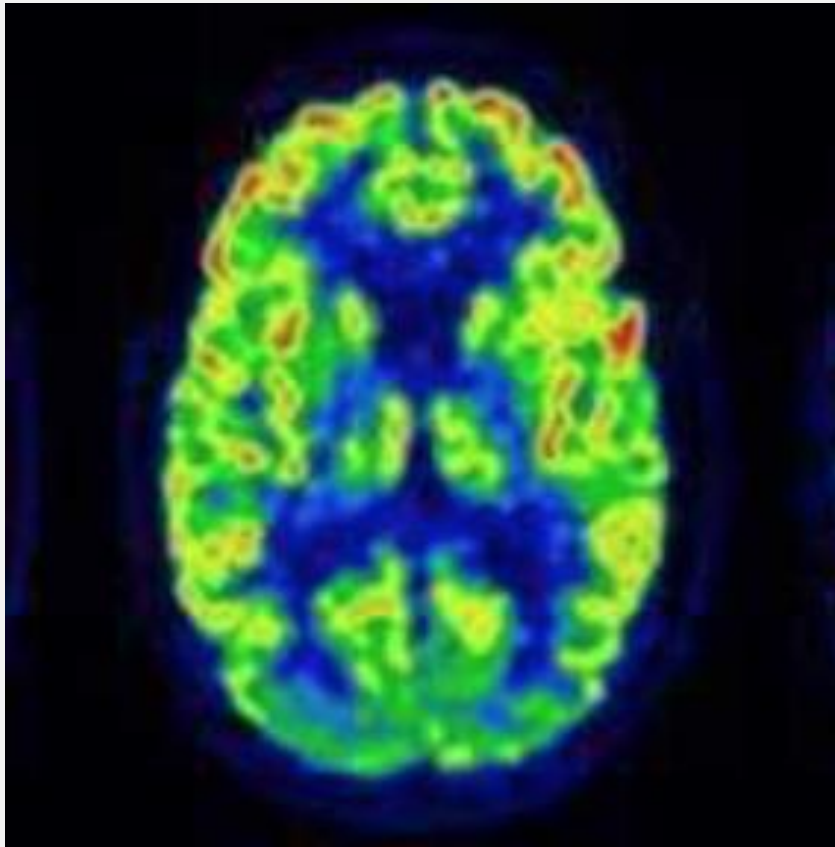


APPLICATION HANDBOOK

NUCLEAR MEDICINE



PG Cert Nuclear Medicine
PG Dip Nuclear Medicine
MSc Nuclear Medicine

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Introduction

The Postgraduate Certificate (PGCert), Postgraduate Diploma (PGDip) and Masters (MSc) in Nuclear Medicine are part of the Clinical Specialties Programme within Brighton and Sussex Medical School. This course has been designed to provide Nuclear Medicine (NM) education for all health allied professionals and doctors, most commonly NM Physicians, Radionuclide Radiologists, NM technologists, NM radiographers, NM nurses as well as providing opportunities for those wanting to extend their understanding of the field, eg oncologists, cardiologists and endocrinologists, as there are many common themes.

The course is designed to be delivered as a multidisciplinary module framework and it is intended that students will share their occupational experiences, thereby enhancing multidisciplinary working and in doing so promote successful inter-professional practice.

Aims of the Course

The course aims to:

1. Provide advanced professional education and training in nuclear medicine for doctors and other professionals working in Clinical Nuclear Medicine, adhering to stringent administration of radiotracers and radiation protection UK regulatory requirements.
2. Provide students with a blend of nuclear medicine basic science, including physics, radiopharmacy and diagnostic and therapeutic clinical nuclear medicine procedures and techniques with opportunities for learning in professional domains of Leadership, Communication and Learning and Research and publishing skills.
3. Provide students with the learning content which is a mandatory training requirement for speciality trainees in Nuclear Medicine. The course has been specifically designed in collaboration with the Joint Royal College of Physicians Training Board, with the curriculum being approved by GMC.
4. To provide other professionals who are involved in delivery of nuclear medicine clinical services (e.g. NM radiologists, NM technologists, NM radiographers, clinical oncologists, clinical scientists, NM nurses) with learning and insights into advanced professional practice in Nuclear Medicine
5. For those undertaking the MSc: To undertake a supervised, high-quality research in Nuclear Medicine and prepare students to be research aware and research active.

It should be noted that given the broad range of professionals, the course does not aim to provide teaching or assessment in practical skills or professional capabilities/competencies; it aims to provide the academic scaffolding to support the development of professional competencies which can then be taught, developed and assessed by the training schemes of the different professional groups.

