Module Specification

Module Summary Information

1	**Module Title**	Anatomy and Physiology for Ultrasound Practice
2	**Module Credits**	40
3	**Module Level**	4
4	**Module Code**	RAD4041

5	**Module Overview**

Rationale

Effective and safe clinical practice in medical ultrasound requires the practitioner sonographer to draw on their professional knowledge and understanding of human anatomy and physiology. In the clinical setting you will be required to make judgments regarding the sonographic appearance of the body's major organs and vessels, and your decision making will be based on sound theoretical understanding on the function and morphology of the human body.

Alignment with Programme Philosophy and Aims

This module equips you to develop core skills and knowledge expected of the sonographer. You will be responsible for your own learning, and will reflect on your clinical experience during your academic studies, and similarly will apply knowledge to practice which will involve provision of effective care to a diverse range of service users from a range of cultural backgrounds. Your learning will be practice-focused and you will apply your skills amongst larger multidisciplinary teams within the practice setting. Your learning will be focused on your developing skills within the field of medical ultrasound and you will pursue the goal of professional and self-development towards this goal.

Learning and Teaching Strategy

This module will begin by providing you with a sound foundation for further academic and clinical studies into human biology throughout the course. You will be taught the conventions of terminology and description used in the study of anatomy and will be provided with opportunities to apply this knowledge within your clinical placements. You will develop an understanding of the function of organs within the torso with particular focus on the applied physiology and function of abdominal and pelvic organs. You will receive instruction in the theory and practice of ultrasound imaging of these organs, coupled with a workbook which will be completed throughout the module both at university and whilst on placement. Your studies will commence with ensuring you are familiar with core aspects of medical terms used within the clinical setting in order to enable you to interact effectively within the clinical setting.

You will also learn the ultrasound appearances of normal abdominal and pelvic anatomy together with ultrasound techniques for imaging the major organs. This learning will take place in the classroom as lectures, seminars and interactive workshops including the use of ultrasound simulators, and you will be able to apply this developing understanding whilst in the clinical setting. Where topics are common

to students within other heath profession courses (such as diagnostic radiography and radiotherapy) you may share your learning alongside those students. You will also work independently under guidance from your tutors and will access a range of printed and electronic resources to support your learning.

Examples of tasks students will undertake in this module include:

- Employing your understanding of the human body to routine ultrasound practice
- Investigating the morphology and function of the human body via interaction with a variety of learning resources including medical images, skills simulators and anatomical models
- Exploring case studies relating to disordered anatomy and physiology within the context of pathology that may be detected using ultrasound examination.

Students will undertake 400 hours of learning activities within this module, which will include a minimum of 30 hours contact time at the university.

Assessment Strategy

You will undertake a classroom based examination and complete a record of your developing clinical competence.

6	Indicative Content
Anatomy and Physiology Introduction (conventions and terms) U/S terminology, scan planes and orientation The cardiovascular and respiratory system The Anatomy and Physiology of the Urinary Tract Anatomy and Physiology of the digestive system Anatomy and physiology of the liver, gall bladder and biliary tree Female Reproductive System. Overview of abdominal ultrasound Recognising the normal US anatomy/ artefacts Renal, bladder and Aorta /para aortic normal ultrasound appearances, scan technique Normal spleen and Lymphatic ultrasound appearances, scan technique Pancreas and Gallbladder- normal appearances and scanning techniques introducing gallstones ultrasound appearances, Porta hepatis scan technique workshop –Common Bile Duct, Hepatic Artery and Portal Vein assessment + IVC Gynaecological scanning technique-Uterus and ovaries	

7	Module Learning Outcomes On successful completion of the module, students will be able to:	
	1	Demonstrate understanding of the normal anatomy of the thorax, abdomen and pelvis.
	2	Explain the physiological functions of principal organs within the thorax, abdomen and pelvis.
	3	Relate relevant understanding of anatomy and physiology of the abdomen and pelvis to the ultrasound image.
	4	Demonstrate safe and effective clinical and communication skills, including ultrasound technique, commensurate with the expected competency level of a level 4 student sonographer.

8	Module Assessment		
Learning Outcome			
	Coursework	Exam	In-Person
1,2,3		X	
4			X

9	Breakdown Learning and Teaching Activities
Learning Activities	**Hours**
Scheduled Learning (SL) includes lectures, practical classes and workshops, peer group learning, Graduate+, as specified in timetable	50
Directed Learning (DL) includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning, as directed on VLE	300
Private Study (PS) includes preparation for exams	50
Total Study Hours:	400 *Total hours of placement at L4, 578 hours