

CORPORATE AND ACADEMIC SERVICES

PROGRAMME SPECIFICATION

Part 1: Basic Data	
Awarding Institution	University of the West of England
Teaching Institution	University of the West of England
Delivery Location	Glenside Campus, UWE / distance learning
Faculty responsible for programme	Health and Life Sciences
Department responsible for programme	Allied Health Professions
Modular Scheme Title	Postgraduate
Professional Statutory or Regulatory Body Links	Society and College of Radiographers (SCoR)
Highest Award Title	MSc Nuclear Medicine
Default Award Title	Not applicable
Fall-back Award Title	MSc Specialist Practice
Interim Award Titles	Postgraduate Diploma Nuclear Medicine Postgraduate Certificate Nuclear Medicine
UWE Progression Route	Not applicable
Mode(s) of Delivery	Part time / distance based
Codes	UCAS: ISIS2: B80A42
	JACS: HESA:
Relevant QAA Subject Benchmark Statements	Master's Degree Characteristics
CAP Approval Date	8 July 2013
Valid from	September 2013
Valid until Date	September 2019
Version	1

Part 2: Educational Aims of the Programme

The educational aims of this programme are to produce a competent and autonomous Nuclear Medicine practitioner who can:

- Develop core and advanced knowledge bases that inform and optimise clinical practice

Part 2: Educational Aims of the Programme

- Develop practical skills to undertake Nuclear Medicine procedures in a safe competent and professional manner
- Appreciate the importance of interprofessional working and develop skills to work effectively within this field
- Develop interpersonal skills that promote effective interaction with service users and professional colleagues
- Understand the importance of practicing within ethical, legal and professional frameworks
- Develop problem-solving skills and utilise these within both the clinical and educational domains
- Consider and critically evaluate the role of Nuclear Medicine in relation to the overall management of the patient
- Develop cognitive abilities commensurate with Masters level education
- Develop a critical understanding of the educational and research foundations that underpin current Nuclear Medicine practice and where appropriate challenge these assumptions
- Develop the requisite skills and understanding to contribute to the existing body of knowledge in Nuclear Medicine through research and publication.
- Consider their future career aspirations in relation to the developing nature of Nuclear Medicine practice
- Utilise the above skills in a reflective and critical manner so as to promote the optimisation of Nuclear Medicine services

Programme requirements for the purposes of the Higher Education Achievement Record (HEAR)

Not applicable

Part 3: Learning Outcomes of the Programme

The award route provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas:

<i>Learning Outcomes:</i>	Module No:UZYSQ9-15-M (cross-sectional anatomy)	Module No:UZYSQ3-30-M (Fundamental clinical skills)	Module No:UZYSQ4-15-M (Science and instrumentation)	Module No:UZYSQ5-30-M (Enhancing Nuclear Medicine)	Module No:UZYSQ6-15-M (Hybrid imaging)	Module No:UZYSQ7-15-M (EWBL)	Module No:UZWSPX-15-M (Research methods)	Module No: UZWSPY-45-M (Dissertation)
A) Knowledge and understanding of:								
A range of anatomical structures and physiological systems commonly seen/imaged within the Nuclear Medicine environment	X	X		X	X	X		
The appearance of normal and abnormal clinical conditions with consideration as to their potential impact on patient management	X	X		X	X	X		