Learning Outcomes

By the end of the course a successful student will:

- demonstrate a systematic and critical knowledge of the physics which underpin nuclear medicine;
- critically understand the principles underlying the development, production and safe use of radiopharmaceuticals;
- demonstrate a systematic and advanced knowledge the UK Nuclear Medicine regulatory framework;

- exhibit a systematic understanding of the techniques, indications, interpretation, advantages and risks of Nuclear Medicine diagnostic procedures;
- demonstrate a critical awareness of the benefits versus the risks of advanced nuclear medicine procedures and techniques to optimise both patient care and staff and public safety
- exhibit a critical understanding of research methodologies and statistical methods and the ability to apply these to develop high quality research proposals;
- design a robust research project, whilst assuring compliance with current guidelines for ethical conduct and good practice in research
- demonstrate self-direction and originality through the successful initiation, execution, completion and writing up of a robust research thesis pertaining to nuclear medicine
- demonstrate the capacity to give a clear, current and accurate account of Nuclear Medicine using appropriate scientific language and professional writing skills
- demonstrate the expertise and communication skills necessary for leadership in the field of Nuclear Medicine

Entry Requirements

The programme is open to post-registration doctors and graduate professionals allied to nuclear medicine, with minimum of 2 years clinical practice. With exception of post registration doctors, for those without 2.1 or first class first degrees, initial registration should be for the postgraduate certificate award.

Depending on the strength of their application, applicants may be interviewed. They will be expected to be aware of the latest trends and developments in Nuclear Medicine

Claims for the Recognition of Prior Learning (RPL) will be considered with a maximum of 50% of the total credits permitted.

All applications will be subject to the University Equal Opportunities Policy.

Applications are welcomed from International Students with appropriate qualifications and experience, although the online provision of teaching means that international students will not qualify for UK student VISAs. Students for whom English is not a first language must demonstrate an acceptable standard of comprehension and communication in the English Language. Our minimum IELTS score is 7.0, with no less than 6.5 in each section.

There will be an online Induction Day on 19th September 2023 for all successful applicants and you are strongly recommended to attend. This event will run online via MS Teams.

Structure of Course

The academic standard is the same for each of the three awards (PGCert, PGDip and MSc) as they are all taught at Postgraduate (M) level. The difference lies in the number of modules taken and, for the MSc, the completion of a dissertation. Successful completion of the PGCert, PGDip, and MSc requires 60, 120 and 180 credits respectively.

One standard module is worth 20 credits which equates to 200 hours of study. The PG Cert, PG Dip and MSc courses can be studied on a full time or part time basis. They are made up of the following modules:

MDM132 Nuclear Medicine Physics, Radio-pharmacy & Regulations	<p>Students will gain a critical understanding of the science (physics and radio-pharmacy) and regulations which underpins clinical nuclear medicine.</p> <p>Notes: The knowledge and understanding from this module is considered essential for all students, so this module is required for all students, at all levels of NM qualifications</p>
MDM133 Essential Single Photon Diagnostic Nuclear Medicine	<p>Students will gain a critical understanding of the essentials of diagnostic single photon nuclear medicine.</p> <p>Notes: This module is required for NMPT.</p>
MDM134 F18 FDG PET Diagnostic Nuclear Medicine	<p>Students will gain a critical understanding of 18F FDG PET-CT diagnostic nuclear medicine.</p> <p>Notes: This module is required for NMPT.</p>
MDM129 Advanced Diagnostic & Multimodality NM	<p>Students will gain a critical understanding of advanced diagnostic SPECT-CT and PET-CT and multimodality nuclear medicine, involving the use of non 18F FDG PET-CT tracers. Notes: This module is required for NMPT.</p>

MDM130 Molecular Radiotherapy and Theragnostics	<p>Students will gain a critical understanding of the clinical practice of theragnostics and tailored molecular radiotherapy.</p> <p>Notes: This module is required for NMPT.</p>
MDM10 Research Methods and Critical Appraisal	<p>Students will gain a critical understanding of research methods and critical appraisal along with the ability to critically appraise research approaches and apply appropriate methods in the development of an original research proposal.</p> <p>Notes: This module is required for those wishing to undertake the dissertation module for the MSc.</p>
MDM131 Anatomy and pathology for non-radiologists	<p>Students will gain a critical understanding anatomy and pathology pertaining to Nuclear Medicine.</p> <p>Notes: This module is only open to non-radiologists.</p>
MDM122 Communication, Learning and Teaching in Health and Social Care	<p>Students will gain an advanced level of understanding of communication and teaching in relation to patients and colleagues of all levels, including the ability to communicate conclusions clearly to specialist and non-specialist audiences.</p> <p>Notes: Students can take one of either MDM122 or MDM110.</p>
MDM110 Leadership and Change Management in Clinical Services	<p>Students will gain an advanced level of understanding of the organisational context for change in health & care service settings to enable managers, practitioners and professionals to contribute more effectively to leading and improving the design of service models and new</p>

