SONOGRAPHY (SON)

Some of the following course descriptions apply to the A.A.S. Sonography program, which is being phased out. The baccalaureate sonography major course descriptions will be added to the catalog as they are approved by faculty committee.

SON 1500 Communication for the Sonography Professional — 2 credits
This course is designed to help students understand the theory and develop the skills necessary for effective communication. The course explores verbal/non-verbal communication, interpersonal listening and feedback, passive and active listening, team development, and managing conflict. Offered in the College for Adults.

SON 1530 Introduction to Clinical Ultrasound — 1 credit
This course is offered in the first summer term prior to clinicals. It combines lectures, discussions and demonstrations. **Prerequisites:** Admission to the sonography program and successful completion of prior courses in the program progression. Offered in the College for Adults.

SON 1600 Abdomen I Lecture — 2 credits
This course is an introduction to abdominal ultrasound. Students will have comprehensive discussions of cross-sectional anatomy and physiology of the liver and biliary system. Offered in the College for Adults. **Prerequisite:** Admission to the sonography program.

SON 1605 Abdomen I — 4 credits
This course is the beginning anatomy/physiology and pathology of the abdomen sequence. This course will provide the beginning student with an understanding of the anatomy and pathology of the liver, gallbladder, and biliary systems.

SON 1610 Abdomen I Lab — 1 credit
This course is an introduction to scanning the anatomy of the liver, gallbladder, pancreas and kidney. Students will gain experience through participation in scanning labs. Offered in the College for Adults.

SON 1700 GYN Lecture — 2 credits
This course is an introduction to female pelvic anatomy. Students will have comprehensive discussions on small parts anatomy, which includes the thyroid, breast, prostate and scrotum. Offered in the College for Adults. **Prerequisites:** BIOL 2410, SON 2010, SON 1600, SON 1610.

SON 1705 Reproductive Systems in Sonography — 4 credits
In this course, the student will learn the foundational knowledge of the male and female reproductive anatomy, physiology and pathology. The student will learn identification and location of pelvic structures and surrounding landmarks commonly imaged on Ultrasound. **Corequisite:** SON 1710.

SON 1710 Reproductive Systems Skills Lab — 1 credit
This course establishes the basic foundation for the imaging technique and interpretation of the female pelvis. Students will gain experience through lab participation. Offered in the College for Adults. **Prerequisites:** BIOL 2410, SON 2010, SON 1600, SON 1610.

SON 1800 Abdomen II Lecture — 2 credits
This course will provide students with an understanding of the pathology of the pancreas, spleen, urinary system and abdominal vasculature. This course is a continuation of the skills and knowledge acquired in SON 1600. Offered in the College for Adults. **Prerequisites:** SON 1600, SON 1610, SON 2010.

SON 1805 Abdomen II — 4 credits
This course will provide the intermediate student with an understanding of the anatomy and pathology of the pancreas, spleen, urinary system, and abdominal vasculature. This is a continuation of the skills and knowledge acquired in Abdominal I (SON 1605). **Prerequisite:** SON 1605. **Corequisite:** SON 1810.

SON 1810 Abdomen II Lab — 1 credit
This course provides students with greater understanding of scanning the abdominal section. This is a continuation of the skills and knowledge acquired in SON 1610. Students will gain greater experience and knowledge through participation in the scanning labs. Offered in the College for Women. **Prerequisites:** SON 1610, SON 2015. **Corequisite:** SON 1805.

SON 1900 OB I Lecture — 2 credits
This course builds on the knowledge and skills learned in SON 1700. Students will have discussions on first, second and third trimester normal anatomy as it applies to scanning. Offered in the College for Adults. **Prerequisites:** SON 1700, SON 1710.

SON 2015 Ultrasound Physics and Instrumentation — 4 credits
This course will focus on the underlying principles of physics and basic concepts critical for developing skills in the use of diagnostic ultrasound. Emphasis will be on basic acoustical physics and acoustical waves in human tissue, ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission, and resolution of sound beams. Also discussed will be image artifacts, Doppler, ultrasound bio-effects, safety, and quality assurance. **Prerequisite:** PHYS 1050.

SON 2020 Ultrasound Physics, Instrumentation II — 2 credits
Students will apply a more profound understanding of ultrasound physics concepts so that the relationship of the physics fundamentals to the quality of the diagnostic ultrasound is understood. Offered in the College for Adults. **Prerequisites:** Admission to the sonography program and SON 2010.

SON 2050 Scanning Lab — 1 credit
The course will provide students with more scanning experience and will be a continuation of the skills and knowledge learned from previous courses. Offered in the College for Adults. **Prerequisites:** SON 1700, SON 1710, SON 1800, SON 1810, SON 2020 BIOL 2410.

SON 2120 Abdomen III Lecture — 2 credits
This course is a continuation of abdominal ultrasound and will provide students with comprehensive discussions on small parts anatomy, which includes the thyroid, breast, prostate and scrotum. Offered in the College for Adults. **Prerequisites:** SON 1800, SON 1810.

SON 2205 Obstetrical-Neonatal Sonography — 4 credits
This course builds upon the knowledge gained in Reproductive Systems. It will begin with discussions and materials presented on first, second, and third trimester normal fetal and maternal anatomy as it applies to ultrasound. **Prerequisite:** SON 1705.
SON 2220 OB II Lecture — 2 credits
This course is a continuation of SON 1700 and SON 1900 and will provide students with comprehensive discussions about third trimester pregnancy, fetal anomalies and biophysical profiles. Offered in the College for Adults.
Prerequisites: SON 1900, SON 1910.

