

Nottingham Trent University Course Specification

Basic Course Information

1 Awarding Institution:	Nottingham Trent University
2 School/Campus:	Science and Technology/Clifton
3 Final Award, Course Title and Modes of Study:	MRes Medical Imaging (PHYS034), Full time
4 Normal Duration:	FT 1 calendar year
5 UCAS Code:	F300

6. Overview and general educational aims of the course

Do you want to get to grips with cutting-edge techniques and grapple with research problems in Medical Imaging? Do you want access to state-of-the-art equipment, to work in a team of world-class researchers and to collaborate with healthcare professionals? Well, this course is designed to fully prepare you for continued research and development in commercial, healthcare or academic setting. You will develop the knowledge and skills you need to tackle such challenges and then be welcomed into the stimulating research environment of your chosen team. You will be treated like an equal and expected to participate in regular tutorials, discussions and seminar presentations. As well as gaining a deep understanding of your chosen imaging technique, you will acquire skills in independent and group working, critical thinking, project planning and professional communication, making you highly employable across the sector.

This course is ideal if you are:

- A recently qualified graduate with the equivalent of an honours degree (2ii minimum) in Physics or a related discipline and are looking to build on your undergraduate knowledge of the subject; OR;
- Working in an industry related to the physical or medical sciences and are seeking a post-graduate qualification to provide you with a competitive edge.

In summary, the course aims to:

- provide an intellectually challenging and professionally relevant programme led by academic experts in their fields;
- introduce areas at the forefront of Medical Imaging;
- produce postgraduates who are skilled in employing and adapting investigative techniques which are applicable to a range of situations;
- develop the theoretical and practical skills you needed to plan and execute an in-depth research project;
- provide you with the opportunities to deal with complex issues in a systematic and creative way and show originality in solving imaging problems;
- encourage you to develop intellectual and communication skills necessary to present research findings in various formats to all audiences;
- provide you with the techniques and confidence to tackle scientific problems independently.

7. Course outcomes

	Course outcomes describe what you should know and be able to do by the end of your course if you take advantage of the opportunities for learning that we provide.
	Knowledge and understanding By the end of the course you should be able to:
	<p>K1 Display a comprehensive understanding of knowledge, and a critical awareness of current research at the forefront of Medical Imaging;</p> <p>K2 Demonstrate a critical understanding of the research methods required to propose, plan, and perform cutting-edge research which has the potential to contribute to the body of published knowledge in the chosen field.</p> <p>K3 Understand how to efficiently access and critically appraise specialist literature at the forefront of the subject.</p>
	Skills, qualities and attributes By the end of the course you should be able to:
	<p>S1 Select, adapt and apply appropriate imaging techniques to complex problems, including in new or unfamiliar environments, and critically evaluate and interpret the results.</p> <p>S2 Plan, undertake and communicate the findings of a research Project, demonstrating some originality, during an extended investigation.</p> <p>S3 Work constructively and cooperatively as an individual and as a team member, accepting accountability for performance and exercising a range of interpersonal and professional skills.</p>
8	Teaching and Learning Methods
	<p>This taught aspect of the course is delivered by a combination of lectures, seminars, tutorials, practical experiments, supported by the University's virtual learning portal and other electronic facilities. In the module <i>Professional Physicist</i>, you will receive advice and training on literature searching and written and oral presentation skills. You will also have extensive guidance and practice in the design, execution and reporting of research investigations, skills which will be put into practice during the project. The theoretical foundations underpinning a wide range of techniques are presented in the lecture part of <i>Medical Imaging</i> and then applied and reinforced in practical laboratories sessions. The programme emphasises and encourages independent learning and is structured to improve your ability to undertake high quality research and critical analysis.</p> <p>The research project is the main focus of the MRes course. You will be provided with detailed guidance on how to complete the project successfully, and will take ownership of the milestones along the way and planning the timescales involved. You will be fully embedded in a world-leading research group while you carry out your independent project. You will be encouraged to attend regular research seminars both within and outside the School. During the course of your studies, you will assemble a Progress Portfolio, which you can use to reflect on the skills and attributes which you acquire. This Portfolio will provide evidence to help you when completing your CV, and when applying for jobs at the end of the course.</p>

