

<b>Programme Title and Name of Award</b>	MSc Medical Imaging (Magnetic Resonance Imaging)		
<b>Professional Qualifications / Accreditation</b>	Anticipated to be approved by the Society and College of Radiographers (SCoR)		
<b>Academic Level</b>	Level 7	<b>Total Credits</b>	180
<b>UCAS Code</b>	Not Applicable	<b>JACS Code</b>	B821
<b>Criteria for Admission to the Programme</b>	<p>The University's standard criteria for admissions apply. Please refer to the <a href="#">Applicant Information</a> pages of the University website for more information. For <a href="#">APL</a>, please refer to the University website.</p> <p>Detailed criteria for admission to this programme can be found on the programme webpage:</p> <p><a href="http://www.cumbria.ac.uk/study/courses/postgraduate/medical-imaging-magnetic-resonance-imaging-msc/">http://www.cumbria.ac.uk/study/courses/postgraduate/medical-imaging-magnetic-resonance-imaging-msc/</a></p>		
<b>Teaching Institution</b>	University of Cumbria		
<b>Owning Department</b>	Medical and Sport Sciences		
<b>Programme delivered in conjunction with</b>	NHS and private sector placement providers		
<b>Principal Mode of Delivery</b>	Face to face and Blended Learning		
<b>Pattern of Delivery</b>	Part time		
<b>Delivery Site(s)</b>	All University of Cumbria campuses, gateway sites and approved partner locations.		
<b>Programme Length</b>	2 years standard & up to 5 years maximum		
<b>Higher Education Achievement Report (HEAR)</b>	Upon successful completion of this programme, you may receive a Diploma Supplement/Higher Education Achievement Report (HEAR).		
<b>Exit Awards</b>	You may be awarded one of the following Exit Awards if you fail to achieve the requirements of the full programme:		

	<p>PGDip Medical Imaging (Magnetic Resonance imaging)</p> <p>PGCert Medical Imaging (Magnetic Resonance imaging)</p> <p>If the academic credit is achieved but not the clinical element (clinical practice module (HMSR9040)) you may be awarded one of the following exit awards which are not SCoR Accredited:</p> <p>MSc The Theory of Medical Imaging MRI – 180 credits</p> <p>PGDip The Theory of Medical Imaging MRI – 120 credits</p> <p>PGCert The Theory of Medical Imaging MRI – 60 credits</p>
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## Programme Features

The postgraduate programme in magnetic resonance imaging (MRI) aims to develop the abilities of healthcare practitioners in MRI. Learning outcomes for all modules are those that will enable practitioners to develop their skills, both clinically and academically to fulfil their role within the NHS. The programme maintains high academic standing and clinical relevance by involving senior specialist clinical practitioners in curriculum planning and delivery as well as providing mentorship support for students during their specialist clinical placement activities.

The programme allows students to develop the knowledge and skills required to become a competent practitioner in MRI. It is accredited by the College of Radiographers, ensuring it meets standards commensurate with similar/equivalent courses across the United Kingdom (UK).

All the modules on the programme, with the exception of the MSc dissertation and two PGDip modules, are taught as week-long blocks. This has the advantage that students are able to spend a concentrated time of study for each module, rather than having study over a longer timeframe.

Students will be supported in developing their skills to become autonomous practitioners, who are able to undertake advanced practice safely, by ensuring clinical competency. All the academic assignments they undertake have clear focus on the clinical application of MRI, and are therefore useful to students in their practice. Regular updates on students clinical progress are made between the student, their mentor and the programme lead.

Many of the clinical placement sites have been working with the university for many years, supporting students through the part-time route for MRI practitioners, and have friendly, supportive and experienced staff to help them develop their clinical skills whilst maintaining strong links with the university. These mentors are a key factor in the students success, and they all attend a one day course in mentoring at the University, on their appointment into the role.

The principal academic staff members on the programme team are university lecturers, who are, with a few exceptions, HCPC registered diagnostic radiographers. They maintain close links with many MRI units in the North of England and further afield. The programme is also staffed by colleagues from the wider medical science programmes at the University of Cumbria. A key feature of the programme is the support of a wide range of locally and nationally respected MRI radiographers, radiologists and physicists who act as honorary lecturers of the University of Cumbria and provide advice on the programme content and contribute to the programme delivery.

