Musculoskeletal Ultrasonography

<table>
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<th>Final award</th>
<th>Postgraduate Certificate (PGCert)</th>
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<td>Intermediate awards available</td>
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<td>Mode of delivery</td>
<td>Full and part-time</td>
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<td>Details of professional body accreditation</td>
<td>Royal College of Radiologists (complementary), Royal College of General Practitioners (complementary)</td>
</tr>
<tr>
<td>Relevant QAA Benchmark statements</td>
<td></td>
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<tr>
<td>Date specification last updated</td>
<td>October 2014</td>
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Alternative locations for studying this programme

<table>
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<th>Location</th>
<th>Which elements?</th>
<th>Taught by UEL staff</th>
<th>Taught by local staff</th>
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<tr>
<td>Homerton University Hospital – Education Centre / Department of Physiotherapy &amp; Sports Medicine</td>
<td>Module 1 and taught components Module 2.</td>
<td>No</td>
<td>Programme Faculty</td>
<td>Lecture and practical based</td>
</tr>
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The summary - Programme advertising leaflet

Programme content

This innovative London based programme has accreditation with the Royal College of Radiologists and the Royal College of General Practitioners. The programme is aimed at the working healthcare professional who intends to extend his or her diagnostic skills in the examination of musculoskeletal medicine. A current, scientific evidence based approach to understanding the physics and instrumentation of ultrasound will underpin the practical training in the use of complex diagnostic ultrasound equipment (sponsored by BK Medical) for competent use in the student’s area of practice.

The emphasis is for accurate and detailed anatomy education to gain skills in the safe and correct attainment of ultrasound images for examination of Sporting and musculoskeletal pathologies.

Postgraduate Certificate (PGCert) in Musculoskeletal Ultrasonography at UEL
There is considerable increase in interest in the use of ultrasound in the management of musculoskeletal disorders from both medical and allied health professionals. This interest is reflected in the volume of literature published regarding ultrasound applications in both the diagnosis and treatment of musculoskeletal disorders. There is a formal recognition from the Royal College of Radiologists (RCR) of a general National shortage of Sonographers and need to involve other professional groups in this area of MSK ultrasound training.

Currently no PGCert programme for Musculoskeletal Ultrasonography exists in London open to non-radiologists. UEL and the Homerton University Hospital NHS Trust have a long established clinical partnership with the Physiotherapy undergraduate programme and are seeking to extend clinical education initiatives in East London with this innovative programme.

Available to students:

- The option of interim Master’s level credits for students who do not wish to, or are unable to, complete the programme is available.
- The flexibility to pay for modules on an individual basis.

Entry requirements

Application will be reviewed by the Programme Lead and will entail a telephone or Skype interview. For entry to the Programme applicants will need to demonstrate they have met the entry criteria:

- Applicants will require a recognised professional qualification in a relevant and acknowledged subject and be a member of an appropriate professional body including:
  
  Medical Practitioners: General Medical Council  
  Osteopaths: HCPC Registered  
  Physiotherapists: HCPC Registered  
  Podiatrists: HCPC Registered  
  Radiographers & Sonographers: HCPC Registered  
  Or equivalent overseas professional qualification

- Applicants should be able to provide evidence of their potential to study at M-level by producing evidence of either: a UK bachelor’s degree to a 2:1 classification or an overseas equivalent in a relevant subject.

- Applicants will be required to provide evidence that an appropriate clinical Mentor has been identified in support of the Work based clinical placement for module 2.

In the case of applicants whose first language is not English, the University’s English Language requirements as detailed on the website at time of application must be met – see http://www.uel.ac.uk/international/application/english-language-requirements/
Acceptable qualifications include IELTS (academic) 7.0 with no individual component below 6.5 and TOEFL 100 (internet based) or 600 (paper based) or equivalent. At UEL we are committed to working together to build a learning community founded on equality of opportunity - a learning community which celebrates the rich diversity of our student and staff populations. Discriminatory behaviour has no place in our community and will not be tolerated. Within a spirit of respecting difference, our equality and diversity policies promise fair treatment and equality of opportunity for all. In pursuing this aim, we want people applying for a place at UEL to feel valued and know that the process and experience will be transparent and fair and no one will be refused access on the grounds of any protected characteristic stated in the Equality Act 2010

**Programme structure**

The teaching year is divided into two terms of roughly equal length.