	<p>organisational bodies, and to the delivery, cost effectiveness and outcomes of services.</p> <p>Notes: Students can take one of either MDM122 or MDM110.</p>
MDM164	<p>Students will plan and execute a research project, written up formally as a dissertation.</p> <p>Notes: Students are required to have undertaken MDM10 prior to undertaking this module.</p>

There are three levels of award:

1. **PG Certificate in Nuclear Medicine** (PG Cert NM) will include the mandatory MDM132 and 2 other Nuclear Medicine modules chosen from MDM129, MDM 130, MDM 131, MDM133 and MDM134.
2. **PG Diploma in Nuclear Medicine** (PG Dip NM) will consist of the MDM 132 and a further 5 modules from MDM129, MDM 130, MDM 131, MDM133, MDM10 & one of either MDM110 or MDM122. Students undertaking MDM129 (Advanced diagnostic Multimodality NM) will be recommended to have previously studied MDM133 and MDM134. Those wishing to proceed to the MSc will need to undertake MDM10. Nuclear Medicine Physician trainees will be mandated to take MDM132, MDM133, MDM134, MDM129, MDM130.
3. **MSc in Nuclear Medicine** (MSc NM) will consist of a PGDip NM (including the MDM10 module) and the MDM164 module consisting of research and submission of a 12,000-word dissertation.

PG Cert NM and PG Dip NM options:

The level of qualification and choice of modules will depend on the academic ambition and professional background of the student, according to their clinical practice and interests. For example:

1. NM physician trainees will be required, in line with the GMC approved JRCPTB curriculum, to undertake a PG Dip NM including MDM132, MDM133, MDM134, MDM129, MDM130. They may also wish to undertake MDM10 if they plan to subsequently progress to MSc. They cannot take MDM131 as they will previously have undergone radiology training.

2. Radionuclide Radiologists who work in a teaching hospital setting are likely to wish to undertake the same modules as NM physicians apart from the therapy module MDM130 to achieve PG Dip NM. They are also likely to wish to undertake MDM10 as they may subsequently wish to progress to MSc. They cannot take MDM131 given previous radiology training.
3. Radionuclide Radiologists who work in the DGH setting are likely to find a PGCert NM consisting of MDM132, MDM133 and MDM134 will fulfil their professional needs but can take other modules to broaden their scope of practice. They cannot take MDM131 given previous radiology training.
4. Radiographers and Nuclear Medicine technologists may undertake the same modules as their medically qualified colleagues but may opt to substitute with MDM131 Anatomy/Pathology for non-radiologists and/or MDM122 or MDM110.
5. Oncologists wishing to undertake molecular radiotherapy are likely to wish to undertake MDM132 and MDM130.

Postgraduate Certificate in Nuclear Medicine

Module	Status
MDM132 Nuclear Medicine Physics, Radiopharmacy and Regulations	Mandatory (20 credits)
Plus 2 other modules from MDM129, MDM 130, MDM 131, MDM133, MDM134	
Option 1	(20 credits)
Option 2	(20 credits)

Postgraduate Diploma in Nuclear Medicine

Module	Status
MDM132 Nuclear Medicine Physics, Radiopharmacy and Regulations	(20 Credits)
and 5 other modules chosen from MDM129, MDM 130, MDM 131, MDM133, MDM134, MDM10 & one of either MDM110 or MDM122.	
Option 1	(20 credits)
Option 2	(20 credits)
Option 3	(20 credits)
Module 4	(20 credits)
Module 5	(20 credits)

MSc Nuclear Medicine

Module	Status
Postgraduate Diploma in Nuclear Medicine including MDM10	Mandatory (120 credits)
MDM164 Dissertation (12,000 words plus research poster)	Mandatory (60 credits)

In some circumstances, PG Dip NM and MSc NM students may apply for a Variation of Study. In agreement with the Course Leader, other modules from the Postgraduate Medicine Portfolio may be taken to replace MDM110 or MDM122.

The study schedule

Each module equates to 200 hours of lectures, seminars, preparation of assessment submissions, revision and personal study. Each of the NM modules consists of a series of

pre-recorded online lectures which can be watched at a time to suit the student (ie asynchronously). These are supplemented by 3 online seminars, at the beginning, middle and end of the lecture series which students need to attend at the time (ie synchronously).

Although the NM lectures have been designed to be reviewed asynchronously, adequate time needs to be dedicated to the course during the module run of lecture releases as students are obliged to actively engage by watching lectures, attending seminars and communicating with teaching faculty and with other students, achieving at least 65% virtual attendance over a two week period. Engagement at the time of the module run is not optional and will be monitored. If students persistently fail to engage according to BSMS guidelines of 65%, the Brighton University Attendance and Engagement intervention will be triggered which if ongoing will ultimately result in the student leaving the course. This is to ensure all students are engaged with teaching and contributing to the course. There is a lot to learn and leaving everything until the last minute is not an option.