The programme team are respected nationally in their field and are currently research active. The team are actively involved in the development and maintenance of MRI education at a national level.

## Aims of the Programme

The overall aims of the Programme are:

1. To prepare students for the next stage in their careers in MRI by developing their understanding and clinical expertise in the theory and application of MRI.
2. To facilitate and support effective learning and develop students' abilities to reflect on their professional practice so that they will continue as independent practitioners with a commitment to lifelong learning, scholarship and research.
3. To ensure students have a comprehensive understanding of MRI and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their areas of professional practice.
4. To understand and apply the values enshrined within the NHS Constitution in all aspects of their professional practice
5. To develop the students' enthusiasm for, and knowledge and understanding of, the continually expanding field of MRI by developing the transferable skills expected of the postgraduate student in health care who is able to recognise the interface between academic and applied clinical working and is able to manage and adapt to the rapidly changing technological, medico-legal and ethical frameworks of the National Health Service.
6. To ensure the students are both safe and proficient in their application of clinical MRI (both in a subject specific way and having the evidence based techniques in their grasp to practice into the future as lifelong learners).
7. Practice competently according to the HCPC (Health and Care Professions Council) Standards of Practice for Radiographers and the Society and College of Radiographers (SCoR) Code of Conduct and Ethics
8. Critically evaluate the quality of the evidence-base and articulate difficulties related to its implementation in complex clinical situations
9. Demonstrate clear supervision, leadership and management abilities through appropriate decision-making, resource allocation and team working
10. Plan and be prepared to undertake research in practice

## Level Descriptors

Level Descriptors describe in general terms the expected outcomes you will achieve at each level of study as you progress through your programmes. They describe the relative demand, complexity, depth of learning and learner autonomy associated with a particular level of learning and achievement. The University's Level Descriptors are aligned to the national [Framework for Higher Education Qualifications](#) (FHEQ) and are a key mechanism for ensuring the academic standards of the University's provision.

At Level 7 (Usually Master's level), you will be able to demonstrate that you have the ability:

- To display a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of your academic discipline, field of study or area of professional practice.
- Employ advanced subject-specific and cognitive skills to enable decision-making in complex and

unpredictable situations.

- Generate new ideas and support the achievement of desired outcomes
- Accept accountability for decision making including the use of supervision
- Analyse complex concepts and professional situations by means of synthesis of personal and work place reflection and data drawn from scholarship and research in the field.

## **Programme Outcomes – Knowledge and Understanding**

The programme provides opportunities for you to develop and demonstrate the following:

### **After 60 credits of study (PGCert) you will be able to demonstrate:**

**K1.** The physical principles of MR image formation and the relationships between tissue structure and image appearances.

**K2.** Demonstrate skilled, competent, reflective and safe MRI practice within a legal and ethical context in line with current local and national UK guidelines.

**K3.** The requirements of diagnostic test requests and the advice which should be given to other health care professionals on matters of diagnostic imaging.

**K4.** The justification and critical analysis of the use of particular imaging modalities in different clinical situations.

**K5.** The psycho-social effects of medical imaging on the patient and their significant other.

**K6.** Recognise and act accordingly in situations where the limits of skill or knowledge are being approached (cognisance).

### **After 120 credits of study (PGDip) you will be able to demonstrate:**

**K7.** The methods used to locate, interrogate, evaluate and synthesise the evidence in their chosen area of study.

**K8.** The evaluation of the medico-legal implications of using imaging techniques and the subsequent dissemination of the diagnostic information provided. The role of diagnostic imaging specialists in a multi-disciplinary environment.

**K9.** A comprehensive understanding of techniques applicable to their own research or advanced scholarship.

**K10.** A practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in their clinical domain.

**K11.** Understand complex advanced physical concepts in magnetic resonance imaging

**K12.** Develop awareness of the nature of management issues in contemporary MR practice.

### **After 180 credits of study (MSc) you will be able to demonstrate:**

**K13.** Plan and carry out a research study.

**K14.** A creative approach to learning in order to develop as an 'independent learner' in order to evaluate a wide range of research to gain a coherent understanding of theory and practice.

