

## Module Specification

### Module Summary Information

1	<b>Module Title</b>	Early Pregnancy Ultrasound
2	<b>Module Credits</b>	40
3	<b>Module Level</b>	7
4	<b>Module Code</b>	LBR7553

5	<b>Module Overview</b>
<p><b>Rationale</b></p> <p>“Early Pregnancy Ultrasound” is the only module for the course “Focused course in Early Pregnancy Ultrasound” which is one of five courses designed to allow midwives and other health care workers to extend their role into a specific area of obstetric ultrasound.</p> <p>The five courses are collectively termed: Focused courses in Obstetric Ultrasound and comprise of</p> <ul style="list-style-type: none"> <li>• First Trimester Ultrasound Screening</li> <li>• Third Trimester Fetal Surveillance</li> <li>• Obstetric Ultrasound Dating for Family Planning</li> <li>• Early Pregnancy Ultrasound</li> <li>• Ultrasound for Fertility</li> </ul> <p>The “Early Pregnancy Ultrasound” module aims to prepare you for a career using medical ultrasound, where you are continually seeking to improve yourself, the patient experience and your own diagnostic expertise. This module will combine the theoretical and clinical skills in early pregnancy ultrasound that enable you to become a competent ultrasound practitioner.</p> <p>Your ability to understand and operate sophisticated ultrasound equipment is a major factor contributing to your diagnostic expertise and a sound grasp of patient care, professional and management issues is essential for improving the patient’s experience. In order to facilitate these aims this module introduces the principles of ultrasound physics and imaging technology so that you are able to operate ultrasound equipment safely and effectively. An understanding of ultrasound physics is essential so that you understand how the image is produced and how to recognise different body tissues by their ultrasound appearance. Knowledge of ultrasound equipment and machine controls is essential not only to obtain diagnostic images but to improve the quality of those images by applying this knowledge in the clinical setting.</p> <p>This module also enables you to develop a critical understanding of the patient care, management, medico- legal and ethical issues which contribute to the patient experience in the delivery of a safe and effective ultrasound service.</p> <p>The module uses experiential learning within the clinical placement as a foundation for safe and ethical ultrasound practice. In order to support your clinical learning, you are required to complete 160 “hands on” practical scanning hours, undertaking a minimum of 200 examinations across a prescribed</p>	

range of clinical referrals. This will enable you to develop the skills required to perform a complete and competent ultrasound examination using both transabdominal and transvaginal methods, recognise normal ultrasound appearances including anatomical variants, and recognise abnormal pathologies and disease processes. You will be supported in developing the skills necessary to produce an accurate scan report, recognising any potential differential diagnoses, and making recommendations on patient management where appropriate.

### **Alignment with Programme Philosophy and Aims**

This module has clinical and academic components, and you will be supported to help progress from trainee to competent practitioner in early pregnancy ultrasound on successful completion of this module. This module aims to provide you with a thorough knowledge of embryology, normal fetal development, and common gynaecological pathology, which you will apply in relation to the ultrasound appearances of the developing fetus and female reproductive organs, using both transabdominal and transvaginal imaging techniques.

Transvaginal examinations require additional skills and responsibilities including: obtaining Patient consent for scans of an intimate or invasive nature, adherence to departmental infection control policies, safe scanning techniques, latex allergy requirements and the appropriate use of chaperones. You will be supported in these essential requirements, ensuring that the patient's privacy and dignity is maintained throughout the examination, whilst ensuring that you are aware of the medico-legal responsibilities of a qualified sonographer when undertaking transvaginal examinations.

This module prepares you for the role of an ultrasound practitioner by providing you with the learning opportunities to develop your knowledge of ultrasound physics and technology; such that you have a sound understanding of how the ultrasound image is produced. In addition you will learn how to manipulate and optimise the image without compromising patient safety.

You will be supported in developing your practical ultrasound skills, and adapting your technique in examining complex referrals, including clinically unwell or technically challenging patients.

A qualified ultrasound practitioner is required to communicate ultrasound findings, including adverse outcome and pregnancy loss to peers, medical professionals, clinicians, auxiliary staff, patients and carers, and present cases at clinical multidisciplinary team (MDT) meetings. This module progresses you further on your journey into this professional multidisciplinary skill set for patients undergoing ultrasound in early pregnancy. You will develop your understanding of the diverse cultures from which your patients come, within the context of worldwide patient care.

