



### **Course Description**

#### **SON1100L | Principles and Protocols of Imaging | 2.00 credits**

The course covers sonographic principles, radiographic specialties, and hands on scanning. Laboratory experience includes an introduction to ultrasound imaging and clinical competencies. In radiographic specialties, there will be an introduction to CT, MRI, NM, and the areas of radiologic technology in order to discover how these modalities compliment sonography.

### **Course Competencies**

**Competency 1:** The student will demonstrate knowledge, comprehension, and application of photographic principles by:

1. Describing proper film handling.
2. Listing proper fil storage.
3. Listing the modalities to store images.

**Competency 2:** The student will demonstrate knowledge, comprehension, and application of radiologic specialties by:

1. Listing imaging modalities
2. Defining other imaging modalities
3. Explaining how basic knowledge of these other modalities can help a sonographer
4. Identifying examples of common pathologies on these other modalities that are also seen by sonography
5. Listing the advantages and disadvantages of other imaging and therapeutic modalities

**Competency 3:** The student will demonstrate knowledge, comprehension and application of ultrasound scanning principles by:

1. Familiarizing themselves with the protocols and images for the basic abdominal, obstetrical, gynecological, and cardiac exams
2. Demonstrating proper machine start-up procedures
3. Reviewing pertinent patient history
4. Obtaining proper images and landmarks for echocardiography basic views
5. Obtaining proper images and landmarks for abdominal ultrasound exams
6. Obtaining proper images and landmarks for thyroid ultrasound exams
7. Obtaining proper images and landmarks for pelvic ultrasound exams
8. Identifying proper transducer for each of the specialties and protocols listed above
9. Identifying proper transducer position for each of the specialties and protocols listed above
10. Differentiating normal and abnormal structures
11. Setting proper techniques
12. Completing lab scanning competencies

**Competency 4:** The student will demonstrate knowledge of scanning techniques by:

1. Identifying the ultrasound machine key functions
2. Demonstrating how to change transducers
3. Attaining images for the abdomen, gynecological, and echocardiography protocol
4. Working with the ultrasound simulator
5. Discussing ultrasound techniques
6. Demonstrating difference in resolution using different frequency transducers
7. Demonstrating the differences in an image by changing the dynamic range
8. Discussing artifacts such as shadowing and aliening and discussing techniques to compensate for them
9. Identifying the effects of the TGC controls

### **Learning Outcomes**

- Communicate effectively using listening, speaking, reading, and writing skills
- Use quantitative analytical skills to evaluate and process numerical data