University of the West of England
BRISTOL

ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Fundamental Applications of Computed Tomography					
Module Code	UZYRMU-30-M		Level	M	Version	1
UWE Credit Rating	30	ECTS Credit Rating	15	WBL module?	No	
Owning Faculty	Health and Applied Sciences		Field	Allied Health Professions		
Department	Allied Health Professions		Module Type	Professional Practice		
Contributes towards	CPD module					
Pre-requisites	None		Co- requisites	None		
Excluded Combinations	UZYSDL-20-M Clinical Protocols and Fundamental Applications of Computed Tomography		Module Entry requirements	Radiography professional qualification or relevant clinical Computed Tomography (CT) experience		
Valid From	September 2015		Valid to	September 2021		

CAP Approval Date	24 March 2015

Part 2: Learning and Teaching	
Learning Outcomes	On successful completion of this module students will be able to: • Critically evaluate CT protocols for various anatomical regions (Component A) • Demonstrate a critical knowledge of the legal, ethical and organisational aspects of current practice in Computerised Tomography (Component B) • Critically evaluate contemporary research concerning CT technology in order to inform practice, and implement new approaches where appropriate (Component A) • Critically evaluate the contribution that CT makes to diagnostic tests/procedures or radiotherapy practice, in the context of differential diagnosis (Component B) • Perform a comprehensive range of CT procedures skillfully, safely, and to a high standard, demonstrating an ability to adapt effectively to new or unusual situations (Component A) • Justify the contribution and the role of CT to the overall management of patients (Component B)
Syllabus Outline	**Clinical Protocols** Rationale for the use, adaptation and development of CT acquisition protocols in

	diagnostic and radiotherapy CT units. Consideration for patient preparation including: • Head, neck, neurology & ear, nose and throat (ENT) • Cancer staging (neck. chest, abdomen & pelvis) • Angiography • Trauma (Head) • Trauma / Orthopaedics • Respiratory (pulmonary embolism / lung cancer/ 4DCT) • Radiotherapy planning (including stereotactic frames) • Cardiac imaging (fundamental knowledge) • CT Colonography (screening & symptomatic) **Management and Organization** • Consideration for organization and management of CT service provision • Ethical and legal issues relating to CT practice, to include Ionising Radiation (Medical Exposures) Regulations (2000) (IR(ME)R) and Ionising Radiation Regulations (IRR) (1999). **Patient Care** • Evaluate patient care, preparation and quality enhancement to service delivery • Contrast the scanning requirements of specialist patient groups including anaesthetized, sedated and paediatric patients • Appraise the use of contrast agents within CT relating to risk/ benefit issues and dealing with adverse reactions
Contact Hours	Contact hours will be achieved via blended learning education. This will be equivalent to 72 hours. • Some material will be videoed lectures made available on Black-Board for all learners. Learners will have the option to attend these recordings but this will not be compulsory. • Subject specific vodcasts with associated self-directed leaning tasks. • Work based appraisal completion. Contact with the module leader for discussion of module related issues will be facilitated by e-mail, telephone conversations and discussion boards.
Teaching and Learning Methods	**Scheduled Learning**. Teaching and learning methods will include, but not be limited to, asynchronous delivery of lecture material through narrated presentations, notes and other guided reading, VLE discussion board fora with specific objectives, workplace tasks, and other study tasks deemed appropriate to the development of student knowledge. Formative feedback on allocated study tasks will be provided. **Independent Learning.** Includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc. These sessions constitute an average time per level as indicated in the table below. **Placement Learning**. Students on this module will be working in the field of Computed Tomography. There will be competency based tasks to complete locally as per the clinical portfolio component. This will be assessed with on-site Mentors.
Key Information Sets Information	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.

Key Information Set - Module data

Number of credits for this module	30

Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours
300	72	180	48	300

The table below indicates as a percentage the total assessment of the module which constitutes a -

Coursework: clinical portfolio of evidence with accompanying case-study evaluation

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	0%
Coursework assessment percentage	100%
Practical exam assessment percentage	0%
	100%

Reading Strategy

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

All students will be encouraged to make full use of the electronic resources available to them through membership of the University. These include a range of electronic journals and a wide variety of resources available through web sites and information gateways. The University Library's web pages provide access to subject relevant resources and services, and to the library catalogue. Many resources can be accessed remotely.