For students studying part time alongside full-time clinical jobs, all three modules of the PG Certificate may be achieved in the initial year of study, with the three additional PG Diploma modules to be achieved in the second year, and the research thesis of the MSc to be achieved in a third year. For those doing the course full time, all could be achievable in a single year. Depending on which modules are undertaken, between 15-20 hours of teaching should be expected each week and additional time needs to be dedicated to formative and summative assessments.

Modules MDM10, MDM110 and MDM122 require online attendance on prescribed days and study leave should be booked in good time to ensure full time attendance. Alternative dates may be possible for face-to-face courses as demonstrated in this indicative timetable summary:

Modules	Indicative Dates
MDM132 Nuclear Medicine Physics, Radiopharmacy and Regulations	60 hours of online lectures released from week 1 to week 5 of semester 1, supported by 3 online synchronous seminars. Formative assessment and summative assessment essay submissions on 9.11.23 and 30.11.23 respectively. Exam in May
MDM131 Anatomy and pathology for nuclear medicine image interpretation	40 hours of online lectures released from week 1 to 5 of semester 1 and to week 8 of semester 2, supported by 3 online synchronous seminars. Formative and summative assessment portfolio submissions on 18.1.24 and 18.4.24.
MDM133 Essential single photon Diagnostic Nuclear Medicine	50 hours of online lectures released from week 6 to week 11 of semester 1, supported by 3 online synchronous seminars. Formative and summative

	assessment essay submissions on 23.11.23 and 14.12.23 respectively. Exam in May.
MDM134 F18 FDG PET Diagnostic Nuclear Medicine	50 hours of online lectures released from week 6 to week 11 of semester 1, supported by 3 online synchronous seminars. Formative and summative assessment essay submissions on 7.12.23 and 18.1.24 respectively. Exam in May.
MDM129 Advanced Diagnostic and Multimodality NM	50 hours of online lectures released from w/c 15.1.24 until week 8 of semester 2, supported by 3 online synchronous seminars. Formative and summative assessment essay submissions on 8.2.23 and 28.3.24 respectively. Exam in May.
MDM130 Molecular Radiotherapy and Theragnostics	50 hours of online lectures released from w/c 22.1.24 to week 7 of semester 2, supported by 3 online synchronous seminars. Formative and summative assessment submissions in on 14.3.24 and respectively. Exam in May.
MDM10 Research Methods and Critical Appraisal	5 full day online course w/c 8.4.24, assessment submission w/c 27.5.24; please ensure study leave is booked in good time to attend this online course
MDM110 Leadership and Change Management in Clinical Services	2-day course 7-8.3.24 and 2 day course 4-5.4.24. Assessment submission 27.5.24; please ensure study leave is booked in good time to attend this online course.
MDM122 Communication, Learning and Teaching in Health and Social Care	3-day course 8-10.1.24 and 2-day course 29-30.1.24. Assessment submission 2.4.24; please ensure study leave is booked in good time to attend this online course
MDM164 Dissertation	2 hour seminar week 1 of semester 2, 4 tutorials every fortnight. Thesis submission date w/c 2.9.24

An overall course timetable grid for 2023/24 with colour coding for the different teaching and assessments can be viewed in Appendix 1 to allow students to plan their study leave and time allocation well in advance.

Module Descriptions

MDM132 Nuclear Medicine Physics, Radiopharmacy and Regulations

Aims

This module aims to enable students:

- To develop a critical understanding of the scientific basis of Nuclear Medicine
- To develop critical awareness of radiopharmacy and its application to Nuclear Medicine in the UK.
- To develop a critical understanding and ability to apply the knowledge necessary to deliver Nuclear Medicine within the UK regulatory framework.

Learning outcomes:

On successful completion of the module, you will be able to:

- Systematically understand the structure and decay of radioactive atoms and interactions of radiation with matter relevant to clinical nuclear medicine
- Critically understand the systems used to detect and create images from emissions from radioactive atoms relevant to nuclear medicine, how they are calibrated and tested to ensure optimal image quality is maintained
- Demonstrate critical awareness of the biological risks from the use of ionising radiation in clinical nuclear medicine and the methodology used to calculate radiation dose from administered radiopharmaceuticals
- Critically understand the principles of radiopharmaceutical manufacture including radionuclide production, chemistry, room design and requirements and quality control of products relevant to clinical nuclear medicine
- Critically understand the clinical use, problems and risks with radiopharmaceuticals including drug interactions, extravasation, radiopharmaceutical artefacts and unexpected biodistribution
- Demonstrate a critical understanding of the international framework for radiation safety and the specific regulatory requirements that underpin all aspects of the safe practice of Nuclear Medicine in the UK
- Clearly communicate matters pertaining to physics, radiopharmacy and regulatory matters, using appropriate scientific and professional writing skills necessary to develop and lead Nuclear Medicine clinical services

MDM133 Essential Single Photon Diagnostic Nuclear Medicine

Aims

This module aims to enable students to develop a critical understanding of essential single photon emission diagnostic studies.

