

**CDA4 Programme Design Template
Module specification**



University of the
West of England

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data					
Module Title	Fundamental Clinical Skills in Nuclear Medicine Practice				
Module Code	UZYSQ3-30-M	Level	M	Version	1
Owning Faculty	Health and Life Sciences	Field	Allied Health Professions		
Contributes towards	MSc Nuclear Medicine				
UWE Credit Rating	30 credits	ECTS Credit Rating	15	Module Type	Professional Practice
Pre-requisites	None		Co- requisites	None	
Excluded Combinations	None		Module Entry requirements		
Valid From	October 2013		Valid to		

CAP Approval Date	9/7/13
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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"> • Apply relevant theoretical and practical knowledge to the understanding of anatomical structures and physiological systems demonstrated in clinical Nuclear Medicine practice (<i>Component A</i>) • Demonstrate an understanding of routine procedures and imaging protocols utilised in current Nuclear Medicine practice (<i>Component A</i>) • Understand the appearance of a wide range of normal and abnormal clinical conditions with consideration as to the impact of metabolic change and the distribution/clearance of the imaging agent (<i>Component A</i>) • Describe and critically analyse the role of Nuclear Medicine within current diagnostic pathways for a range of clinical conditions (<i>Component B</i>) • Critically evaluate Nuclear Medicine images in relation to data collection, image manipulation and final presentation (<i>Component A</i>)

	<ul style="list-style-type: none"> • <i>and B)</i> • Critically evaluate contemporary research within the field of Nuclear Medicine in order to inform current and future practice (<i>Component A and B)</i> • Undertake a comprehensive range of Nuclear Medicine procedures skilfully, safely, and to a high standard, demonstrating an ability to adapt effectively to new or unusual situations (<i>Component A)</i> • Critically reflect upon the multi-disciplinary nature of Nuclear Medicine practice and how this may influence current and future professional development opportunities (<i>Component A and B)</i> • Justify the contribution of Nuclear Medicine within the modern healthcare environment (<i>Component B)</i> • Make evaluative judgements on the outcomes of Nuclear Medicine procedures and practices and report the findings accordingly. (<i>Component A)</i> • Engage in effective communication with patients', their families, and healthcare professionals and make appropriate decisions as required (<i>Component A)</i> • Prepare written statements and engage in professional debate following research into specified areas of Nuclear Medicine practice (<i>Component A and B)</i> • Demonstrate interprofessional skills and the ability to work in a multidisciplinary environment (<i>Component A)</i> •
Syllabus Outline	<p>General Contents</p> <ul style="list-style-type: none"> • Introduction to anatomy, physiology and pathology processes commonly seen on routine Nuclear Medicine procedures • Evaluation of current imaging and non-imaging protocols utilised within Nuclear Medicine • Linkage to a range of professional guidelines designed to optimise the provision of a Nuclear Medicine service • The Application of Nuclear Medicine (including SPECT/CT and PET/CT) in the investigation and diagnosis of a range of clinical conditions. • Evaluation as to the optimal characteristics of radiopharmaceuticals commonly used within the Nuclear Medicine environment • The effect of pathology and disease processes on normal radiopharmaceutical uptake • Consideration as to the appearance of normal images and how certain pathologies can influence/alter uptake patterns. • The use of supplementary drugs for enhancement of Nuclear Medicine procedures • An introduction to radiation protection and safe working practices including the administration of radiopharmaceuticals • An introduction to the role of Nuclear Medicine in the overall management of the patient <p>The above points will each be considered in relation to the following body systems/areas</p> <ul style="list-style-type: none"> • Skeletal imaging • The respiratory system • The renal tract • The lymphatic system

