

## *General Sonography / Track II*

### **US 205 - Physical Principles and Instrumentation of Ultrasound**

This course provides a comprehensive understanding of the fundamental physical principles underlying ultrasound technology, with a specific focus on preparing students to pass the SPI exam. Through a blend of theoretical knowledge and hands-on laboratory experience, students will gain proficiency in ultrasound instrumentation and operation.

Topics covered in the course include the basic acoustic principles of ultrasound, the physics of pulsed ultrasound, Doppler principles, transducer operating principles and composition, components of the ultrasound imaging unit, identification and mitigation of common imaging artifacts, and safety protocols for operating ultrasound equipment.

In the laboratory component of the course, students will receive practical training on the instrumentation controls necessary for optimal operation of ultrasound machines. By mastering these essential skills, students will be well-prepared to excel in both the theoretical and practical aspects of ultrasound imaging, ultimately ensuring success in passing the SPI exam and pursuing a career in the field of medical sonography.



### **US 210 – History of Ultrasound**

Topics covered in the course include the early origins of ultrasound, advancements in transducer technology, landmark discoveries in diagnostic ultrasound applications, and the historical progression of ultrasound equipment and imaging techniques. Students will also examine the role of key figures in ultrasound history and their contributions to the field.

Through a combination of lectures, discussions, multimedia presentations, and interactive learning activities, students will develop a deep appreciation for the historical significance of ultrasound in medicine. By understanding the historical context of ultrasound innovation, students will gain valuable insights into the evolution of medical imaging technology and its impact on healthcare practices and patient care.

Overall, the History of Ultrasound course aims to foster a greater understanding of the rich legacy and ongoing advancements in ultrasound technology, inspiring students to explore the future possibilities of this dynamic and rapidly evolving field.

### **US 305 - Vascular Ultrasound**

This course is designed to instruct the student to ultrasound studies performed in the practice of vascular ultrasound imaging. Delve into the intricate hemodynamics of arterial and venous vascular systems, exploring their anatomical structures and prevalent pathologies. Vascular Sonography is a game of millimeters, this is the time to perfect your game.

In our comprehensive lectures, we'll dissect the anatomy of the body's arterial and venous networks, providing insights into common disorders encountered in clinical practice. During immersive laboratory sessions, you'll receive expert guidance in refining your scanning techniques for crucial areas such as the carotid arteries, upper and lower extremity arteries, upper and lower extremity veins, and abdominal vessels.

As the last class before your externship, mastering ultrasound studies in vascular imaging is paramount. Join us as we equip you with the skills essential for success in your upcoming professional endeavors.

### **US 310 – Medical Professional**

Embark on a comprehensive exploration of the dynamic field of diagnostic medical sonography with this foundational course. Designed to provide a broad overview, students will delve into the essential components of sonography practice, encompassing the roles, skills, and learning strategies vital for success in the profession.

Throughout the course, students will gain insights into the multifaceted nature of a career in sonography, examining various facets including career progression pathways, the significance of professional affiliations, and the advantages of certification and registration. Discussions will encompass crucial topics such as sonographer safety protocols, ethical considerations, and the legal framework surrounding sonography practice, fostering a deep understanding of professional conduct and responsibilities.

Moreover, students will explore diverse employment opportunities within the field, develop essential resume-writing skills, and hone effective interview techniques to navigate the competitive job market with confidence. By the course's conclusion, students will emerge equipped with a comprehensive understanding of the sonography profession, primed to embark on a successful and rewarding career journey in diagnostic medical sonography.

### **US 405- Abdominal and Small Parts Ultrasound Imaging**

This course provides comprehensive training in abdominal and small parts ultrasound scanning essential for entry-level sonographer positions. Structured



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with both lecture and laboratory components, students will gain a thorough understanding of ultrasound imaging principles and practical skills required for clinical practice.

The lecture segment delves into the normal ultrasound appearances of organs within the abdominal cavity, breast, thyroid, prostate, and testes, along with an exploration of common pathological conditions affecting these organs. Through interactive sessions, students will develop proficiency in recognizing and interpreting ultrasound images, preparing them for accurate diagnosis and reporting.

In the laboratory segment, students will engage in hands-on learning experiences to master proper ultrasound scanning techniques for visualizing abdominal organs and small parts. Under the guidance of experienced instructors, students will learn to operate ultrasound equipment effectively, acquire optimal imaging views, and ensure patient comfort and safety during scanning procedures. Additionally, students will learn the art of preparing comprehensive reports and presentations for radiologists, refining their communication skills and professional competence. By the end of the course, students will emerge equipped with the knowledge, technical expertise, and practical experience necessary to excel in entry-level sonographer roles, contributing effectively to the healthcare field with confidence and proficiency.

### **US 410 - Patient Care in Radiology**

Delve into the critical realm of patient care within the context of Diagnostic Medical Sonography in this comprehensive course. Students will explore various aspects of patient care pertinent to sonographers, with a focus on fostering effective patient/sonographer interaction, ensuring patient confidentiality, and adhering to HIPAA and OSHA compliance standards.

Throughout the course, students will develop essential patient care skills applicable not only to Diagnostic Medical Sonography but also to the broader field of radiology. Emphasis will be placed on mastering vital signs assessment, mastering body mechanics for safe patient transfer, implementing care techniques for patients with tubing, and adhering to standard precautions for infection control.