## **Programme Outcomes – Skills and other Attributes (including Employability Skills)**

The programme provides opportunities for you to develop and demonstrate the following:

### **After 60 credits of study (PGCert) you will be able to demonstrate:**

- S1.** The capacity for enquiry, inductive and deductive reasoning and critical thinking and analysis.
- S2.** A creative and independent approach to learning contributing to peer learning and support.
- S3.** Synthesise information from a wide range of sources in order to gain a coherent understanding of the relationship between theory and practice.
- S4.** Use information technology (IT) competently and appropriately to support academic studies and MRI practice.
- S5.** The ability to develop within a network of individuals who are also interested in MRI as an imaging modality.

### **After 120 credits of study (PGDip) you will be able to demonstrate:**

- S6.** Critically evaluate research techniques/methodologies, where appropriate propose new hypotheses.
- S7.** Demonstrate key transferable skills such as; information fluency skills, appropriate communication skills and the ability to manage resources effectively in the planning, commissioning and delivery of imaging services.
- S8.** Manage change effectively in response to changing demands.

### **After 180 credits of study (MSc) you will be able to demonstrate:**

- S9.** Reflect on and evaluate your own academic, professional and clinical performance, exercising autonomy in the management of your learning and recording of continuing professional development.
- S10.** The ability to disseminate and communicate ideas and findings coherently.
- S11.** Develop interpersonal communication skills to develop and plan a project, in consultation with other staff and tutors.

## **External and Internal Reference Points**

The following Subject Benchmark Statements and other external and internal reference points have been used to inform the Programme Outcomes:

Health and Care Professions Council (HCPC) professional standards in Radiography  
Society and College of Radiographers (SCoR) guidelines on professional standards  
Internal drivers having informed the development include: -  
University Academic Strategy 2014-20;  
Departmental Business Plan for Medical and Sport Sciences;  
Departmental response to Learning, Teaching and Assessment Strategy 2014-17

## **Teaching, Learning and Assessment Strategies employed to enable the Programme**

## Outcomes to be Achieved and Demonstrated

The programme and modules are structured to meet the needs of students and employers. Taught components of the academic modules on the programme are delivered in attendance blocks at the university followed by clinical learning blocks in the designated clinical placement. Students are supported on placement by experienced mentors who have been trained by the university. Students are also able to access UoC digital resources, library facilities, [Pebblepad](#) and Blackboard (VLE), whilst on placement. Students will also be supported by their personal tutor, who is a member of the academic team at the university. The clinical aspects of the programme are documented in the students' clinical e-portfolio and it is a requirement of the programme that students take ownership of this portfolio throughout the programme in line with professional requirements to maintain lifelong learning and to monitor and ensure clinical progress and competence.

Learning is based within academic study and professional practice, and the programme team collaborates with experienced clinical ultrasound practitioners. These practitioners perform key roles in helping to maintain the currency and relevance of the programme through their involvement in curriculum planning and delivery as well as providing mentorship support for students during placement blocks.

Learning and assessment are considered as interrelated, as the assessments enable students to demonstrate the extent to which they have achieved the learning outcome of modules and the programme of study overall. Students are supported throughout the assessment process, and formative and summative assessment will be undertaken, and will be an integral part of the academic and Qualificatory Clinical Practice module (HMSR9040) for MRI.

There are extensive opportunities within the clinical sphere, evidenced within the clinical portfolio in the form of reflective practice, for students to engage with inter-professional learning. Examples of how this might be achieved are: through other imaging modalities/radiology reporting sessions within an imaging department or reflective practice based on working with the multi-disciplinary team (MDT) on clinical placement.

A wide range of assessment methods are used which are clinically relevant and aligned to programme and module level learning outcomes.

Intellectual, professional and key transferable skills are central to learning opportunities and assessment. Successfully undertaking modules on this programme will enhance opportunities for students in their professional careers.

## Student Support

You will also be allocated a Personal Tutor. Your Personal Tutor will be proactively involved in the delivery of your programme and will have contact with you throughout your time at the University. They will support your learning and development, including tutorials and other support as outlined in the Personal Tutor Policy.