SON 2300 Vascular Ultrasound — 2 credits
The anatomy, physiology and pathology of the arterial and venous circulation systems are covered in this course. Noninvasive vascular instrumentation, protocols and techniques are introduced. The principles of hemodynamics and the physics and use of continuous wave, pulse and color Doppler ultrasound are covered in this course. Offered in the College for Adults.
Prerequisite: SON 2020.

SON 2305 Elementary of Vascular Sonography — 4 credits
This course will introduce students to the foundational discipline-based knowledge and skills necessary to practice vascular ultrasound. Foundational knowledge in vascular physics, Doppler and hemodynamics will be introduced. Knowledge of lower and upper extremity vasculature, cerebrovascular structures, abdominal and transplant vascular will be discussed and practiced, in conjunction with SON 2310 Elements of Vascular Sonography Lab. This includes arterial and venous anatomy, physiology and pathology of both upper and lower extremities, cerebrovascular, abdominal vascular, transplant structures, and arterial-venous fistulas.
Prerequisite: Successful completion of all previous sonography courses.
Corequisite: SON 2310.

SON 2310 Elements of Vascular Sonography Skills Lab — 1 credit
This course provides students with comprehensive scanning skills in all areas of the arterial and venous circulation systems. Noninvasive vascular instrumentation, protocols and techniques are introduced. Students will optimize their scanning abilities through participation in the labs. Offered in the College for Adults.
Prerequisite: SON 2020.

SON 2350 Vascular Ultrasound II — 2 credits
The non-invasive vascular instrumentation, protocols and techniques used to evaluate anatomy, physiology and pathology of the cerebrovascular and peripheral venous systems are introduced, including carotid artery disease, venous insufficiency and vein mapping. Invasive vascular evaluation methods will be introduced, including angiography, MRA and CTA. Instruction methods include lecture and scanning lab. Offered in the College for Adults.
Prerequisite: SON 2300.

SON 2360 Vascular Ultrasound II Lab — 1 credit
The noninvasive vascular instrumentation, protocols and techniques used to evaluate anatomy, physiology and pathology of the cerebrovascular and peripheral venous systems are introduced, including carotid artery disease, venous insufficiency and vein mapping. Invasive vascular evaluation methods will be introduced through participation in the lab. Offered in the College for Adults.
Prerequisites: SON 2300, SON 2310.

SON 2610 Clinical Ultrasound I — 3 credits
These courses provide the opportunity to apply didactic knowledge to the clinical environment. Students will work under the guidance of registered sonographers in hands-on ultrasound scanning in abdominal, OB/GYN, vascular and superficial parts ultrasound. Students will be at their clinical internships three days per week in SON 2610, four days per week in SON 2620 and five days per week in SON 2630. Offered in the College for Adults.
Prerequisites: Admission to the sonography program and successful completion of prior courses in the program progression. Courses must be taken in this order: SON 2610, SON 2620, SON 2630.

SON 2620 Clinical Ultrasound II — 4 credits
These courses provide the opportunity to apply didactic knowledge to the clinical environment. Students will work under the guidance of registered sonographers in hands-on ultrasound scanning in abdominal, OB/GYN, vascular and superficial parts ultrasound. Students will be at their clinical internships three days per week in SON 2610, four days per week in SON 2620 and five days per week in SON 2630. Offered in the College for Adults.
Prerequisites: Admission to the sonography program and successful completion of prior courses in the program progression. Courses must be taken in this order: SON 2610, SON 2620, SON 2630.

SON 2630 Clinical Ultrasound III — 6 credits
These courses provide the opportunity to apply didactic knowledge to the clinical environment. Students will work under the guidance of registered sonographers in hands-on ultrasound scanning in abdominal, OB/GYN, vascular and superficial parts ultrasound. Students will be at their clinical internships three days per week in SON 2610, four days per week in SON 2620 and five days per week in SON 2630. Offered in the College for Adults.
Prerequisites: Admission to the sonography program and successful completion of prior courses in the program progression. Courses must be taken in this order: SON 2610, SON 2620, SON 2630.

SON 2683 Directed Study — 3 credits
Directed study is provided for students whose unusual circumstances prohibit taking a regularly scheduled course but who need the material of that course to satisfy a requirement. Availability of this faculty directed learning experience depends on faculty time and may be limited in any given term and restricted to certain courses.

SON 2684 Directed Study — 4 credits
Directed study is provided for students whose unusual circumstances prohibit taking a regularly scheduled course but who need the material of that course to satisfy a requirement. Availability of this faculty-directed learning experience depends on faculty time and may be limited in any given term and restricted to certain courses.
Prerequisites: Faculty, department chair and dean approval.

SON 2982 Topics — 2 credits
This course is designed to help students understand the theory and develop the skills necessary for effective communication. The course explores verbal/non-verbal communication, interpersonal listening and feedback, passive and active listening, team development, and managing conflict.

SON 3305 Small Parts — 1 credit
This course will introduce you to the sonographic anatomy, physiology and pathology of the thyroid, breast, and GI tract. Musculoskeletal ultrasound will be introduced. Knowledge of these structures will be discussed and practiced in conjunction with SON 3310 Small Parts Lab.
Prerequisite: SON 1805.
SON 3310 Small Parts Lab — 1 credit
This course will introduce you to the scanning principles, techniques and protocols of the thyroid, breast, and GI tract. Musculoskeletal ultrasound will be introduced. Knowledge of these structures will be discussed and practiced in conjunction with SON 3305 Small Parts lecture.
Prerequisite: SON 1810.

SON 4010 Capstone Project — 1 credit
This course will provide the senior student the ability to apply the knowledge and skills learned in the previous courses and clinical internships that comprise the sonography program. The student’s project will have a theoretical/academic and applied components.
Prerequisite: IPE 4200W.