Part 3: Learning Outcomes of the Programme

The clinical and scientific principles of Nuclear Medicine practice with reference to the optimal imaging of patients		X	X	X	X	X	X	X
Current guidance related to the most effective use of imaging protocols, imaging techniques and imaging equipment (both hardware and software)	X	X	X	X	X	X	X	X
Radiation protection methods designed to optimise safe working practice		X	X	X	X	X		
The developing nature of Nuclear Medicine practice and the implication of this in relation to the patient, the workforce and the imaging modality	X	X	X	X	X	X	X	X
The implications of research based evidence used to inform and shape current and future Nuclear Medicine practice	X	X	X	X	X	X	X	X
(B) Intellectual Skills								
An understanding of analytical skills including their importance in relation to a range of clinical situations, clinical competencies and professional practice	X	X	X	X	X	X	X	X
Develop the ability to critically evaluate information from a range of sources in order to inform current and future Nuclear Medicine practice	X	X	X	X	X	X	X	X
Develop a critical awareness of current issues / problems that have the potential to impact on the future development/provision of the modality	X	X	X	X	X	X	X	X
Demonstrate the ability to engage with models of independent learning, peer assisted learning and knowledge exchange	X	X	X	X	X	X	X	X
Demonstrate a creative approach to learning with awareness of possible areas for professional/personal development	X	X	X	X	X	X	X	X
Demonstrate the ability to articulate/disseminate findings with reference to Master's level descriptors	X	X	X	X	X	X	X	X
(C) Subject/Professional/Practical Skills								
Competently undertake a range of Nuclear		X		X	X			

Part 4: Student Learning and Student Support

Teaching and learning strategies to enable learning outcomes to be achieved and demonstrated

On this MSc award the teaching and learning strategies have been devised to incorporate a range of activities including scheduled, independent and work-based learning. Importantly and in line with current University guidance, the delivery style of the programme has been re-designed to incorporate a number of Technology Enhanced Learning tools. These will promote 'student-centered' and 'off-campus' learning. Such developments have been shown to encourage students to take ownership of their learning and through peer-assisted interaction, on-line discussion and knowledge exchange it is envisaged that a full understanding of the current and developing applications of Nuclear Medicine practice will be achieved.

Importantly to complement this delivery re-design some optional 'face-to-face' contact will be offered at key points through the programme i.e. induction, to help in the overall consolidation of knowledge.

In relation to this all students new to the programme will be invited to attend an induction day where key attributes of the programme will be introduced. These sessions will enable the module team to discuss the virtues of Technology Enhanced Learning and through hands-on demonstrations provide the opportunity for students to become familiar with these new learning interfaces.

This induction day will also provide the opportunity for students to consider the level of interaction and standard of academic work that will be expected of them if they are to successfully complete this Masters level programme. Linkage to previous academic work and demonstration of various University-based '*study skills*' tools will be incorporated into the day

Scheduled learning includes lectures, seminars, tutorials, problem based learning, peer group discussion, project supervision, work based learning.

Independent learning includes hours engaged with essential reading, active research, case study preparation, assignment writing and presentation construction.

Workbased / Placement learning: All students are expected to spend at least 40% of their clinical time working within the Nuclear Medicine domain. This provides the student with the opportunity to consolidate/advance their understanding of Nuclear Medicine practice and where appropriate to highlight areas where developments might seem appropriate/beneficial.

The learning strategy for this programme is based on a student-centered approach where students will be encouraged and empowered to take responsibility for their own personal and professional development. Such a strategy will be facilitated by experienced lecturers from within the department of Allied Health Professions as well as external clinical experts from a range of Nuclear Medicine departments. This interaction promotes the importance of a '*lifelong learning*' culture and provides the students with the knowledge and skills needed to undertake future professional development after the completion of the course.

The University's virtual learning environment (BlackBoard) will be used to host this programme and will provide the interface through which students will be encouraged to engage with a range of learning activities. These will include, but not be limited to, discussion forums where the sharing of ideas and experiences will be debated, 'wiki's' and action learning sets where group dynamics, team building and problem solving will be encouraged and 'interactive online' classrooms where students will be able to engage with narrated learning material/podcasts at

Part 4: Student Learning and Student Support

their own pace and at a time convenient to them. Each of these learning styles will encourage active research and critical analysis and through a process of reflection will encourage the students to consider the importance of 'best practice' within the clinical domain.

Support for students in clinical practice is ensured via the nomination of a designated clinical mentor. All clinical mentors are invited to attend an annual '*appraiser's day*' at the University where updates in relation to course developments and assessment criteria are discussed. Such measures help ensure consistency between the clinical departments and provide a forum where scenarios and clinical experiences can be highlighted.