You will also be given clear sign-posting to additional support services including library services, counselling services and tutor support to ensure that you have all the information and support necessary to help you successfully complete this part time course.

### **Library and Student Services (LiSS)**

Library and Student Services (LiSS) offer a wide range of support, including; access to library learning resources, academic skills, careers and employability, financial help, counselling, health and wellbeing and support for disabled students and those with specific learning requirements. We know that you

want to get the most out of your programme, make the best use of your time and find or continue in the career you always dreamed of. Access university support and facilities easily and quickly via our [help is at hand](#) search.

The Skills@Cumbria service can help support your academic skills and success throughout your programme. The service is delivered by a team of professional Learning Enhancement Advisers within LiSS. It includes a suite of online self-help resources accessible 24/7 via the University's website and Blackboard site. It also provides group and individual advice and guidance accessible through and alongside your course and by different means such as face to face, email or virtual.

Module leaders will collaborate with LiSS advisers to ensure that your reading lists are current and items are available via the library collections. In order to maximise access, availability and usefulness, ebooks and electronic journal titles will, in most cases, be prioritised. You can access a wide range of great electronic and print content using [OneSearch](#) and you can find out more about key texts and journals for your subject by accessing the library's [subject resources webpages](#). Where appropriate, module reading lists will be made available to you electronically using the university's [online reading list system](#).

**In addition to the range of guidance above, you have the opportunity to further develop your personal, academic and professional skills by taking part in a number of initiatives coordinated and delivered by LiSS Advisers:**

#### **Preparing for M Level Study**

This free online pre-entry Master's level course is available free of charge through the Open Education Platform powered by Blackboard as is Head Start Plus. It provides a useful insight into the academic requirements of study at postgraduate level and is recommended to students who are about to start their PG qualification.

To access the course simply follow the link to <https://openeducation.blackboard.com/cumbria> and set-up a free account with Open Education. Once logged on, select the course free of charge and work through it at your own pace.

#### **Career Ahead**

Career Ahead is the University's Employability Award that is accessible to all of our students regardless of level or programme of study. Available free through the Careers Team in LiSS, the award gives students the opportunity to make their graduate CV stand out. Based on what employers look for in an ideal candidate, this award works with students to identify any gaps in their skill set and reflect on their experiences. It also offers the opportunity to participate in exclusive programmes and activities with real life employers. The University of Cumbria's employability award is split into three stages: Bronze, Silver and Gold, with a further Career Ahead + Platinum level. Students' engagement in extra curricula activities such as volunteering, project and charity work and peer mentoring are recognised within Career Ahead. To find out more or to register email [careerahead@cumbria.ac.uk](mailto:careerahead@cumbria.ac.uk).

**Programme Curriculum Map**

<b>Academic Level</b>	<b>Module Code</b>	<b>Module Title</b>	<b>Credits</b>	<b>Module Status*</b>	<b>Programme Outcomes achieved</b>
7	HMSR7070	Magnetic Resonance Practice 1	20	Core	K 1-6; S 1-5
7	HMSR7080	Magnetic Resonance Practice 2	20	Core	K 1-6; S 1-5
7	HMSR7090	Magnetic Resonance Practice 3	20	Core	K 1-6; S 1-5
7	HMSR9040	Magnetic Resonance Clinical Practice	0	Qualificatory	
7	HMSR7110	Negotiated Learning in MRI (Single Weighted Module)	20	Optional	K 7,8,9,10,11,12; S 6-8
7	HMSR7100	Advanced Clinical Applications and Management in MRI	20	Optional	K 7,8,10,11,12; S 6-8
7	HMSU7074	Research Methods	20	Core	K 7,9,10; S 6,7
7	HMSR7130	Negotiated Learning in MRI (Double Weighted Module)	40	Optional	K 7,8,9,10,11,12; S 6-8
7	HMSU7076	Dissertation (60 credits)	60	Core	K 13-14; S 9-11

**Notes**

This programme operates in accordance with the University’s Academic Regulations and Academic Procedures and Processes  
Optional modules may be subject to availability and viability.