Students will be presented with opportunities within the curriculum to develop their information retrieval and evaluation skills in order to identify such resources effectively. Additional support is available through the iSkillZone available via the Library web pages:
http://iskillzone.uwe.ac.uk/RenderPages/RenderHomePage.aspx
This includes interactive tutorials on search skills and on the use of specific electronic library resources.

Further reading will be required to supplement textbooks and other suggested readings. The purpose of this further reading is to ensure students are familiar with current research and material specific to their requirements from the academic literature. Students are expected to identify all other reading relevant to their chosen topic for themselves. They will be required to read widely using the library search, a variety of bibliographic and full text databases, and Internet resources.

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. A variety of textbooks on Computed Tomography are available from the library online. • Dawson, P. (2006) *"Protocols for Multislice Helical Computed Tomography- The Fundamentals",* Taylor & Francis: London • Hofer, M. (2000) "*CT Teaching Manual"* Thieme: London • Kalender, W.A. (2005) "*Computed Tomography: Fundamentals, System Technology, Image Quality & Applications*", Wiley: Germany • Marchal, G., Vogl, T.J., Heiken, J.P. & Rubin, G.D. (2006) "*Multidetector-Row Computed Tomography- Scanning and Contrast Protocols"* Springer: Italy • Prokop, M. & Gatanski, M. (2003) *"Spiral and Multislice Computed Tomography of the Body",* 2nd. Ed. Theime: New York. • Royal College Of Radiologists (2010) *"Standards for Iodinated Intravascular Contrast Agent Administration To Adult Patients"*, RCOR: London • Seernam, E. (2008) *"Computed Tomography: Physical Principles, Clinical Applications and Quality Control (Contempory Imaging Techniques)",* 3rd ed. Saunders: Philadelphia **Journals** Some journals are available on-line, via the electronic resources section (Athens password required) of the UWE library webpage. Learners are expected to identify further material for this module American Journal of Roetgenology British Journal of Radiology Clinical Radiology Journal of Computer Assisted Tomography (Computed Tomography) Radiography Radiology Seminars in Ultrasound, CT, MR Synergy **Electronic Resources** CINAHL COCHRANE LIBRARY MEDLINE EMBASE **Websites** http://www.toshiba-europe.com http://www.gehealthcare.com http://www.medical.siemens.com http://www.netforum.medical.philips.com http://www.oncologychannel.com http://www.appliedradiology.com http://www.ctisus.com http://www.auntminnie.com http://www.impactscan.org http://www.radiologyclub.com

Part 3: Assessment	
Assessment Strategy	A practice based portfolio and a 2500 word written assignment will be used to assess the achievement of the learning outcomes.

	Component A - Practice Based Portfolio This practice based assessment requires the production of a clinical portfolio of evidence This portfolio must contain the following • Record of clinical experience • Clinical assessments of actual patient examinations Further details are available in the module handbook. Rationale: An opportunity for the student to demonstrate clinical competence. The portfolio is assessed in practice and marked as pass / fail as students need to meet a minimum requirement to practice safely at this level. The academic team will oversee and moderate the marking of the portfolio. There is opportunity for students to demonstrate progression of competencies (where appropriate) and receive formative feedback throughout practice. **Component B – Written Assignment** 2500 word case study Rationale: an opportunity for the student to demonstrate an appreciation of the role of a CT practitioner and operator as defined by IR(ME)R regulations 2000.

Identify final assessment component and element	A	
% weighting between components A and B (Standard modules only)	**A:**	**B**:

First Sit	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. Clinical Portfolio of Evidence	Pass/ Fail
2.	
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. 2500 case study evaluation	100%
2.(etc)	

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1.Clinical Portfolio of Evidence	Pass/ Fail
2.	
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. 2500 case study evaluation	100%
2.(etc)	

If a student is permitted a retake of the module under the University Regulations and Procedures, the assessment will be that indicated by the Module Description at the time that retake commences.