The module leaders also maintain close links with the clinical departments and encourage the clinical mentors to identify student issues as soon as possible. This provides the opportunity for members of the academic team to visit the clinical department in order to provide appropriate support and advice. This close collaboration between the clinical department and the University is seen as being crucial to the successful development of the student and for ensuring the ongoing success of the programme.

Continued development of the programme is facilitated by the maintenance of close links with clinical and industrial stakeholders and with a range of previous students. This is important as such interaction provides a clear overview of the current status of Nuclear Medicine practice and ensures that educational content meets with the current expectations of the Nuclear Medicine workforce. Such interaction has also resulted in the completion of a number of research activities that have been presented at National and International level. This is again seen as being really important to the future development of the programme and further collaborations with professional, clinical and industrial partners are already planned.

Description of any Distinctive Features

The MSc Nuclear Medicine programme has been designed to facilitate the educational needs of the workforce whilst recognising the current challenges associated with clinical release and limited financial resource. The development of '*off campus*' learning environments which utilise models of Technology Enhanced Learning will promote educational flexibility and provide cost effective access to Nuclear Medicine education which will should appeal to both students and employers.

Such a model also has the potential to widen the access to Nuclear Medicine education as the '*distance-based*' nature of the programme negates the traditional model of knowledge delivery within the University setting. This is an important point to consider in relation to the massive technological developments that have impacted on the modality over the last 10 years and in relation to the changing dynamics of the Nuclear Medicine workforce. It is hoped that such a change will not only further encourage '*out of region*' UK based students to access the programme but also provide an opportunity for the programme to appeal to an international market.

The Nuclear Medicine programme also has access to a web-based '*remote processing platform*' that provides the student cohort with a secure and safe environment to develop a number of professional skills. This platform which uses '*real life*' clinical cases provides a realistic simulation of current clinical practice and hence allows the students to experiment with new ideas and new ways of working within a totally safe and patient free environment. Such a framework has also allowed previous student cohorts to consolidate their understanding of introductory concepts and through active participation has encouraged them to consider the values of various processing/reconstruction techniques.

Part 4: Student Learning and Student Support

Part 5: Assessment

Approved to [University Regulations and Procedures](#)

Assessment Strategy

The assessment strategy has been developed to ensure it assesses the learning outcomes of the modules whilst supporting the 'distance-learning' nature of the programme. A 'portfolio' style assessment constructed from evidence provided by the student throughout the module learning events has been developed for several of the new modules. Experience from other programmes using this type of 'patchwork' submission indicates the potential for valuable discussion relating to the module content and helps ensure continued student engagement throughout the duration of the programme. Formative assessment will be achieved by the module team providing regular feedback on set learning activities. This feedback will indicate where good understanding has been achieved or where there is scope for further exploration and development.

Additional assessment modes include 'traditional' written assignments, the production of online presentations and the creation of conference style posters.

Assessment Map

The programme encompasses a range of **assessment methods** including; written assignments, audio narrated presentations, projects, patchwork portfolios, clinical practice evaluation and a dissertation. The arrangement of these methods are detailed in the assessment map below

Assessment Map for MSc Nuclear Medicine

		Practical Skills Assessment / clinical portfolio	On-line Presentation	Written Assignment	Report / Project	Cognitive Map / Poster	Dissertation
Compulsory Modules Year 1	Module No UZYSQ9-15-M (Cross sectional anatomy for the Nuclear Medicine practitioner				100% (A)		
	Module No UZYSQ3-30-M (Fundamental clinical skills in Nuclear Medicine	PASS/FAIL (A)		100% (B)			