	<p>Health and Safety is an essential consideration when using advanced medical imaging hardware. These ideas are revisited in several modules on the course, initially in <i>Medical Imaging</i> and <i>Professional Physicist</i> and then put into practice in the <i>Research Project</i>. You will become proficient in assessing safe practice, creating appropriate procedures and following established protocols.</p> <p>The optional module will provide an element of personalisation and flexibility, with the choice of investigating more theoretical, practical topics in physics, additional communication skills, or to learn about business skills applied to biotechnology.</p>
9	<p>Assessment Methods</p> <p>The course uses a variety of assessment techniques, providing you ample opportunity to demonstrate that you have achieved the course learning outcomes.</p> <p>Formative feedback and assessment of your knowledge, understanding and presentation skills will be given during allocated teaching slots (e.g. seminars) and informally throughout the course.</p> <p>Summative assessment of your knowledge and understanding of advanced physics concepts and experimental techniques takes place by examination, coursework, oral presentations and written essays.</p> <p>The <i>Research Project</i> module will involve the design, implementation and reporting of a major research task. You will communicate your findings at an interim stage of the project in peer-reviewed journal format and you will present your findings orally to your peers and to members of the Course Team.</p> <p>Experimental skills are typically assessed through lab books, and other reports based upon your findings.</p> <p>Communication skills are assessed through a range of individual and group activities, across all modules.</p>
10	<p>Course structure and curriculum</p> <p>This MRes course is a one-year full-time course, comprising three 20cp taught modules plus a 120cp project (running all year). The course has two start dates, either in September or February. Early in the course you will attend the taught sessions of <i>The Professional Physicist</i> module to prepare you for the research project that follows. Simultaneously, you will study <i>Medical Imaging</i>. The timing of the optional modules are different, and the time spent on your project will be flexible to accommodate these demands.</p> <p>Alongside these taught modules, you will be working on your chosen research project from the middle of the first semester, embedded in one of our many active research groups, with links to local hospitals and medical companies.</p> <p>Contact hours for a 20cp modules are typically around 50 hours, with a further 150 hours expected from you for directed and independent study.</p>
11	<p>Admission to the course</p> <p>Entry requirements.</p> <p>For current information regarding all entry requirements for this course, please see the 'Applying' tab on the NTU course information web page.</p>
12	<p>Support for Learning</p>

We will work with you to ensure that you settle into your new academic environment and that your studies go well, and you will find that there are lots of people to support you at Nottingham Trent University.

All students at Nottingham Trent University have full access to Student Support Services. In addition, School-based support networks are in place to offer you support, guidance and advice on academic and personal issues. Within the course, students experience the full support of the Physics Academic Team. The Academic Team Leader, with support from the Courses Manager, Course Leader, Module Leaders, and Course Tutors, takes responsibility for student support and guidance. The Module Leader will offer guidance and support to students taking each specific module.

Academic staff can be contacted by e-mail, telephone, letter, or in person.

As a new student you will experience a week-long induction period at the commencement of the academic year. Induction will inform you about:

- Student Support Services at University, School and Course level;
- International Student Support
- University policies and procedures on academic systems;
- Personal development planning;
- Timetable issues, room allocations and location;
- University, School and Course Handbooks;
- Enrolment procedures;
- Computing, IT and Library services;
- Health and Safety procedures.

For accommodation matters, University Accommodation Officers will provide you with information, guidance and continuing support, for example hall of residence, private rented accommodation, and the Landlord Approval Scheme. The Accommodation Services can be accessed through www.ntu.ac.uk.

13 Graduate destinations / employability

There are a wide range of career opportunities available to MRes Physics graduates. You will work with leading academics and most likely also with medical professionals on your course, so you will have gained important academic and professional skills necessary to help you obtain employment in your chosen field. At the end of the course, you will also have developed many professional and communication skills that will make you more attractive to potential employers. Your *Research Project* will give you the skills you need to follow a career in research or development.

The University's Careers Service has an enviable reputation for helping our graduates find employment and offers individual consultations. Sessions are available to all students at NTU on CV writing and interview technique, which will build directly on the material you have collated and prepared for the *Professional Physicist* module.

14 Course standards and quality

The Course Committee, with staff and student representatives, operates to discuss matters arising on the course, review module feedback and consider the course report and External Examiners' comments. Overarching responsibility for quality control lies with

	the School Academic Standards and Quality Committee whose remit is to provide guidance and support to academic courses. External Examiners offer further quality control through monitoring academic standards, moderation of assessment tasks and processes.										
15	<p>Assessment regulations</p> <p>This course is subject to the University's Common Assessment Regulations (located in its Academic Standards and Quality Handbook). Any course specific assessment features are described below:</p> <p>The Master's degree is classified Distinction, Commendation or Pass. The specific criteria for each classification will be set out in the course documentation and follow the grade based assessment scheme.</p>										
16	<p>Additional Information</p> <table> <tr> <td>Collaborative partner(s):</td> <td>None</td> </tr> <tr> <td>Course referenced to national QAA Benchmark Statements:</td> <td>Yes, Institute of Physics Integrated Masters, Institute of Physics and Engineering in Medicine (Masters Level Accreditation Framework), QAA MRes.</td> </tr> <tr> <td>Course recognised by:</td> <td>N/A</td> </tr> <tr> <td>Date implemented:</td> <td></td> </tr> <tr> <td>Any additional information:</td> <td>None</td> </tr> </table>	Collaborative partner(s):	None	Course referenced to national QAA Benchmark Statements:	Yes, Institute of Physics Integrated Masters, Institute of Physics and Engineering in Medicine (Masters Level Accreditation Framework), QAA MRes.	Course recognised by:	N/A	Date implemented:		Any additional information:	None
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