advanced vascular Laboratory. Continued training in Diagnostic Diabetic Ultrasound Evaluation with protocols provided to include the following: Intimal Medical Thickening, Ankle Brachial Index, Leg Venous, arterial scanning and Toe Brachial Index.
Medical Terminology I	**MT101**	Students will be introduced to medical terminology and learn how to build and analyze medical terms using prefixes, suffixes, roots and combining vowels. Students will practice building and defining medical terms for anatomical structures and pathologies associated with the various body systems. Writing medical reports and communicating with medical staff using medical terms and abbreviations will be discussed and practiced.
Ultrasound Physics and Instrumentation Lecture	**PHY201**	The properties of sound physics and machine instrumentation will be addressed. Students will gain a deeper understanding of the interactions of ultrasound within the human body and the proper use of ultrasound applications. Emphasis will be placed on ultrasound

		theory, parts of the machine, transducer construction/ function and Doppler principles.
Ultrasound Physics and Instrumentation Laboratory	**PHY201L**	Students will learn "knobology" by scanning predetermined protocols that afford manipulation of specific knobs and machine function. Emphasis is placed on the technical aspects of scanning and applying the principles of physics.
Vascular Medical Terminology	**VASMT201**	This course is focused on specific medical terms and abbreviations related to Vascular Sonography. Included are medical terms for blood flow characteristics, vascular physics and Instrumentation, terms associated with blood flow changes related to pathology of the veins and arteries, diagnostic sonography vascular terms, abbreviations for all vessels and terms for pathology. Terminology related to vascular noninvasive testing and invasive procedures.
Vascular Pharmacology	**VASP201**	This course will cover the scope of vascular pharmacology used in today's healthcare setting. The different types of medication, treatments, and prevention of vascular diseases will be discussed. Pharmacological contraindications and types of Vascular physiological reactions will be included.
Vascular Sonography Lecture	**VAS201**	This course will address vascular anatomy, physiology, hemodynamics and disease of the vascular system. Emphasis is placed on intra/extracranial vessels as well as vessels of the upper and lower extremity arterial and venous systems. Doppler, Bernoulli's Principle, Poiseuille's Law and relative statistics complete this course study.
Vascular Sonography Laboratory	**VAS201L**	Students learn with a hands-on approach to perform ultrasound on cerebral carotids and vessels of the upper and lower extremity both arterial and venous. Doppler waveforms and spectral analysis, as well as initial impressions are taught. ABI's, blood pressure, and intima medial thickness are explained.
EXTERNSHIP		
Externship Preparation Laboratory I	**EPL201**	This course prepares students for clinical application of their skills via externship with a focus on what will make students successful professionals upon graduation. Students will successfully complete all ultrasound protocols required in their program and required for clinical rotation. Students will also participate in career building tools required for long-term success in their chosen field of study, including professionalism, important clinical skills, patient care, case studies, and pathology. As a core component of this class, students must successfully complete all ultrasound protocols and pass an exit evaluation prior to Externship.
Externship I (AAS)	**EXT201**	Externship involves the direct interaction of the student within a specific medical environment. The student is assigned to a hospital, imaging center, clinic, or other environment in which ultrasound is performed on patients. Students observe and, when allowed by a supervisor, may perform a portion of the exam. This module serves to assist the student in making a

		successful transition from the school environment to a clinical setting. Students will write reports, present findings, and further explore pathologies.
Externship II (AAS)	**EXT202**	Externship involves the direct interaction of the student within a specific medical environment. The student is assigned to a hospital, imaging center, clinic, or other environment in which ultrasound is performed on patients. Students observe and, when allowed by a supervisor, may perform a portion of the exam. This module serves to assist the student in making a successful transition from the school environment to a clinical setting. Students will write reports, present findings, and further explore pathologies.