Part 5: Assessment

	practice) Module No UZYSQ4-15-M (Science and Instrumentation in current Nuclear Medicine practice)			60% (A element 1)	40% (A element 2)		
Compulsory Modules Year 2	Module No UZYSQ5-30-M (Enhancing Nuclear Medicine practice)				50% (A element 2)	50% (A element 1)	
	Module No UZYSQ6-15-M (Current application of Hybrid Imaging practice)		50% (A element 2)		50% (A element 1)		
	Module No UZYSQ7-15-M (Evidencing work based learning)				100% (A)		
Compulsory Modules Year 3	Module No UZWSPX-15-M (Research Methods)			100% (A)			
	Module No UZWSPY-45-M (Dissertation)						100% (A)

Part 6: Programme Structure

The programme has a student entry point every second year due to the relatively small number of students accessing Nuclear Medicine education.

The first year of the programme contains three compulsory modules that when completed would allow the student to claim a postgraduate certificate in Nuclear Medicine (60 M-level credits). Should the student wish to continue with their education, the second year of the programme also contains three compulsory modules which on completion would enable the student to claim a postgraduate diploma in Nuclear Medicine (120 M-level credits). The third year of study requires the student to undertake 2 compulsory research modules which provide the additional credits needed for the student to achieve the MSc award (180 M-level credits).

Practitioners with a minimum of eighteen months clinical Nuclear Medicine experience may be eligible to enrol onto the second year of the programme initially and subsequently complete the first year of the programme in order to claim a postgraduate diploma award. This option would only be implemented following discussion between the programme manager, the prospective student and the student's employer/clinical supervisor.

Students who enrol on the second year of the programme and do not proceed to complete the first year of study (postgraduate certificate modules) may transfer their credits into the Specialist Practice programme. A postgraduate certificate in Nuclear Medicine cannot be awarded to students who only complete the second year modules.

Modules have been designed to be accessible to a range of healthcare practitioners including Radiographers, Clinical Technologists, Clinical Scientists and Medical Physicists.

Pattern of attendance: Students undertaking this programme should spend at least 40% of their clinical time working within the Nuclear Medicine environment. This is imperative for the professional practice module which requires students to gain extensive clinical experience.

In order to help facilitate this, a learning agreement between the student, the student's employer and the University will be formulated at the start of the first academic year. This will enable the student to monitor their time within the Nuclear Medicine environment and contact the University should they face any prolonged issues regarding the required level of Nuclear Medicine access.

The structure diagram below demonstrates the journey that a typical part-time student might undergo from initial entry through to graduation. This diagram details compulsory modules, module credit weightings and interim awards.

ENTRY		Compulsory Modules	Interim Award
	Year 1	UZYSQ9-15-M Cross-sectional Anatomy for the Nuclear Medicine Practitioner UZYSQ3-30-M Fundamental Clinical Skills in Nuclear Medicine	PG Cert Nuclear Medicine 60 credits must consist of all compulsory Year 1 modules

	UZYSQ4-15-M Science and Instrumentation in Current Nuclear Medicine Practice	
Year 2	Compulsory Modules	Interim Award
	UZYSQ5-30-M Enhancing Nuclear Medicine Practice	PG Diploma Nuclear Medicine 120 credits must consist of all compulsory Year 1 and Year 2 modules
	UZYSQ6-15-M Current Applications of Hybrid Imaging Practice	
	UZYSQ7-15-M Evidencing Work Based Learning	
Year 3	Compulsory Modules	Highest Award
	UZWSRV-15-M Health and Social Care: Research Methods and Methodologies (Distance Learning)	MSc Nuclear Medicine 180 credits must include all compulsory modules
	UZWSRW-45-M Dissertation Module (Distance Learning)	

Part 7: Entry Requirements

The University's Standard Entry Requirements apply with the following additions:

Applicants will normally hold one of the following qualifications:-

- An Honours degree (minimum 2.2) in a relevant subject from a recognised institution of higher education or overseas equivalent
- Alternative health qualifications from a relevant subject which are registerable within the United Kingdom
- Extensive professional experience in the field of Nuclear Medicine – Twelve to eighteen months experience is required if initially enrolling on year two of the programme

