Science and Technology of Medical Ultrasound

It has been recognised for many years that staff taking on an extended role in an area such as Medical Ultrasound should have a Postgraduate qualification. This ensures that patients and the public may be confident in the professional skills of the personnel performing their ultrasound examination. The Society and College of Radiographers and The British Medical Ultrasound Society have produced clear guidelines for good practice in diagnostic ultrasound. (Guidelines for Professional Ultrasound Practice, SCoR and BMUS 2015). It is therefore important that the sonographer has the underpinning knowledge in the science and technology of medical ultrasound to enable them to scan safely and produce high quality images.

Dates: 6th February, 7th March and 4th May 2017. Semester 2

Credits: 30 credit points at level 7 (Masters level) Jordanstown campus
Programme outline

Introduction to the facilities in the Library, Blackboard Learn, Advancing Practice Programme, the module timetable and methods of assessment. Ergonomic issues relating to medical ultrasound.

Day 2 1 March 2016 (5pm). Doppler Ultrasound and Quality Assurance.

Day 3 28 April 2016 (6pm) Computer based on line assessment.

Semester Two: Online tutorials throughout the Semester: 21st February, 21st March and 4th April 2017 at 7pm

Professional body accreditation

This module is accredited by the Consortium for the Accreditation of Sonographic Education (CASE)

Introduction

Within the medical imaging field it is essential that staff performing ultrasound scans should learn to use the equipment correctly and safely, enabling them to produce high quality images. This module offers Allied Health Professionals an opportunity to develop their knowledge in the use of medical ultrasound equipment. It is suitable for Radiographers from Band 5, Clinical Physiologists and Midwives who intend to image patients using medical ultrasound. Students must have the agreement of their Clinical Manager that they will be able to spend a minimum of 14 hours per week for the duration of the module in the Ultrasound department gaining 'hands on' experience in scanning techniques. The student’s clinical manager will be required to nominate a suitably qualified Clinical Supervisor. The identified individual should be someone who possesses an appropriate Postgraduate Diploma in medical ultrasound and has a minimum of one year’s post qualification experience, has substantial current clinical experience, undertakes ongoing continuous professional development and be available to supervise your work on a daily basis. Ideally this should be the lead sonographer within your department. The student will scan under the supervision and with the support of a suitably qualified ‘supervisor’. The student will be required to supply the name of their nominated Supervisor by Monday 30th January 2017 to the module co-ordinator directly. It is important to note that the Science and Technology of Medical Ultrasound module is a pre-requisite and must be successfully completed before any other ultrasound module.

Who should attend?
Radiographers from Band 5, Clinical Physiologists and Midwives who are involved in performing ultrasound imaging examinations on patients in their care.

Course content

The module covers the physical principles of ultrasound production and detection, the use of ultrasound imaging equipment, scan modes and the application of ultrasound technologies to optimise the production and recording of diagnostic ultrasound images. Recent technological developments in medical ultrasound are also addressed. The formation of ultrasound artefacts are elucidated enabling distinction between true pathology and artefact. Insonation safety and potential bio-effects relating to medical ultrasound, Quality Assurance and equipment performance testing and ergonomic issues relating to medical ultrasound are also covered. The integration of course content promotes a holistic approach to the safe and effective use of ultrasound imaging equipment.

The delivery of the module consists of two face to face lectures and a combination of online tutorials via Blackboard learn, the University’s online distance learning medium. This will involve the student accessing lecture materials on line and taking part in tutorial sessions in the evenings. Participation in the on line tutorials is recommended to gain the most from the module.

Assessment

- One 3000 word written assignment (to be submitted Monday 20th March 2017)
- One Computer based on line assessment to be held at Ulster University Thursday 4th May 2017
- One reflective account. (to be submitted Thursday 12th May 2017)

Further information

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Module Code RAD808 CRN-28938

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