Learning Outcomes

On successful completion of the module, you will be able to:

- Demonstrate critical understanding of diagnostic single photon nuclear medicine imaging techniques including planar (static and dynamic), whole body, SPECT, with and without hybrid imaging, with image and dose optimisation.
- Demonstrate critical awareness of the diagnostic use of single photon imaging for each organ, tissue or system, including the recognition of pitfalls.
- Systematically appreciate how patient history, clinical evaluation and alternative imaging modalities can be used in the work up of patients
- Demonstrate a critical understanding of risk assessment process and the justification and authorisation of nuclear medicine studies following appropriate patient preparation including pregnancy and breastfeeding checks
- Demonstrate critical awareness of national and international guidelines.
- Clearly communicate matters pertaining to single photon diagnostic matters, using appropriate scientific and professional writing skills necessary to develop and lead Nuclear Medicine clinical services

MDM134 [F18] FDG PET Diagnostic Nuclear Medicine

Aims

This module is designed to provide a critical understanding of the clinical applications of [F18] FDG positron emission diagnostic studies for oncology, evaluation of inflammation, infection and brain metabolism.

Learning outcomes

On successful completion of the module, you will be able to:

- Demonstrate critical understanding of F18 FDG PET-CT image acquisition technique including image and dose optimisation
- Demonstrate critical awareness of typical patterns of tracer distribution for different pathologies, including the recognition of pitfalls.
- Systematically appreciate the role of the MDT and how patient history, clinical evaluation and alternative imaging modalities can be used in the work up of patients
- Demonstrate a critical understanding of risk assessment process and the justification and authorisation of FDG PET-CT nuclear medicine studies following appropriate patient preparation including pregnancy and breastfeeding checks
- Demonstrate critical awareness of national and international guidelines

- Clearly communicate matters pertaining to physics, radiopharmacy and regulatory matters, using appropriate scientific and professional writing skills necessary to develop and lead Nuclear Medicine clinical services

MDM129 Advanced diagnostic & multimodality Nuclear Medicine

Aims

This module aims to enable students to develop a critical understanding of advanced Nuclear Medicine techniques including non FDG PET tracers and multimodality hybrid imaging.

Learning outcomes

On successful completion of the module, you will be able to:

- Demonstrate critical understanding of advanced diagnostic and multimodality nuclear medicine imaging techniques with image and dose optimisation, including paediatric imaging
- Demonstrate critical understanding of the potential of advanced diagnostic and multimodality nuclear medicine hybrid techniques involving non FDG PET tracers pertaining to oncology, cardiology, neurology and infection/inflammation, including the recognition of pitfalls
- Systematically appreciate how patient history, clinical evaluation and alternative imaging modalities can be used in the work up of patients undergoing advanced multimodality nuclear medicine hybrid techniques
- Demonstrate critically understanding of clinical application of advanced SPECT-CT and PET-CT nuclear medicine quantification
- Demonstrate critical understanding of the development of tracers, past present and future, including tracers in common clinical use and those in the research setting.
- Clearly communicate matters pertaining to advanced multimodality diagnostic matters, using appropriate scientific and professional writing skills necessary to develop and lead Nuclear Medicine clinical services

MDM130 Molecular Radiotherapy & Theragnostics

Aims

The aim of this module is for students to develop a critical understanding of the therapeutic application of nuclear medicine (molecular radiotherapy and theragnostics) and the use of specific labelled tracers to locate and stage tracer avid or positive disease which can then be targeted for molecular therapy and to monitor treatment response.

Learning outcomes

On successful completion of the module, you will be able to:

- Demonstrate critical understanding of the science behind the biological effect of Molecular Radiotherapy (MRT) products on tumours and normal tissues, and how this impacts on patient care, including the differences in radiobiology and alpha and beta emitters and the complex decay chains of alpha emitters.
- Demonstrate critical understanding of the relationship between the coupled molecular imaging methods used to stage and characterise diseases treated with MRT and the provision of tailored targeted MRT (theragnostics).
- Systematically understand dosimetry of MRT products and how these impact on the clinical aspects of MRT administration including patient consent and safety, the safety of patient supporters, staff and the public within the context of regulations
- Critically evaluate published clinical trials in MRT and how these impact on drug registration and approval for reimbursement for example by NICE.
- Critically understand the central role of the Multidisciplinary Team and the clinical governance surrounding the administration of MRT
- Clearly communicate matters pertaining to molecular radiotherapy and theragnostics matters, using appropriate scientific and professional writing skills necessary to develop and lead Nuclear Medicine clinical services

MDM131 Anatomy & Pathology for image interpretation (only open to non-radiologists)

Aims

This module aims to provide an advanced understanding of anatomy and pathology for non-radiologist students who wish to be able to increase anatomical understanding and image interpretation skills using computed tomography and nuclear medicine images.