In addition to this the following programme requirements also exist

- Access to a clinical Nuclear Medicine department in order to fulfil the practice requirements of the programme
- An appropriately qualified individual who can act as a clinical supervisor (assessor and mentor)

Part 7: Entry Requirements

- Evidence of commitment from the students line manager to support clinical learning is recommended

It is envisaged that applicants to the programme may be from a diverse range of backgrounds both in terms of education and experience. Applicants who do not meet the entry requirements detailed above will be assessed on an individual basis taking into account work experience and academic study/qualifications. Applicants with non-standard entry criteria will be considered on an individual basis. This will take the form of an interview and submission of written evidence.

Experienced practitioners with relevant qualifications such as the Diploma in Radionuclide imaging or IPEM Diploma may apply, using appropriate documentary evidence, for module exemption through the Faculty's approved A/L procedures.

Part 8: Reference Points and Benchmarks

Description of **how** the following reference points and benchmarks have been used in the design of the programme:

[QAA UK Quality Code for HE](#)

National qualification framework

Subject benchmark statements

[University strategies and policies](#)

Staff research projects

Any relevant PSRB requirements

Any occupational standards

QAA subject benchmark statements

The programme has been developed in accordance with QAA statements on postgraduate qualifications, and in relation to QAA Masters level descriptors (2010). The programme team have been made aware of the QAA position statement on postgraduate qualifications and have devised modules accordingly. This applies to both the subject specific development of the student (e.g. an awareness of the role of Nuclear Medicine within modern healthcare environments) and via more general skills development such as critical evaluation, analytical thinking and peer assisted learning.

University strategies and policies

In line with the University teaching and learning policies, this programme takes a student-centred approach to education with students being encouraged to take control of their learning needs. In order to promote this the programme has developed a learning environment that stimulates active engagement and participation. The programme has also attempted to create environments that remove the traditional didactic methods of teaching and instead promote peer assisted learning, enquiry and critical evaluation. Such developments have been constructed in line with the University's current Technology Enhanced Learning strategy. In these environments it is envisaged that the academic staff will simply act as facilitators to help focus the overall student journey.

Professional Body Interaction

Professional validation of the Nuclear Medicine Programme is granted by the 'Approvals and

Part 8: Reference Points and Benchmarks

Accreditation Board' (AAB) which sits within the remit of the Society of Radiographers. The aim of this consortium is to evaluate current educational curriculums in order to ensure that only the most relevant training packages are endorsed for Nuclear Medicine Practice. This course was successfully revalidated in July 2008 and will be reviewed again in 2013

What methods have been used in the development of this programme to evaluate and improve the quality and standards of learning? This could include consideration of stakeholder feedback from, for example current students, graduates and employers.

Employer/clinical stakeholder interaction and feedback

Regular interaction with clinical stakeholders has reinforced the successes of the programme and would appear to indicate that the educational content of the award remains '*fit for purpose*'. Importantly comments related to the diversity of teaching styles and the availability of visiting lecturers have been well received.

Feedback received from clinical staff/clinical mentors has also detailed a range of favourable student developments that have become apparent during the completion of the programme. Such feedback would seem to be especially important given the massive technological changes that are currently influencing Nuclear Medicine practice.

Student feedback is obtained via module evaluation forms that are made available on BlackBoard at the end of each module. Students are encouraged to complete these in a full and honest manner in order to highlight both positive experiences and areas where further development may be possible. These comments are scrutinised by the module team and help shape the future direction of the programme.

A student representative is also elected from each academic cohort to help articulate the feelings of the students at regular student rep/staff forum (SRSF) meetings. Importantly such events provide the opportunity, in a formal environment, to discuss a range of programme topics and to consider how future developments might benefit both the award and the student experience. Importantly these meetings are now held as 'virtual' on-line events in order to maximise student engagement.

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of individual modules can be found in module specifications, available on the [University's website](#).