Moreover, students will learn aseptic/sterile techniques, isolation protocols, and protocols for managing emergency medical situations. By the course's conclusion, students will be well-equipped with the knowledge and practical skills necessary to provide exemplary patient care in the dynamic and fast-paced environment of diagnostic medical sonography.

### **US 505 - Obstetrics and Gynecology Ultrasound Imaging**

Explore the intricate realm of pelvic and obstetric ultrasound imaging in this comprehensive course, designed to equip students with a foundational understanding of both normal and abnormal conditions affecting the female reproductive system and developing fetus.



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During the lecture portion, students will delve into the nuances of normal and pathological conditions affecting vital organs such as the uterus, ovaries, and fetus. Through engaging discussions and case studies, students will gain insight into the complexities of gynecologic and obstetric ultrasound imaging, enhancing their diagnostic skills and proficiency.

In the laboratory component, students will receive hands-on training in proper scanning techniques and protocols utilized in ultrasound imaging of gynecologic and obstetric patients. With an emphasis on recognizing normal anatomy, students will practice ultrasound documentation, biometry measurements, and the preparation of preliminary reports for the interpreting radiologist. Furthermore, the school endeavors to provide students with authentic learning experiences by striving to secure real pregnant women for our lab scanning classes, facilitating a dynamic and immersive educational environment. By the course's conclusion, students will emerge with the knowledge and practical skills essential for success in the field of pelvic and obstetric ultrasound imaging.

### **US 510 – Clinical Prep Course**

Embark on your journey towards clinical readiness with our Clinical Preparation for Sonography course. Throughout this comprehensive program, students will cultivate essential skills in patient communication, interdisciplinary collaboration, and compassionate care for individuals with diverse needs.

In this course, students will delve into the intricacies of patient interaction, mastering effective communication strategies tailored to the healthcare setting. Additionally, students will learn the art of preparing patients for various ultrasound examinations, ensuring optimal comfort and cooperation throughout the process.

As students prepare for their clinical practicum, emphasis will be placed on completing essential requirements such as physical examinations, background checks, and drug screenings. These prerequisites are crucial for ensuring a smooth transition into the clinical environment.

Furthermore, students will gain valuable insights into the significance of the externship experience, viewing it as a pivotal six-month job interview. Through discussions and guidance, students will learn how to position themselves for success during their externship, ultimately paving the way for fulfilling career opportunities upon completion of the program.



## US Clinical Practicum I

Prepare to step into the dynamic world of diagnostic medical ultrasound through our Clinical Immersion course. In this immersive experience, students will have the opportunity to directly engage with real-world ultrasound imaging facilities, including hospitals, clinics, and imaging centers.

Throughout the duration of this course, students will undergo comprehensive training and direct supervision within the clinical setting, offering them a firsthand glimpse into the inner workings of a diagnostic ultrasound department. Under the guidance of experienced supervising sonographers or physicians, as well as our school's Clinical Coordinator, students will embark on a journey to acquire the essential hands-on skills required of a competent sonographer.

This course serves as a crucial bridge between classroom learning and real-world practice, allowing students to apply theoretical knowledge to practical scenarios. Through active participation in clinical case studies and patient examinations, students will develop a nuanced understanding of ultrasound techniques, patient care protocols, and departmental operations.

Moreover, this immersive experience provides students with invaluable insights into the day-to-day realities of working in a clinical setting. By observing and participating in ultrasound examinations, students will gain confidence in their abilities and cultivate the professionalism necessary for success in their future careers as sonographers.

Overall, the Clinical Immersion in Diagnostic Medical Ultrasound course is a cornerstone of our program, offering students a transformative opportunity to refine their skills, expand their knowledge, and prepare for the rewarding challenges that lie ahead in the field of diagnostic medical ultrasound.



## US Clinical Practicum II

Clinical Practicum 2 builds upon the foundational experiences of Clinical Practicum 1, offering students an opportunity to delve deeper into the intricacies of diagnostic medical ultrasound. Designed as a more advanced continuation of the clinical training journey, this course empowers students to refine their skills, expand their knowledge, and prepare for the next phase of their professional journey.

Throughout Clinical Practicum 2, students will continue their immersion in the clinical environment, working under the guidance of experienced sonographers and physicians. By actively participating in a variety of patient cases, students will enhance their proficiency in ultrasound imaging techniques, focusing on abdominal, small parts, gynecologic, obstetric, or vascular examinations.

As students' progress through Clinical Practicum 2, they will have the opportunity to fine-tune their skills in performing complex ultrasound procedures, honing their ability to obtain high-quality images and provide accurate diagnostic assessments. Moreover, this course emphasizes the importance of mastering advanced imaging techniques essential for addressing the diverse needs of patients and healthcare providers.

An integral aspect of Clinical Practicum 2 is the emphasis on preparing students for successful integration into the workforce post-graduation. Recognizing the significance of securing employment in the field of diagnostic medical ultrasound, this course equips students with the practical skills, professional competencies, and industry insights needed to excel in their careers.

By actively engaging with challenging cases, navigating clinical protocols, and collaborating with interdisciplinary healthcare teams, students gain invaluable experience and confidence in their abilities. Additionally, Clinical Practicum 2 provides students with networking opportunities, allowing them to forge connections with potential employers and industry professionals.

Ultimately, the successful completion of Clinical Practicum 2 marks a crucial milestone in the journey toward becoming a proficient and sought-after diagnostic medical sonographer. Beyond mastering technical skills, this course empowers students to embrace their role as healthcare professionals, prepared to make meaningful contributions to patient care and diagnostic accuracy in the dynamic field of medical imaging.