You will be supported in developing the necessary communication skills required to verbally deliver adverse outcomes directly to the patient, in a sympathetic manner using appropriate terminology, ensuring all patients are treated with dignity and respect, appropriate to their individual needs. You will be provided with advice and support mechanisms to help you develop resilience to deal with this complex and emotionally demanding role.

This module supports you in achieving the skills and knowledge necessary to competently complete a full obstetric ultrasound examination in the first trimester, using both transabdominal and transvaginal techniques.

## Learning and Teaching Strategy

Early Pregnancy Ultrasound is one of five modules offered in the “Focused Courses in Obstetric Ultrasound” and students normally enrol on only one of these courses. The majority of module content is common to all five courses and so interdisciplinary and shared learning is core within the module – you will be in the same classroom as students on the other courses for five of the six days of delivery. There will also be one day (Day Three) devoted specifically to early pregnancy.

Keynote lectures will provide you with an overview of normal fetal development processes and the common fetal abnormalities which may be detected on ultrasound in the first trimester. This knowledge will then be applied to ultrasound practice using case based workshops, small group activities and real life scenarios using workshops and practical sessions on the ultrasound simulator.

You will be supported in developing your practical ultrasound skills in the clinical department, and by working through the personalised learning practical ultrasound assessments in early pregnancy ultrasound available on the ultrasound simulator. The use of the simulator allows you to develop your skills at your own pace, and encourages personalised reflection as well as supporting tutor feedback through analysis of activity completed.

Emphasis will be on your use of online resources provided via Moodle to prepare for workshops, seminar groups and small group tutorials. This module also makes use of e-learning resources and activities including, the Health Education England- e-Learning for Healthcare (e-LfH) e-learning project and the Miscarriage Association. These resources have been developed with a range of professional bodies and their use will enhance your learning, support the teaching methods on the Module and provide a valuable reference point for you, encouraging you to become a lifelong learner. This module will comprise of a number of approaches to learning.

This module prepares you for the role of a sonographer by providing you with the learning opportunities to develop your knowledge of ultrasound physics and technology; such that you have a sound understanding of how the ultrasound image is produced. In addition you will learn how to manipulate and optimise the image without compromising patient safety.

## Assessment Strategy

There are three items of assessment for this module – you will be required to complete a Clinical Portfolio, a written case study and a Viva Voce.

6	Indicative Content
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<p>Introduction and overview of module, role of ultrasound in antenatal care. Scanning technique and terminology. Ultrasound measurements and dating the pregnancy. Breaking bad news, principles of ultrasound imaging, ultrasound equipment controls. Improving the accuracy of ultrasound measurements, antenatal screening using ultrasound. Medico-legal issues, ergonomics. The Female Pelvis: Ultrasound, anatomy and physiology. Overview of gynaecological ultrasound/TV for obstetrics. First trimester protocols and clinical indications. Multiple pregnancy. Obstetric ultrasound for family planning. Fetal abnormalities in the first trimester. Ultrasound in early pregnancy. NT scanning. Fertility Ultrasound. Improving the accuracy of ultrasound measurements. Antenatal</p>
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screening using ultrasound. Medico-legal issues, ergonomics. Mid-Trimester anomaly scan. Safe use of ultrasound. Features of the ultrasound image. Principles of ultrasound imaging questions. Report writing, patient care and medico-legal review

7 Module Learning Outcomes	
On successful completion of the module, students will be able to:	
1	Apply a detailed understanding of ultrasound physics and imaging technology, including issues and recommendations concerning the safe use of ultrasound, to the clinical setting.
2	Evaluate the medico-legality of an ultrasound examination request for a full range of examinations (including transvaginal scans) and using safe scanning practices autonomously complete a dynamic ultrasound examination in the first trimester.
3	Apply a detailed knowledge of embryology and normal fetal development to make a diagnosis, or differential diagnosis, and communicate the ultrasound examination results both orally and in written reports, using audience appropriate terminology.
4	Critically evaluate the role of ultrasound and relate theory to practice in the clinical setting, in order to contribute to patient diagnosis, management and service delivery, in a range of normal and abnormal outcomes in early pregnancy.

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

9 Breakdown Learning and Teaching Activities	
Learning Activities	Hours
<b>Scheduled Learning (SL)</b> includes lectures, practical classes and workshops, peer group learning, Graduate+, as specified in timetable	36
<b>Directed Learning (DL)</b> includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning, as directed on VLE	250
<b>Private Study (PS)</b> includes preparation for exams	114
<b>Total Study Hours:</b>	400