Learning outcomes

On successful completion of the module, you will be able to:

- Demonstrate a critical understanding of anatomy, including normal variants as demonstrated by cross-sectional anatomy
- Demonstrate a critical understanding of common typical pathologies demonstrated on cross sectional hybrid imaging
- Present and communicate anatomy and pathological findings from cross sectional imaging

MDM10 Research Methods and Critical Appraisal

Aims

The module aims to provide you with an understanding of how to use evidence in their specialist area. It aims to provide you with an understanding of research methods in health and social care and the ability to relate appropriate methods to research questions. You will

be equipped to search and critically review the literature, to develop and justify a research proposal, and to anticipate potential ethical issues in research proposals.

Learning Outcomes

On successful completion of this module, you will be able to:

- demonstrate a critical understanding and evaluation of major research designs and their relative strengths and limitations
- systematically develop and justify a chosen research approach and methodology to investigate a specific topic within their subject
- produce a research proposal which demonstrates appreciation of scientific methods appropriate to their specialist area
- critically appraise a variety of research papers across a range of study designs
- carry out an appropriate, rigorous review of the literature
- be aware of ethical and governance issues in research

MDM122 Communication, Learning and Teaching in Health and Social Care

Aims

This module aims to facilitate your development as communicators and educators, promoting the development of knowledge, skills, attitudes, and practices of a competent clinical practitioner.

Learning Outcomes

On successful completion of this module, you will be able to:

- Identify and comprehend the similarities and differences between patient- and learner- centred values in practice
- Understand the factors which may enhance or impede effective communication between professionals and patients/clients
- Critically reflect on different communication and learning styles and skills
- Critically evaluate different theories of learning and relate these to their own philosophy of learning
- Critically appraise a range of teaching interventions
- Plan and design appropriate communication and learning interventions for patients/clients or learners under their supervision
- Critically analyse the nature of multi-professional and inter-professional communication and learning
- Critically evaluate their own performance as communicators and supporters of learners
- Identify their personal teaching and learning styles and developmental needs as a teacher and communicator

MDM110 Leadership and Change Management in Clinical Services

Aims

This module aims to provide an overarching understanding of the organisational context for change in health & care service settings to enable managers, practitioners and professionals to contribute more effectively to leading and improving the design of service models and new organisational bodies, and to the delivery, cost effectiveness and outcomes of services.

On successful completion of this module, you will be able to demonstrate:

- A systematic and critical understanding of public service reform theory, policy and current context
- A critical awareness of, and ability to think reflectively about, how to initiate, lead and manage changing and improving services, with an emphasis on using research to inform change goals and drive up outcomes
- The ability to critically appraise different service delivery and management models from independent and public sector settings, understanding complexity theory, whole system leadership, and evaluation and selection of different approaches to the change process in health & care settings
- A critical awareness of strategic planning, market development and financial management, in order to communicate vision and define key priorities
- A deep critical understanding of the theory and practice of leadership
- A critical awareness of and ability to think reflectively on the principles, objectives and effectiveness of governance, and how accountability supports the delivery of quality services
- An ability to assimilate, synthesise and critically appraise relevant aspects of leadership for service transformation, and present these both orally and in written form to different audiences

Module MDM164 Dissertation

Aims

The module is designed to allow students the opportunity to engage in a rigorous piece of personal and independent research arising out of their programme of study and allied to their professional field, and to present their findings through a dissertation (12,000-words) and poster. Students are expected to present and publish the results of their Dissertation projects where possible.

Learning outcomes

On successful completion of this module, you will be able to demonstrate:

- clear aims appropriate to a master's level dissertation and to their professional situation
- high levels of autonomy and responsibility in planning and executing research

- the ability to present and justify a well structured research question, at the forefront of their specialty
- extensive knowledge of and justification for the appropriate choice of methodology
- comprehensive understanding of, justification for, and application of the methods relevant to the chosen methodology
- evaluation and management of confounding, bias, chance and measures of association (quantitative study)
- issues of truthfulness and verifiability (qualitative study)
- the ability to analyse critically and interpret the results and findings of their study in the context of existing literature
- critical awareness of the limitations of the study and the impact of these on the results
- appropriate knowledge of, and conformity with ethical and governance requirements both in planning and execution of the study
- a depth of knowledge in the field of study appropriate for Master level
- critical evaluation of the implications of their research for future practice and research
- awareness of current problems and/or new insights at the forefront of their academic discipline, field of study, or area of professional practice

The Dissertation

The Dissertation is for students studying for the MSc award. In order to be able to progress to Dissertation level you must first have a proposal agreed.

It is important to start thinking about your dissertation as early as possible. You are advised to attend a Dissertation Day prior to submitting your Dissertation proposal - these are scheduled a few times each year and dates can be found on the main timetable.