**\* Key to Module Statuses**



Core Modules	Must be taken and must be successfully passed
Optional Modules	Are a set of modules from which you will be required to choose a set number to study. Once chosen, unless indicated otherwise in the table above, an optional module carries the same rules as a compulsory module as per the Academic Regulations
Qualificatory Units	These are non- credit-bearing pass/fail components that are used to satisfy relevant professional, statutory or regulatory body professional requirements that are associated with the programme

**Programme Delivery Structure: Part Time**

Module Code	Module Title	Delivery Pattern	Method(s) of Assessment	Approximate Assessment Deadline
		Autumn Semester / Spring Semester / Extended / Year-Long		
HMSR7070	Magnetic Resonance Practice 1	Autumn semester	1 3000 word written assignment; 1 2000 word portfolio	November / December
HMSR7080	Magnetic Resonance Practice 2	Spring semester	1 3000 word project work; 1 2000 word portfolio	April
HMSR7090	Magnetic Resonance Practice 3	Extended	1 2500 word report; 1 2000 word written assignment	July
HMSR9040	Magnetic Resonance Clinical Practice	Year-long	Qualificatory. Formative: Two online tests, clinical portfolio, OSCE	Completed by September

**Students exiting at this point with 60 credits and a pass in the clinical practice module (HMSR9040) could receive a PGCert Medical Imaging (Magnetic Resonance Imaging).**

**In the case of a student successfully passing 60 academic credits but a failure in the clinical practice module (HMSR9040), they may receive a PGCert The Theory of Medical Imaging MRI award.**

HMSR7110	Negotiated Learning in MRI (Single Weighted Module)	Year - long	1 4000 word equivalent project	Negotiated with supervisor
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			work	
HMSR7100	Advanced Clinical Applications and Management in MRI	Autumn Semester	1 2500 word written assignment ; 1 2500 word project work	November
HMSU7074	Research Methods	Spring Semester	1 4000 word written assignment	March
HMSR7130	Negotiated Learning in MRI (Double Weighted Module)	Year - long	1 8000 word project work	Negotiated with supervisor

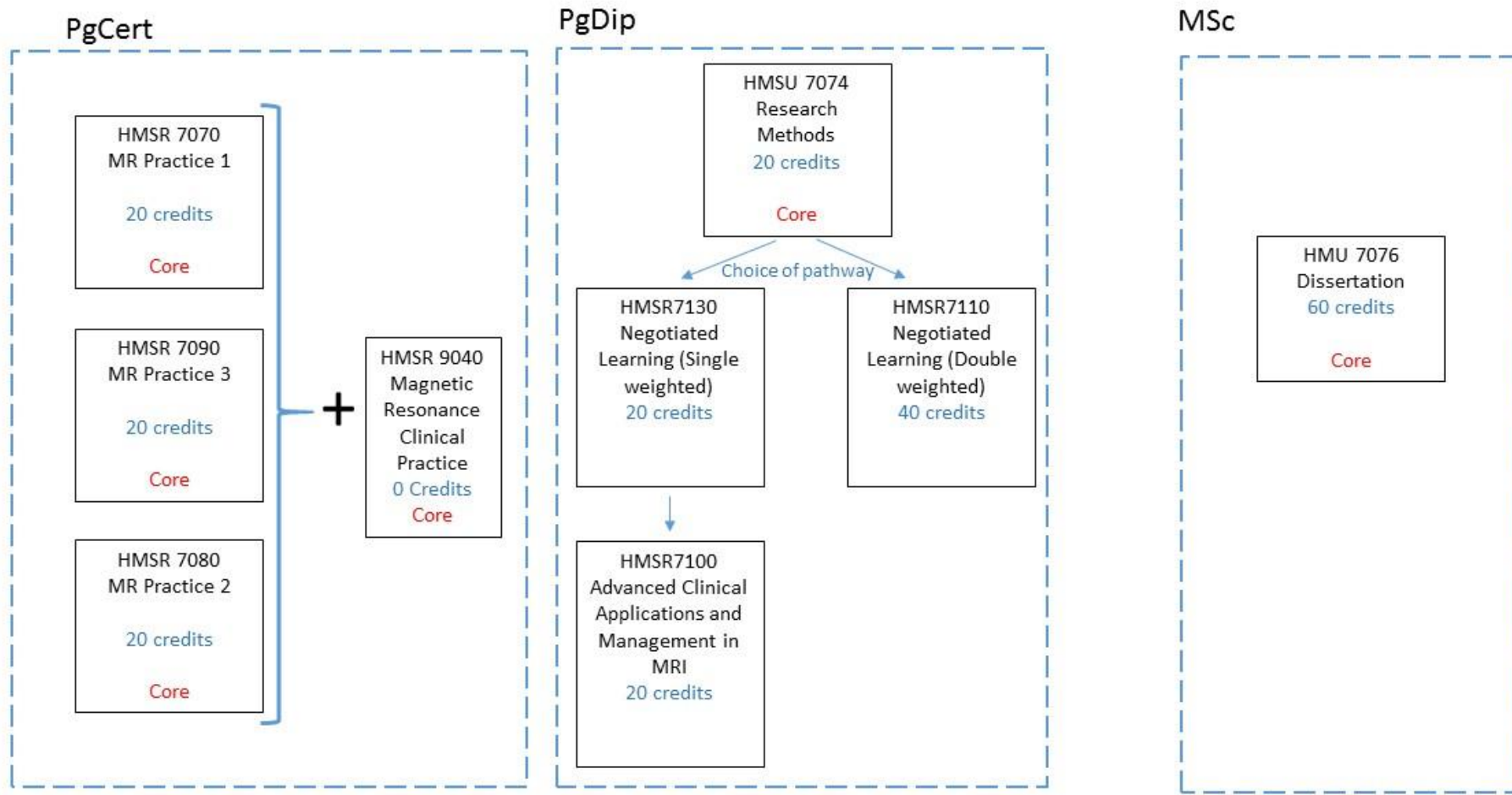
**Students exiting at this point with 120 credits and a pass in the clinical practice module (HMSR9040) could receive a PGDip Medical Imaging (Magnetic Resonance Imaging).**