	<ul style="list-style-type: none"> • The endocrine system • The cardiovascular system • The gastrointestinal tract <p>Legal and Ethical Development</p> <ul style="list-style-type: none"> • Consideration as to the legal and professional responsibilities of the Nuclear Medicine workforce with linkage to appropriate guidance / documentation • Consideration as to the ethical principles of working within the Nuclear Medicine environment with linkage to professional guidance/current political drivers <p>Professional Development</p> <ul style="list-style-type: none"> • Consideration as to the changing nature of Nuclear Medicine practice especially in relation to current professional/technological/financial drivers • Consideration as to the importance of the developing interprofessional dimensions of the modality • Introduction to the future potential of the Nuclear Medicine Practitioner with emphasis on advanced practice opportunities • Introduction to the importance of effective communication skills • Consideration as to the importance of patient centred care in the Nuclear Medicine environment
Contact Hours	<p>Contact hours will be achieved through a blended learning approach that will include distance based education supplemented by knowledge exchange events. This distance based education will embrace the University's current vision associated with Technology Enhanced Learning. Such learning will include but not be limited to, asynchronous delivery of lecture material through narrated presentations, notes and other guided reading, VLE discussion board forums with specific objectives, workplace tasks, and other study tasks deemed appropriate to the development of student knowledge. An approximated breakdown of these contact hours can be seen in the section below.</p> <p>Formative feedback on allocated study tasks will be provided. Contact with the module leader for discussion of module related issues will be facilitated by e-mail, phone conversations and through interaction at the knowledge exchange events</p>
Teaching and Learning Methods	<p>The teaching and learning strategy for this module has been developed to allow the student to demonstrate clinical competency across a range of Nuclear Medicine procedures. Assessment of clinical Nuclear Medicine practice is an integral part of this clinical practice module and students will be expected to be working routinely within the Nuclear Medicine environment in order to demonstrate an integration of 'theory and practice'. Within the workplace this development will be overseen by an appropriately skilled Nuclear Medicine Practitioner who will be responsible for the clinical assessment of the student.</p> <p>A variety of ways will be used to assess the proficiency of the student. A clinical portfolio consisting of a work journal, clinical assessments and appropriate case studies will chronicle the student's development within the clinical environment and will need to be passed in order to successfully complete the module.</p>

	<p>The module will build upon the existing knowledge that the students have developed within the clinical domain by considering a range of routine Nuclear Medicine procedures. Students will be challenged to consider 'best practice' and to evaluate the processes that are currently undertaken within their own departments.</p> <p>Such professional ideas will be introduced by the module team via narrated presentations and further consolidated by on-line discussion forums where set learning tasks/self-directed reading will be outlined. Such learning events will enable the student to consider current practice guidelines and through peer discussion/peer assisted learning outline strategies for optimal practice. Such learning will help develop key concepts such as the value of evidence based practice, critical evaluation and reflective consideration.</p> <p>The module will also introduce the notion of advanced practice and again through the use of narrated presentations will encourage the student to consider possible development opportunities and possible threats that have the potential to impact on future Nuclear Medicine services. Students will again be expected to engage in peer assisted learning and knowledge exchange in order to fully appreciate the changing healthcare environment.</p> <p>A variety of teaching approaches will be utilised within the module.</p> <p>Scheduled learning will include upto 80 hours engaged with lectures, seminars, tutorials, discussion board entries, portfolio supervision, work based learning.</p> <p>Independent learning will include upto 220 hours engaged with essential reading, portfolio construction, assignment development, consideration as to best clinical practice and reflection on learning</p>
Key Information Sets Information	NA Postgraduate module
Reading Strategy	<p>The following reading strategy will be made available to all students via the module handbook displayed on BlackBoard</p> <p>Core Reading</p> <p>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 print study pack or be referred to texts that are available electronically through the Library. Module guides will also reflect the range of reading to be carried out.</p> <p>Further Reading</p> <p>Further reading will be required to supplement the set text and other printed readings. 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 facilities, a variety of bibliographic and full text databases, and Internet resources. Many of these resources can be accessed remotely. The purpose of this further reading is to ensure students are familiar with current research related to the ongoing development of the Nuclear Medicine profession.</p>