You will be able to choose a Dissertation that is relevant to your professional interests and practice but will need to focus on issues relating to Nuclear Medicine. Your choice of topic must be discussed with the Course Leader and then approved by the DME Dissertation Panel after a formal submission of your proposal to the Panel. Once your Dissertation has been approved, you will be assigned a Dissertation Supervisor. Other regulatory requirements can be found in the dissertation handbook.

Timetable

Appendix 1 (pages 25 & 26) shows timetable dates. Module dates for the next academic year are also available online from the summer at: [Module dates - BSMS](#)

Fees

For fee information, please see the website: [Nuclear Medicine - BSMS](#)

In case of queries, please contact: fees@brighton.ac.uk It has been agreed that trainees may use study leave funding to cover the full cost of the clinical modules in the 2023-24 academic year.

Teaching Staff

Academic staff from the Brighton and Sussex Medical School and Brighton and Sussex University Hospitals are involved in the provision of teaching in a modular format at Masters (M) level. Specialist teaching is provided by consultants, specialists and other clinical staff from Trusts and organisations across the UK. The extensive contribution of expert practitioners to the teaching of the modules is a distinctive feature of courses at BSMS.

Teaching and Learning Strategy

This course adopts a model of online learning. This model of teaching and learning is different from more traditional distance learning courses due to the level of online interaction that is involved, the level of communication we expect from you and the online, asynchronous, discussions that enable you to pace your work evenly throughout the module period to ensure that you cover the study materials in the same way you might if you were to attend a series of face to face sessions. It also allows you to interact with fellow students and your course tutor more regularly to discuss your ideas and to troubleshoot if any problems arise.

Communications

You are expected to communicate with your course tutor and fellow students on a regular basis, both by email and via the Virtual Learning Environment (VLE). If the module tutor does not hear from you, or you are not participating in the required course activities, you will be contacted to make sure you are keeping up and to ascertain if there are any difficulties you are encountering with your studies. The participation level of this course is what creates the synergy of an online 'learning community' and is dependent on all students being involved and actively sharing. You will also have synchronous seminars with the module leaders at set times in your module schedule to explore key topics and discuss your progress and troubleshoot any problems you might be having. This will be undertaken using MS Teams or Zoom.

Built in interaction in this course

The research evidence strongly suggest that learning takes place under a number of conditions. One of these conditions is when learners discuss, debate, share new information and obtain formative feedback from peers and tutors. This is often also the time when learners can have some fun and get to 'exercise' their minds. On this module you will have the opportunity to interact on four different levels:

- with the asynchronous lectures and learning materials, when you read or watch them and undertake the set tasks
- with other students and the course team through the synchronous online seminars
- with other students, either by email or in the discussion rooms
- with the course team, either by email or in the discussion rooms

All of these means of interaction not only help to prevent isolation, but there is also strong evidence that student to student interactions are a powerful way to learn. This 'peer assisted learning' can be more effective than other forms of traditional teaching, for example, such as lectures.

How can you get the most out of this course?

Please make sure you:

1. have a reliable Internet connection (you will need to access the course on a regular basis)
2. have set aside enough time to read the reading materials, undertake the tasks in the learning materials and for completion of your assignment. If you do not set aside enough time to interact at the four levels mentioned above, then you might find that your learning experience will be diminished
3. have set aside time to think about what you have learnt
4. contribute to all of the virtual discussions which are relevant to you. Discussion and debates are powerful means of learning.
5. have read all the instructions you have been given. In this module, most instructions have been written in an explicit and clear a way to help you learn.
6. have read, reflected and acted on the feedback you receive during the module.

Module Structure and Engagement Requirements

Each module is delivered across a set period of time. This will enable you to work consistently across those weeks and to fit your studies in with other existing commitments. You are required to participate online for a set minimum number of hours per week (to respond to specific questions set by the module tutor and to interact with your fellow students online). Each module handbook and the VLE will set out clear expectations and minimum engagement requirement, which in line with BSMS policies equates to over 65%.

You are expected to post one answer to each individual learning activity or discussion thread and to respond to at least one of your fellow students' posts within the time period set out by the module tutors.

If you are not able to be online during any of the module period, then you must let the module tutor know in advance and make up that time. The materials in the VLE aim to set

the scene for the module, cover a number of key topics and examples which will help you to think critically about the topic of study. Tutorial support will also be available by e-mail or videoconferencing over the period.

Assessment

All NM Modules are assessed by unseen written examinations with 1,000 word written summative assignments. All modules have a formative assessment opportunity to gain feedback prior to final, summative assessments.

Details of the assessments for the non-NM modules and the dissertation are held within the individual module descriptors.

Teaching Sites

Pre-recorded lectures are delivered online through Brighton and Sussex Medical School's Virtual Learning Environment (VLE) supported by synchronous online seminars. End of year exams are held in May, in person, at Brighton and Sussex Medical School or in agreed alternative invigilated sites, such as British Council Offices for international students.

