Module Specification

Applications of Diagnostic Imaging Equipment

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Contents

Part 1: Information

Module title: Applications of Diagnostic Imaging Equipment

Module code: UZYYDV-30-2

Level: Level 5

For implementation from: 2024-25

UWE credit rating: 30

ECTS credit rating: 15

College: College of Health, Science & Society

School: CHSS School of Health and Social Wellbeing

Partner institutions: None

Field: Allied Health Professions

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The purpose of this module is to provide the underpinning knowledge and critical understanding of the variety of specialised equipment used in the imaging of anatomical systems. The module content also encourages the critical comparison of equipment delivering ionising and non-ionising radiation for the purpose of producing diagnostic images.

Features: Not applicable

Educational aims: During this module students are supported to undertake diagnostic imaging Quality Assurance tests for plain imaging and Computed Tomography (CT) equipment leading to the development of authentic problem solving skills and approaches.

Outline syllabus: Practical radiation applications:

Radiation dosimetry, dosimeters, and detectors

Digital Imaging:

Computed Radiography and Digital Radiography systems

Post-processing of digital images

Digital Imaging and Communication in Medicine (DICOM)

Patient Archiving and Communication Systems (PACS) and networking topologies

Tele-radiography

Data security

Radiographic equipment:

A range of imaging equipment used for imaging patients for non-complex and specialist examinations e.g. Accident and emergency; mammography; neuroradiography; interventional procedures; operating theatre and mobile radiography; patients with special needs (children, elderly, pregnancy, physically challenged)

Application of Radiographic Equipment:

Evaluate the technical performance and the "fitness for purpose" of radiographic

equipment, and alternative imaging modalities (e.g. ultrasound, nuclear medicine and Positron Emission Tomography (PET), CT, Magnetic Resonance Imaging (MRI), digital radiography)

Quality and safety issues:

Quality assurance testing, safety devices, automatic exposure devices

Health and safety issues (e.g. radiation protection)

Part 3: Teaching and learning methods

Teaching and learning methods: Scheduled learning includes lectures, seminars, tutorials, practical classes and simulation in Computed Tomography and X-ray.

Independent learning includes hours engaged with essential reading, and practical session preparation.

Students will also be required to engage with subject specific vodcasts with associated self-directed leaning tasks, directed reading, and engagement with online activities.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Demonstrate a critical understanding and application of the theoretical principles underpinning diagnostic imaging and image processing equipment

MO2 Analyse the technical performance of diagnostic imaging equipment and its fitness for the role

MO3 Critically evaluate the comparative radiation dose in the utilisation of different imaging equipment

MO4 Demonstrate the impact of the radiographer in the context of quality assurance and service provision

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 0

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://rl.talis.com/3/uwe/lists/6DE8E0D8-15ED-7B56-5765-61BF80DFFADB.html

Part 4: Assessment

Assessment strategy: Assessment Task: 2.5 hour exam

Rationale: The examination will allow the student to demonstrate a depth and breadth of knowledge and understanding around the fitness for the role of imaging equipment, quality assurance, and health and safety issues associated with diagnostic imaging. The exam will be held under controlled conditions due to the need for students to be tested on their ability to recall factual information without access to resources, and use images, as preparation for their future role.

Formative Assessment

There will be QA worksheets and activities, and test questions, and a mock exam paper available to enable practice to occur in preparation for the exam.

Assessment tasks:

Examination (First Sit)
Description: 2.5 hour exam
Weighting: 100 %
Final assessment: Yes
Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Examination (Resit)
Description: 2.5 hour exam
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Diagnostic Radiography {Apprenticeship-UWE} [Glenside] BSc (Hons) 2023-24