



Module Specification

Applications of Diagnostic Imaging Equipment

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Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	4
Part 4: Assessment.....	5
Part 5: Contributes towards	6

Part 1: Information

Module title: Applications of Diagnostic Imaging Equipment

Module code: UZYYDV-30-2

Level: Level 5

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Health & Applied Sciences

Department: HAS 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 there are practical sessions which enable students to undertake diagnostic imaging Quality Assurance tests for plain imaging and Computed Tomography (CT) equipment leading to the provision of a report.

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: See Educational Aims

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 = 300

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: There are two summative assessment tasks;

1.5 hour equivalent on line assessment; this assessment 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 .

A 2000 word report of Quality Assurance testing; the process of carrying out a practical session of Quality Assurance (QA) testing on a piece of CT/Plain imaging equipment enables the application of theory to practice in the compliance of the Ionising Radiation Regulations (IRR) 2017. The completion of a written report of the QA testing enables students to demonstrate that they are able to undertake, analyse and propose actions on the results of imaging quality checks.

Formative Assessment

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

Assessment tasks:

Examination (First Sit)

Description: 1.5 hour exam

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO4

Report (First Sit)

Description: 2000 word Quality Assurance report

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO3

Examination (Resit)

Description: 1.5 hour exam

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO4

Report (Resit)

Description: 2000 word Quality Assurance report

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Diagnostic Radiography {Apprenticeship-UWE} [Glenside] BSc (Hons) 2022-23