How to Apply

Please apply online via the following link: [Nuclear Medicine - BSMS](#)

And Finally ...

If you have any further questions, please contact the Course Co-ordinator at the email address given on the cover page of this handbook.

Appendix 1 Timetable Grid

Semester 1.

Online synchronous Seminar
Online asynchronous lecture
Online synchronous lecture/seminar
Formative assessment
Summative assessment

Semester 1																					
Dates w/c	week	Module: MDM132		Module: MDM131		Module: MDM133		Module: MDM134		Module: MDM 129		Module: MDM 130		Module: MDM10		Module: MDM110		Module: MDM122		Module: MDM 164	
		PhysicsRPharm&Regs		Anatomy & Pathology		Essential Single Photon		FDG PET-CT		AdvDiagMultiModality		MRT&theragnostics		ResMethCritAppraisal		LeadershipChangeM		CommLearnTeach		Research Dissertation	
		Session type	Duration	Session type	Duration	Session type	Duration	Session type	Duration	Session type	Duration	Session type	Duration	Session type	Duration	Session type	Duration	Session type	Duration	Session type	Duration
18.9.23		INDUCATION																			
25.9.23																					
2.10.23	Week 1	SEM	1	SEM	0.5																
		LECasey	11	LECasey	3.5																
9.10.23	Week 2	LECasey	13	LECasey	4																
16.10.23	Week 3	SEM	1	LECasey	4																
		LECasey	11																		
23.10.23	Week 4	LECasey	12	LECasey	4																
				SEM	0.5																
30.10.23	Week 5	LECasey	11	LECasey	3.5																
		SEM	1																		
6.11.23	Week 6	FORM essay 9.11.23				SEM	0.5	SEM	0.5												
						LECasey	7	LECasey	7												
13.11.23	Week 7					LECasey	9	LECasey	8												
						LECasey	7														
20.11.23	Week 8					FORM essay 23.11.23		LECasey	8												
						SEM	1														
27.11.23	Week 9	SUM essay 30.11.23				LECasey	8	SEM	1												
						LECasey	8	LECasey	8												
4.12.23	Week 10					LECasey	9	FORM essay 7.12.23													
						LECasey	7	LECasey	8												
11.12.23	Week 11					SEM	1	SEM	1												
18.12.23						SUMM essay 14.12.23															
25.12.23																					

Semester 2.

Semester 2																						
Dates w/c	Weeks	Module: MDM132		Module: MDM131		Module: MDM134		Module: MDM129		Module: MDM129		Module: MDM130		Module: MDM10		Module: MDM110		Module: MDM122		Module: MDM164		
		PhysicsRPharm&Regs	Duration	Anatomy&Pathology for non radiologists	Duration	Essential Single Photon	Duration	FDG PET-CT	Duration	AdvDiagMultiModality	Duration	MRT&theragnostics	Duration	ResMethCritAppraisal	Duration	LeadershipChangeM	Duration	CommLearnTeach	Duration	Research Dissertation	Duration	
1.1.24																						
8.1.24																		LECsynSEM 8-10Jan	21			
15.1.24				FORM Portfolio 16.1.24				SUMMATIVE ESSAY 16.1.24	SEM 0.5	LECasy 8												
22.1.24				LECasy 4					LECasy 8	SEM 0.5	LECasy 8											
29.1.24	Week 1																	LECsynSEM 29-30th Jan	14	SEM	2	
5.2.24	Week 2			LECasy 4					LECasy 8	FORM essay 9.2.23										TUT	2	
12.2.24	Week 3								SEM 1.5	LECasy 8												
19.2.24	Week 4			LECasy 4					LECasy 8	LECasy 8										TUT	2	
26.2.24	Week 5									SEM 1.5	LECasy 8											
4.3.24	Week 6			LECasy 4					LECasy 8	LECasy 8										TUT	2	
11.3.24	Week 7									FORM essay 14.3.24					LECsynSEM 7&8 March	17						
18.3.24	Week 8			LECasy 3	SEM 1				LECasy 7	SEM 1										TUT	2	
25.3.24									SUMM essay 28.3.24	LECasy 7	SEM 1											
1.4.24															LECsynSEM 4&5 April	18	summ assessment 2.4.24					
8.4.24														LECsynSEM w/c 8.4.24	35							
15.4.24	Week 9			SUMM POF 19.4.24																		
22.4.24	Week 10									SUMM essay 25.4.24										TUT	2	
29.4.24	Week 11																					
6.5.24																						
13.5.24 to 1.6.24	Exam Period	Written exam in person				Written exam in person		Written exam in person		Written exam in person		Written exam in person		Summ assessment 27.5.24		Summ assessment 27.5.24				Dissertation submission 3.9.24		