	<p>Access and Skills</p> <p>The development of literature searching skills is supported by the Library Services web pages which include interactive tutorials on search skills, the use of specific electronic library resources, evaluating information and various referencing styles. Students will be encouraged to access such resources in order to fully utilise the available range of online help. Further support will be provided by the module team again through the creation of narrated presentations</p>
Indicative Reading List	<p>Indicative Reading List</p> <p>Biersack, H.J. and Freeman, L.M. (2007) <i>Clinical Nuclear Medicine</i>. New York: Springer Publications.</p> <p>Christian, P. (2012) <i>Nuclear Medicine and PET/CT: Technology and techniques</i>. 7th Ed. New York: Mosby Elsevier.</p> <p>Mettler, F.A. and Guiberteau, M.J. (2012) <i>Essentials of Nuclear Medicine Imaging</i>. 6th Ed. Philadelphia: Elsevier Saunders.</p> <p>Morton, K.A. and Clark, P.B. (2007) <i>Diagnostic Imaging. Nuclear Medicine</i>. Salt Lake City: Amirsys.</p> <p>Sharp, P.F. (2005) <i>Practical Nuclear Medicine</i>. 3rd Ed. Oxford: Oxford University Press.</p> <p>Ziessman, H.A., O'Malley, J.P. and Thrall, J.H. (2006) <i>Nuclear Medicine; The Requisites</i>. 3rd Ed. Philadelphia: Mosby Elsevier.</p> <p>Ziessman, H.A. and Rehm, P. (2011) <i>Nuclear Medicine Case Review Series</i>. 2nd Ed. Philadelphia: Elsevier Mosby.</p> <p>Journals Resources</p> <p>Seminars in Nuclear Medicine European Journal of Nuclear Medicine & Molecular Imaging Journal of Nuclear Medicine Clinical Nuclear Medicine Nuclear Medicine Communications Nuclear Medicine and Biology</p> <p>All journals can be found using the library search on the library webpages (http://www1.uwe.ac.uk/library/). Off campus users will be able to access journal articles using their UWE network username and password</p> <p>Alternatively, you can search for articles using a database (see below for a list of suitable databases), which will provide search and display facilities.</p> <p>Databases</p> <p>Anatomy TV Anatomy & Physiology Online Cinahl Cochrane Embase Medline</p>

	<p>Useful Web sites also include:</p> <p>http://www.bnms.org.uk http://www.eanm.org http://www.childrenshospital.org/sites/Site2575/mainpageS2575P37.html http://www.radquiz.com/Nucs-Teaching.htm http://gamma.wustl.edu/allknown.html http://nuclearmedicine.stanford.edu/education/nuclear_teaching.html</p>

Part 3: Assessment	
Assessment Strategy	<p>A practice based portfolio and a 2500 word written assignment will be used to assess the achievement of the learning outcomes.</p> <p>Component A - Practice Based Portfolio</p> <p>This practice based assessment requires the production of a clinical portfolio of evidence</p> <p>This portfolio must contain the following</p> <ul style="list-style-type: none"> • Record of clinical experience (<i>minimum number of 80 cases drawn from 4 different areas of Nuclear Medicine practice i.e. static scans, SPECT scans, paediatric imaging etc.. These cases must also demonstrate a full range of clinical situations in order that the student is able to demonstrate a wide breath of knowledge – further guidance as to the presentation of these cases can be found in the module handbook</i>) • 4 clinical assessments of actual patient examinations • 3 x 1000 word case study's which demonstrate the current applications of Nuclear Medicine within the chosen clinical area <p>This practice based assessment is marked as a PASS/FAIL. All elements are equally weighted. Further details are available in the module handbook.</p> <p>Component B – Written Assignment</p> <p>2500 word assignment linked to the development of Nuclear Medicine Practice within the modern healthcare environment. This will include a 250 word self-reflective account.</p>

Identify final assessment component and element	Component A - Practice Based Portfolio	
% weighting between components A and B (Standard modules only)	A:	B:
First Sit		

Component A (controlled conditions) Description of each element	Element weighting
Practice based portfolio to include clinical assessments	Pass/Fail
Component B Description of each element	Element weighting
2500 word assignment	100%

Resit (further attendance at taught classes is not required)	
Component A Description of each element	Element weighting
Practice based portfolio to include clinical assessments	Pass/Fail
Component B Description of each element	Element weighting
2500 word assignment	100%
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.	