






ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data					
Module Title	Science and Instrumentation in Diagnostic Imaging				
Module Code	UZYS1N-15-2	Level	2	Version	1
Owning Faculty	Health and Applied Sciences	Field	Allied Health Professions		
Contributes towards	BSc (Hons) Diagnostic Imaging				
UWE Credit Rating	15	ECTS Credit Rating	7.5	Module Type	Standard
Pre-requisites	Radiation Physics UZYSXS-15-1 Applied Sciences UZYSXJ-15-1		Co- requisites	None	
Excluded Combinations	UZYS9U-40-2 UZYS9V-20-2		Module Entry requirements	N/A	
Valid From	September 2015		Valid to	September 2021	

CAP Approval Date	30 April 2015
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Part 2: Learning and Teaching	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <ul style="list-style-type: none"> demonstrate a critical understanding and application of the theoretical principles underpinning diagnostic imaging and image processing(Component A) analyse the technical performance and fitness for role of diagnostic imaging equipment (Component A) critically evaluate the comparative radiation dose in the utilisation of different imaging equipment (Component A) discuss the role of the radiographer in the context of quality assurance and service provision (Component A)
Syllabus Outline	<p><u>Practical radiation applications:</u> Sources of Radiation Industrial and medical uses of radiation Radiation dosimetry, dosimeters, and detectors</p> <p><u>Digital Imaging:</u> 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</p>

	<p><u>Radiographic equipment:</u></p> <p>A range of imaging equipment used for imaging patients for non-complex and specialist examinations e.g.</p> <p>accident and emergency; mammography; neuroradiography; interventional procedures; operating theatre and mobile radiography; patients with special needs (children, elderly, pregnancy, physically challenged)</p> <p><u>Application of Radiographic Equipment:</u></p> <p>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)</p> <p><u>Quality and safety issues:</u></p> <p>quality assurance testing, safety devices, automatic exposure devices</p> <p><u>Health and safety issues:</u></p> <p>e.g. radiation protection, Infection control, manual handling</p>																																			
Contact Hours	<p>36 contact hours will be achieved via blended learning.</p> <ul style="list-style-type: none"> • 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 learning tasks, directed reading, reflective writing and engagement with online activities including Shaderware. 																																			
Teaching and Learning Methods	<p>Scheduled learning lectures, seminars, tutorials, practical classes</p> <p>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.</p>																																			
Key Information Sets Information	<p>Key Information Sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are interested in applying for.</p> <table border="1" data-bbox="459 1592 1370 1939"> <thead> <tr> <th colspan="5">Key Information Set - Module data</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </thead> <tbody> <tr> <td colspan="4"><i>Number of credits for this module</i></td> <td style="border: 2px solid black;">15</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>Hours to be allocated</th> <th>Scheduled learning and teaching study hours</th> <th>Independent study hours</th> <th>Placement study hours</th> <th>Allocated Hours</th> </tr> <tr> <td>150</td> <td>36</td> <td>114</td> <td></td> <td>150</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;"></td> </tr> </tbody> </table> <p>The table below indicates as a percentage the total assessment of the module which constitutes a -</p>	Key Information Set - Module data										<i>Number of credits for this module</i>				15						Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours	150	36	114		150					
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Written Exam: Unseen written exam,

Please note that this is the total of various types of assessment and will not necessarily reflect the component and module weightings in the Assessment section of this module description:

Total assessment of the module:			
Written exam assessment percentage		100%	
Coursework assessment percentage		0%	
Practical exam assessment percentage		0%	
		100%	

Reading Strategy

Core reading

Any core reading will be indicated clearly, along with the method for accessing it, eg students may be expected to purchase a set text, be given a study pack or be referred to texts that are available electronically, or in the Library. Module guides will also reflect the range of reading to be carried out.

Further reading

All students are encouraged to read widely using the library search, a variety of bibliographic and full text databases and Internet resources. Many resources can be accessed remotely. Guidance to some key authors and journal titles available through the Library will be given in the module handbook and updated annually. Assignment reference lists are expected to reflect the range of reading carried out.

Access and skills

Students are expected to be able to identify and retrieve appropriate reading. This module offers an opportunity to further develop information skills introduced at Level 1. Students will be given the opportunity to attend sessions on selection of appropriate databases and search skills. Additional support is available through the library web pages, including interactive tutorials on finding books and journals, evaluating information and referencing. Sign-up workshops are also offered by the Library.

Indicative Reading List

The following list is offered to provide validation panels/accrediting bodies with an indication of the type and level of information students may be expected to consult. As such, its currency may wane during the life span of the module specification. *Current* advice on additional reading will be available via the module handbook or Blackboard pages.

Carver, B. (2012) *Medical Imaging: Techniques, Reflection and Evaluation*. 2nd ed. London: Churchill Livingstone

Easton, S. (2008) *An Introduction to Radiography*. London: Churchill Livingstone

	<p>Suetens, P. (2009) <i>Fundamentals of Medical Imaging</i>. Cambridge: Cambridge University Press.</p> <p>Graham, D., Cloke, P., and Vosper, M. (2012) <i>Principles and Applications of Radiological Physics</i>. London: Churchill Livingstone,</p>
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Part 3: Assessment	
Assessment Strategy	<p>Examination – 1.5 hours</p> <p>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 (under controlled conditions).</p>

Identify final assessment component and element	Component A	
% weighting between components A and B (Standard modules only)	A:	B:
	100%	
First Sit		
Component A (controlled conditions) Description of each element	Element weighting	
1. Exam (1.5 Hour)	100%	

Resit (further attendance at taught classes is not required)		
Component A (controlled conditions) Description of each element	Element weighting	
1. Exam (1.5 Hour)	100%	
<p>If a student is permitted an EXCEPTIONAL RETAKE of the module the assessment will be that indicated by the Module Description at the time that retake commences.</p>		