# MODULE SPECIFICATION

| Part 1: Information | | | |
|---|---|---|---|
| Module Title | Science and Instrumentation in Diagnostic Imaging | | |
| Module Code | UZYS1N-15-2 | Level | Level 5 |
| For implementation from | 2020-21 | | |
| UWE Credit Rating | 15 | ECTS Credit Rating | 7.5 |
| Faculty | Faculty of Health & Applied Sciences | Field | Allied Health Professions |
| Department | HAS Dept of Allied Health Professions | | |
| Module type: | Standard | | |
| Pre-requisites | None | | |
| Excluded Combinations | Intermediate Diagnostic Imaging Studies 2020-21 | | |
| Co- requisites | None | | |
| Module Entry requirements | None | | |

**Part 2: Description**

**Educational Aims:** See learning outcomes.

**Outline Syllabus:** Practical radiation applications:

Sources of Radiation Industrial and medical uses of radiation
Radiation dosimetry, dosimeters, and detectors

Digital Imaging:

Computerised 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
Teleradiography
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 role" of radiographic equipment, and alternative imaging modality/ies (e.g. ultrasound, nuclear medicine and PET, CT, MRI, digital radiography)

Quality and safety issues:

quality assurance testing, safety devices, automatic exposure devices

Health and safety issues:

e.g. radiation protection, Infection control, manual handling

**Teaching and Learning Methods:** Scheduled learning lectures, seminars, tutorials, practical classes

Independent learning includes hours engaged with essential reading, case study preparation, practical session preparation. These sessions constitute an average time per level as indicated in the table below.

36 contact hours will be achieved via blended learning.

There will be 36 hours of scheduled learning to include lectures, seminars and practical sessions

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

| **Part 3: Assessment** | | | |
|---|---|---|---|
| Online Examination (with 24 hour submission window)<br><br>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. | | | |
| | | | |
| First Sit Components | **Final Assessment** | **Element weighting** | **Description** |
| Examination (Online) - Component A | ✓ | 100 % | Online Examination (24 hour submission window) |
| Resit Components | **Final Assessment** | **Element weighting** | **Description** |
| Examination (Online) - Component A | ✓ | 100 % | Online Examination (24 hour submission window) |

**Part 4: Teaching and Learning Methods**

Learning Outcomes

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

| Module Learning Outcomes | Reference |
|---|---|
| Demonstrate a critical understanding and application of the theoretical principles underpinning diagnostic imaging and image processing | MO1 |
| Analyse the technical performance and fitness for role of diagnostic imaging equipment | MO2 |
| Critically evaluate the comparative radiation dose in the utilisation of different imaging equipment | MO3 |
| Discuss the role of the radiographer in the context of quality assurance and service provision | MO4 |

Contact Hours

| | |
|---|---|
| **Independent Study Hours:** | |
| Independent study/self-guided study | 114 |
| **Total Independent Study Hours:** | 114 |
| **Scheduled Learning and Teaching Hours:** | |
| Face-to-face learning | 36 |
| **Total Scheduled Learning and Teaching Hours:** | 36 |
| **Hours to be allocated** | 150 |
| **Allocated Hours** | 150 |

Reading List

*The reading list for this module can be accessed via the following link:*

https://uwe.rl.talis.com/modules/uzys1n-15-2.html

**Part 5: Contributes Towards**

This module contributes towards the following programmes of study: