I had always wanted to pursue a career in a medical-related field, and when I started researching where and what I might be able to study I was really excited to find that Exeter, my local university, was running a really highly regarded Medical Imaging programme. Since starting the course I have truly appreciated the friendly and professional atmosphere, up-to-date, modern facilities and the chance to go on placement in varied locations around the South West.

Alun, studying Medical Imaging (Diagnostic Radiography)
We aim to create doctors, healthcare professionals and medical scientists who are able to address the health and social care challenges of the 21st century, who are socially accountable and committed to the service of patients and the public. Our students can take advantage of numerous opportunities to gain real world experience to give them unparalleled preparation for their chosen careers, and which complements our research-led teaching. Where appropriate, we offer small group learning so that you can explore topics in depth with peers under the guidance of an expert in that field. Our unique education model is designed to foster an enquiring mind, dedicated to a lifetime of self-directed learning and evidence-informed patient care.

The BSc Medical Imaging programme at the University of Exeter is consistently rated in the top two in the UK, and we are dedicated to further improving the student experience with significant investment in new facilities for the programme. As part of the University of Exeter Medical School, students on the Medical Imaging programme are taught on a campus with those studying Medicine and Medical Sciences; this closer link is part of our effort to prepare all our students to be able to work with other professionals in the delivery of patient care and scientific advancement.

Medical Imaging is based in South Cloisters, the £10.5 million Medical School centre – a creative refurbishment housing state-of-the-art facilities including a laboratory, demonstration room and purpose-built X-ray equipment including digital radiography, ultrasound scanner, MRI scanner and phantoms.

The Athena SWAN Charter recognises and celebrates good employment practice for women working in STEMM in higher education and research. The University of Exeter Medical School has been awarded an Athena SWAN Silver department award. Find out more about Athena SWAN in the University of Exeter Medical School at www.exeter.ac.uk/medicine/about/equalitydiversity/athenaswan

I chose to study Medical Imaging at the University of Exeter because it allows students to pursue an interest in medical science, biology and physics, with the fundamental goal of helping others, in particular our patients. The extensive placement modules allow us as students to really integrate into the radiography team at each site, and adjust to working in hospitals within the first year of studying. As well as this, the variety of sites available allow us to gain experience in different radiology departments which could be future employment prospects. The University itself has a collection of fantastic lecturers (each with a variety of experience and expertise), a fully equipped X-ray training room and an excellent support network for students.

Natalie, studying Medical Imaging (Diagnostic Radiography)
Diagnostic radiographers fulfil an essential role in the modern healthcare setting, using their skills and knowledge to produce detailed, high-quality anatomical and physiological images of what is happening within the human body. These images are used to assist in the diagnosis of injury and disease thereby ensuring that prompt, effective treatment is given.

The world of radiography, and the role of the radiographer, is constantly changing and developing. The equipment used undergoes continual development and so radiographers need to be able to keep up-to-date with the latest technological advances. The role of the radiographer has expanded to include reporting on the images produced, providing a written interpretation of any abnormalities seen, and administering contrast agents by means of an intravenous injection. A new career pathway for radiographers was introduced following a government-led initiative, Agenda for Change. This new pathway introduced Advanced Practitioner and Consultant radiographer roles to reward clinical and research expertise.

Diagnostic radiographers work in many different branches of medical imaging including:

**Projection radiography**

Radiography is the production of a ‘radiograph’ using X-rays. It encompasses an array of techniques used throughout the hospital. Radiographers use their skills and knowledge to modify standard techniques to accommodate the variety of patients encountered, for example, in the Emergency Department, in theatre and on the wards, as well as the Radiology department. We have a state of the art digital imaging system on site providing students with hands-on experience.

**Fluoroscopy**

Fluoroscopy is an X-ray technique used to produce a combination of dynamic and static images. It is usually used in combination with a contrast agent that has been introduced into the body in order to clearly delineate certain structures such as the gastrointestinal tract or blood vessels.

**Computed tomography (CT)**

This technique uses X-rays in conjunction with a specialised computer to produce cross-sectional images of the body. Modern computers enable the manipulation of the data recorded by the scanner to allow the images to be reformatted in other planes or viewed as a 3D image.

**Ultrasound**

Ultrasound uses high frequency sound to look at certain structures within the body. It is most commonly associated with monitoring the development of the embryo throughout pregnancy but it is also used to look at other structures such as the heart, organs within the abdomen and pelvis, and to evaluate blood flow in vessels.

We have an on-site ultrasound suite providing students with hands-on experience.

**Nuclear medicine (radioisotope imaging)**

This technique uses gamma-rays rather than X-rays. Nuclear medicine uses ‘radiopharmaceuticals’: a radioactive isotope which is usually bound to another pharmaceutical agent and then introduced into the body. The type of pharmaceutical agent used determines which organs in the body will take up the radiopharmaceutical. Taking images that demonstrate how the radiopharmaceutical has been taken up means that the function of the organ can be assessed. This technique can be used on many different body systems including the renal system, bone and the heart and can also be used for targeting therapy in oncology.

**Magnetic resonance imaging (MRI)**

This method requires the patient to lie inside a large tube containing magnets and utilises the magnetic properties of the individual hydrogen atoms within the body. MRI is used to produce detailed images of soft tissue structures within the body including the brain, spine, joints and the abdominal pelvic organs. We have a 1.5T MRI system on the St Luke’s Campus, providing students with hands-on experience; additionally there is a 3.0T MRI system at the Royal Devon & Exeter Hospital, shared with the Medical School.
Medical Imaging (Diagnostic Radiography) ensures that you have the skills required to successfully embark on a career as a Diagnostic Radiographer; an essential role in the modern healthcare setting.

As a diagnostic radiographer you’ll work in a range of hospital departments and use various forms of imaging technology to look inside a patient’s body and help diagnose injuries and illnesses. With experience, you may also contribute towards interpreting images, establishing treatment plans and helping with intervention procedures.

You’ll have clinical placements in each year of study within Radiology departments in one of our 10 placement hospitals: you will spend time at a different placement site each year in order for you to gain a wide range of clinical experience while exploring all that the South West has to offer.

**SINGLE HONOURS**

**BSc Medical Imaging (Diagnostic Radiography)**

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<thead>
<tr>
<th>B821 3 yrs</th>
<th>AAB-BBB</th>
<th>IB: 34-30</th>
<th>BTEC: DDD-DDM</th>
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<td>Required subjects: GCE AL science* grade B; IB science HL5; GCSE Maths grade C or 4.</td>
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**YEAR 1**

Your first year provides you with a foundation for professional practice to include an understanding of the role of evidence in informing clinical knowledge. Fundamental concepts in radiation physics are developed and significant time spent in our fully functioning clinical X-ray room. You will begin to understand important anatomical and physiological concepts and apply these to basic radiographic imaging. You will study the fundamentals of patient care and the role of the radiographer in the patient experience. You will spend approximately four months on clinical placement at one of our 10 supporting hospitals.

**YEAR 2**

Our development of a spiral curriculum ensures that the second year builds on the knowledge obtained in the first year. Science concepts are extended beyond radiation physics to include the scientific concepts behind magnetic resonance and ultrasound. These scientific concepts are contextualised in their clinical application and significant time is spent within modalities on clinical placement. This ensures your education follows a holistic approach from fundamental theory, clinical application and practical experience. Students further develop their understanding of research and through support from academic staff to design a research study they will undertake in their third year. Your knowledge of anatomy is extended to include pathology.

**YEAR 3**

Year 3 consolidates your knowledge and prepares you for clinical practice. Structures within the NHS and the role of the health care professional is studied. You will learn to write accurate image reports and the fundamentals of digital imaging. You will undertake an independent piece of research as part of a small group which provides the topic for your end of year dissertation. Your elective placement can be within the UK or abroad.

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*See Entry Requirements box on page 10.*
LEARNING AND TEACHING

Our teaching encompasses a range of methods, combining traditional lectures and practical work with tutorials both at the University and on placement. The academic blocks provide you with the underpinning theory, linked to practice. We aim to develop you as an independent learner, equipping you with the skills to support yourself in lifelong learning.

Inter-professional learning is delivered as part of the core syllabus and in practice, where you’ll be encouraged to develop the insight and skills needed to work effectively in the multidisciplinary hospital setting upon graduation. Our aim is to provide you with experiences and insights that will promote an ethos of multi-professional team working within the clinical setting.

We’re actively engaged in introducing new methods of learning and teaching, including increasing use of interactive computer-based approaches to learning through our virtual learning environment, where the details of all modules are stored on an easily navigable website. Students can access detailed information about modules and learning outcomes and interact through activities such as the discussion forums.

Research-inspired teaching
We believe that every student benefits from being part of a culture that is inspired by research and being taught by experts. You will discuss the very latest ideas in seminars and tutorials and become actively involved in research yourself. Research plays an important part in developing patient care and radiography as a whole for the future. You will be taught by staff who are at the cutting edge of their research areas, which ensures you receive the most up-to-date knowledge. During your third year, you will undertake a research project in which you will investigate a particular aspect of radiography in detail and may have the opportunity to work alongside research staff on current clinical projects.

Clinical placements
The clinical placements are within Radiology departments in one of our 10 placement hospitals: Barnstaple, Bournemouth, Plymouth, Dorchester, Poole, Exeter, Taunton, Torbay, Truro and Yeovil. You will spend time at a different placement site each year in order for you to gain a wide range of clinical experience while exploring all that the South West has to offer.

During your first placement, you will be working for four-and-a-half days a week, between the hours of 9am and 5pm. In the second and third years you will undertake some weekend and out-of-hours duties. You will always be supervised by a qualified member of staff.

Facilities
In September 2015 the Medical Imaging programme moved into a brand new, purpose-built facility at the St Luke’s Campus which has undergone a £10.5 million redevelopment to create new state-of-the-art teaching and research space.

This space has new X-ray equipment with digital radiography (DR), new ultrasound scanner, thermal imaging camera, interactive whiteboards for demonstrating anatomy and projecting images, shaderware computer programme for students to practice positioning and outcomes of adjusting positions, table top X-ray experiments demonstrating Computed Tomography, access to the MRI scanner, phantoms such as an anthropomorphic whole body X-ray phantom and Doppler ultrasound string phantom, quality assurance tests, barracuda dosimeter, bones and anatomical models. You will have access to a purpose-built X-ray room, laboratory space and demonstration room which will enable practical activities to take place to support the theoretical course content.

Assessment
Assessment is carried out via a combination of continuous assessment (both academic and clinical) and exams. The programme is studied over three years. Your first year does not count towards your final degree classification, but you do have to pass it in order to progress. Assessments in the final two years both count towards your classification. In your final year, you will undertake a research project which will count for 25 per cent of the year’s marks. Projects provide an opportunity for you to link your clinical experience with the world of research and enable you to demonstrate to employers your depth of knowledge underpinning your practical skills.

Academic support
We are strongly committed to offering high levels of personal and academic student support. You will have a personal tutor at the University and, during your clinical placements; an on-site clinical tutor.
A medical imaging degree is a passport to an interesting job and a fulfilling career. Graduate starting salaries begin from NHS pay band 5 and there is a grading structure that sees an individual's salary increase as they move up the profession. There are also opportunities to develop into management, advanced practice, consultant, research and academic posts.

Radiographers trained in the UK are recognised as being among the best in the world and the health providers of many foreign countries recruit in the UK. On graduation you will be eligible to apply for registration as a diagnostic radiographer with the Health and Care Professions Council (HCPC) and for membership of the Society and College of Radiographers. Preparing students for employment is an essential part of the programme. In addition to the assessed academic and personal skills integrated within the programme, there is a schedule of additional activities designed to enhance the employability of our graduates.

Employability Labs, run with support from Radiography Department Heads in local NHS hospitals are specifically tailored to the needs of students applying for careers in medical imaging. These include sessions on writing personal statements, completing online application forms, and mock interviews.

Further information on Diagnostic Radiography can be found at:
www.radiographycareers.co.uk
www.sor.org
www.nhscareers.nhs.uk

We have a dedicated, award-winning Careers Service, with offices at our Exeter and Penryn campuses, ensuring you have access to careers advisors, mentors and the tools you need to succeed in finding employment in your chosen field on graduation. We offer the Exeter Award and the Exeter Leaders Award which include employability-related workshops, skills events, volunteering and employment which will contribute to your career decision-making skills and success in the employment market. Our graduates compete very successfully in the employment market, with many employers targeting the University when recruiting new graduates. For further information about our Careers Service please visit: www.exeter.ac.uk/careers
# MODULES

For up-to-date details of the programme and all the modules, please check [www.exeter.ac.uk/ug/medical-imaging](http://www.exeter.ac.uk/ug/medical-imaging)

## YEAR 1

### Foundations of Patient Care

The role of a professional radiographer is high quality patient care. Radiographers must not just know what professional conduct is, they must behave in this way both instinctively and at all times. This requires appropriately developed interpersonal skills, and an understanding of aspects of sociology and psychology as they apply to the inter-professional clinical context.

### Anatomy and Physiology

This module develops knowledge, understanding and application of human anatomy and physiology. It draws on established knowledge from the scientific disciplines of anatomy and physiology that underpin sound practice in healthcare.

### Research and Evidence-Based Professional Practice

This module introduces the principles of evidence-based practice and research methodologies that underpin patient/client care. You will be introduced to the principles of professional practice within health and social care. In the context of evidence-based professional practice, you will develop basic problem-solving and reasoning skills. Alongside this you will develop an understanding of professional practice.

### Clinical Imaging 1

This module aims to develop knowledge of the technology which supports general and fluoroscopic radiography and its conduct. It also provides knowledge of patient positioning for various parts of the anatomy.

### Introduction to Radiation Physics

Through this module you will develop essential mathematical skills and gain knowledge of the essential science underpinning the various radiation imaging modalities. The module also provides introductory knowledge of radiation biology and physics, sufficient to appreciate the legislative framework of justification, optimisation and limitation in control of ionising radiations.

### Radiographic Anatomy

This module develops knowledge, understanding and application of biological concepts in the context of contemporary healthcare practice. It draws on established knowledge from the scientific discipline of anatomy that underpins sound practice in healthcare. The discussion of anatomy emphasises how it is demonstrated in diagnostic images.

### Practice Placement 1

Professional radiographers must be able to apply their theoretical knowledge and practical skills within an inter-professional clinical context. This placement provides practical experience of the safe and effective practice of general and fluoroscopic radiography. You will develop your patient care skills, and learn to identify professional and management issues and understand how these are interrelated.

## YEAR 2

### Clinical Imaging 2

This module develops knowledge of the science and technology underpinning the X-ray sources, image receptors and supporting facilities used in clinical radiology. The module also provides understanding of the details of a number of advanced 2D X-ray imaging applications now becoming widely available in imaging departments. Encompassed within this module are the example situations of angiography and neurology, utilisation of X-ray interventional procedures and use of X-ray facilities in wards and A&E departments.

### Clinical Imaging 3

This module develops knowledge of the science and technology underpinning 2D and 3D radionuclide imaging, ultrasound and MRI, and of the principles of safe practice in using these various modalities. The module also provides practical training in interpretation of the images that arise from these modalities.

### Project Studies 1

This module develops a sound understanding of research terminology, methods and principles. It is designed to enable you to understand different research designs, to evaluate the research literature and to prepare you to undertake research at undergraduate level.

### Science for Medical Imaging

This module develops a range of basic mathematical skills and knowledge of the essential science which underpins the various imaging modalities. The module also aims to provide sufficient knowledge of introductory radiation biology and physics to allow an appreciation of safe and optimal use of radiation imaging techniques.

### Pathology for Radiographers

This module develops knowledge, understanding and application of anatomical and physiological concepts in the context of contemporary clinical imaging practice. It introduces biological and sociological themes related to health, including their relationship to healthcare practice.

### Practice Placement 2

This placement provides further practical experience of the safe and effective practice of general and fluoroscopic imaging. It introduces interventional radiography and other imaging modalities. You will develop your patient care skills and learn to handle more complex situations.
During this third (and final) placement you will become an integral member of the multi-professional healthcare team; competent to deal with a full range of patients using a wide range of modalities. You will have responsibility for organising your working day and liaising with staff in other departments, and will gain experience of managing an inter-professional team.

**Project Studies 2**

This module will develop your skills in self-directed and group study. You will plan, undertake and evaluate a research project and write it up in a format suitable for publication.

**Skeletal Image Interpretation**

Advanced radiography requires an understanding of image interpretation and its applications. This module draws on established knowledge from the scientific disciplines of anatomy, radiographic anatomy and pathophysiology that underpin image interpretation. You will develop the fundamental skills that underpin the writing of image comments.

**Digital Image Processing for Radiographers**

In this module, you will develop a level of mathematical skill sufficient to analyse complex waveforms and appreciate the statistical consequences of the information stored in an image. You will develop knowledge of the underlying algorithms used by image manipulation tools and the extent to which the use of these affect the qualities of the image. Finally, you will learn how each and every component of the imaging chain, from presentation of patient through to the interpretive skills of the radiographer/radiologist can affect the predictive diagnostic capabilities of a method.

**Professional Skills for Radiographers**

You will develop your knowledge of the legislative and professional framework that governs radiographers together with associated managerial, professional and inter-professional issues encountered in clinical practice. The resulting framework of knowledge and skills supports safe and equitable practice. You will learn about the skills needed to use contrast-enhancing agents safely, about the complications associated with contrast media, the mitigating measures available against anaphylaxis and the various means that are available for dealing with adverse reactions.

As soon as I arrived at the St Luke’s Campus in Exeter I knew I wanted to study Medical Imaging here. The lecturers are experts in their fields and the University constantly invests in new equipment and resources for us to prepare ourselves for being fully qualified radiographers. I love that our placements are formed of one large block per year as it really gives you the chance to settle into your placement hospital, allowing you to gain confidence in your own abilities and to push yourself out of your comfort zone with people you have built trust with during the four month period.

Katie, studying Medical Imaging (Diagnostic Radiography)
We make every effort to ensure that entry requirements are up-to-date in our printed literature. However, because brochures are produced well in advance, our entry requirements and offers may be subject to change. For further details regarding entry requirements and programme specifics, please see our Medical Imaging pages at www.exeter.ac.uk/ug/medical-imaging

We strongly advise that you check current requirements before attending an Open Day or making your application. Some programmes require prior study of specific subjects and may also have minimum grade requirements at GCSE or equivalent, particularly in English Language and/or Mathematics.

**ENTRY REQUIREMENTS: MORE INFO**

*GCE AL science grade B; IB science HL5; GCSE Maths grade C or 4. GCE AL/science includes: Biology/Human Biology; Chemistry; Computing; Design and Technology; Electronics; Environmental Studies; Geography; Geology; Maths/Pure Maths/Further Maths; Physical Education; Physics; Psychology; Science (applied); Statistics.

If more than one of these is taken they would only count as one ‘science’ but could count as two A levels towards our general requirements.

Applicants studying a BTEC Extended Diploma in a science subject will be considered without GCE AL requirement. Applicants offering a BTEC Extended Diplomas in lieu of the GCE A level Science will also be required to have a grade C or 4 in GCSE English Language and Mathematics.

**Interviews**

Successful candidates at the initial application stage will be invited to an interview. Interviews will take the form of an individual meeting for you with one of our academics and a healthcare professional. During this meeting we will consider your application and you will have an opportunity to discuss your personal statement. There will also be the opportunity for you to ask any questions you may have.

**Health assessments**

Candidates will be required to provide satisfactory health clearance. You will be provided with an Occupational Health questionnaire to complete which will be screened should you receive an offer of a place on the programme.

**Programme requirement**

Work experience is no longer a mandatory entry requirement for our programme. You are encouraged to undertake work experience in a Radiography department to gain an insight into your desired profession.

The role of the radiographer will be discussed during the interview, however, you will not be penalised if you are unable to obtain work experience.

Offers for this degree will be conditional upon students completing an Enhanced Disclosure and Barring Service (DBS) check disclosure, which is deemed satisfactory, and satisfying full health assessments.

**Values-based recruitment**

We look for students who are both academically capable and who demonstrate the personal skills and qualities that are required to make a successful radiographer. It is this combination that helps to create successful multidisciplinary healthcare teams who deliver excellent patient care. The qualities and values we look for in students align with those within the NHS Constitution.

Through the recruitment process and our degree programme we aim to produce diagnostic radiographers that demonstrate the following values:

- Working together for patients
- Respect and dignity
- Commitment to quality of care
- Compassion
- Improving lives
- Everyone counts

**International students**

If you are an international student you should consult our general and subject-specific entry requirements information for A levels and the International Baccalaureate, but the University also recognises a wide range of international qualifications. You can find further information about academic and English language entry requirements at www.exeter.ac.uk/ug/international

For information on the application, decision, offer and confirmation process, please visit www.exeter.ac.uk/ug/applications
The information in this subject brochure forms part of the undergraduate prospectus 2019 and is aimed at prospective undergraduate students wishing to apply for a place at the University of Exeter (the University) and start a course with us in autumn 2019. The prospectus and subject brochures describe in outline the courses and services offered by the University and we make every effort to ensure that the information provided is accurate and up-to-date at the time of going to print (undergraduate prospectus is printed January 2018 and subject brochures are printed in May 2018). However, it may be necessary for the University to make some changes to the information presented in the prospectus following publication – for example, where it is necessary to reflect changes in practice or theory in an academic subject as a result of emerging research; or if an accrediting body requires certain course content to be added or removed. More information about our terms and conditions can be found at: www.exeter.ac.uk/undergraduate/applications/terms.