**In the case of a student successfully passing 120 academic credits but a failure in the clinical practice module (HMSR9040), they may receive a PGDip The Theory of Medical Imaging MRI award.**

HMSU7076	Dissertation (60 credits)	Year-long	1 15,000 word dissertation	Negotiated with supervisor
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**Students exiting at this point with 180 credits and a pass in the clinical practice module (HMSR9040) could receive an MSc Medical Imaging (Magnetic Resonance Imaging).**

**In the case of a student successfully passing 180 academic credits but a failure in the clinical practice module (HMSR9040), they may receive an MSc The Theory of Medical Imaging MRI award.**



If the required academic credit is achieved, but not the clinical element (HMSR 9040 Magnetic Resonance Clinical Practice) you may be awarded one of the exit awards: PgCert, PgDip, MSc 'The Theory of Medical Imaging MRI'

## Methods for Evaluating and Improving the Quality and Standards of Learning

### Mechanisms used for the Review and Evaluation of the Curriculum and Learning, Teaching and Assessment Methods

- Module Evaluation
- Programme validation and revalidation
- Annual Evaluatory Reports (AER)
- Peer Review of Teaching
- Clinical Placement Evaluations
- Online Forums (Blackboard etc)
- Student Module Evaluations (given to students on completion of each academic module)
- Personal Tutor meetings with feedback to Module and Programme Leads
- Informal discussion with students
- Staff-Student Forum Meetings (SSFs)
- Stakeholder and Steering Group meetings
- Module Assessment Boards
- University Assessment Board

### Mechanisms used for gaining and responding to feedback on the quality of teaching and the learning experience – gained from: Students, graduates, employers, WBL venues, other stakeholders, etc.

- Staff Student Forum
- Module Evaluation Forms
- Programme Evaluation
- Module/Programme/Personal tutorials
- Meetings with External Examiners
- Ad hoc clinical visits from link academic tutor to placement sites to ensure programme/student/placement requirements are being met.

### Date of Programme Specification Production:

October 2016

### Date Programme Specification was last updated:

10 April 2017

For further information about this programme, refer to the programme page on the University website:

<http://www.cumbria.ac.uk/study/courses/postgraduate/medical-imaging-magnetic-resonance-imaging-msc/>