Full time study: Two core 30 credit module. One module is to be completed by the student consecutively per Term. The first module is a prerequisite to the second module; however there is no obligation to complete the second module.

Part time study: One module is to be completed by the student in one Term per Academic year. The first module remains a pre requisite to the second module.

The student leaving after module 1 will gain 30 M-level credits and 30-CPD points from the Royal College of Radiologists. However, if the student completes only module 1 they cannot be awarded the qualification of PGCert.

Enrolment onto the second module is subject to the student successfully completing the first module and the student having identified a clinical mentor for the work based clinical placement of the second module.

**Learning environment**

Students enrolled on the programme will have access to full UEL student resources. Formal teaching will take place in either the purpose built UEL Clinical Education (CE) Building or the Homerton University Hospital Education building. Practical sessions will include the use of up to date diagnostic ultrasound equipment (BK Medical sponsorship) for demonstration and practise on live models. These sessions will take place in the UEL CE building or in the Education Centre at the Homerton University Hospital. Students will be informed prior to enrolment onto the programme of the intended environment for teaching. All teaching and practical sessions for each module will take place in one campus only.

Both the UEL CE building and the Homerton Education building were purpose built for education with state of the art facilities. Facilities include anatomy models, beds, overhead projectors and interactive white screens and lecture theatres which have hosted multinational symposiums.

Whether delivered at the UEL CE building or the Homerton Education building students will have access to:

- Required and personal reading
• Self-directed learning
• Web based learning / Moodle site
• Work based engagement with Mentor.

Assessment

Module 1 assessment involves a practical OSCE examination within the context of normal anatomy of the upper extremity and lower extremity limb of healthy adults alongside an interpretation of common pathologies within a musculoskeletal context. This will need to be passed in order to move to module 2.

Module 2 is a clinical placement in the work place of the student. The assessment requires completion of a work based portfolio including a minimum of 250 examined scans (pass/fail).

For a successful Work based learning experience and achievement of Module 2 learning outcomes, a work based clinical mentor is required to observe and review clinical musculoskeletal images produced by the student. This is in accordance with practical training suggested by the Royal College of Radiologists who advocate regular appraisal throughout clinical training.

Students with disabilities and/or particular learning needs should discuss assessments with the Programme Leader to ensure they are able to fully engage with all assessment within the programme.

Relevance to work/profession

This programme will provide the professional with the opportunity to develop knowledge; skills, behaviours and values that will allow them to undertake an extended scope of practice in the field of musculoskeletal medicine with the use of diagnostic ultrasonography. The Royal College of Radiologists have formally recognised a National shortage of Sonographers and need to involve other professional groups in this area of MSK ultrasound training.

It is intended that this programme of study allows the student the opportunity to be able to use the advanced skills developed to complement patient management choices in their own clinical practice. In addition the advanced nature of the programme is aimed to facilitate the students own professional development through an enhanced ability to deliver more holistic assessment and treatment options to patients under their care.

Project work

Work based learning is the most appropriate environment to engage in the development and interpretation of skills for clinical practice developed from module 1. It is the responsibility of the student to identify an appropriate clinical mentor in advance of undertaking Module 2. The clinical mentor is not required to work in the same clinical environment but needs to have appropriate skills to review and discuss the student’s work based clinical musculoskeletal ultrasound. This model of learning is supported by the Royal College of Radiographers (RCR) who advocate regular appraisal throughout clinical training.

https://www.rcr.ac.uk/docs/radiology/pdf/BFCR%2812%2917_ultrasound_training.pdf
Added value

The programme is accredited and endorsed by the Royal College of Radiologists (30 CPD points per module) and the Royal College of General Practitioners. This programme is one of only three in the country open to clinicians outside of the field of medicine and radiology. The face to face teaching will provide a complementary environment for peer support, knowledge exchange and networking of experienced likeminded professional clinicians from varied clinical backgrounds.

Your future career

Completion of the PGCert will provide the practitioner the potential to extend their independent clinical practice relevant to the competencies of their professional role and within the scope of their individual practice.

How we support you

The Teaching Team includes internationally recognised consultants in musculoskeletal medicine and radiology for research, who have pioneered innovative research extending the scope of musculoskeletal medicine. Additional study days have been incorporated into the work based module for further tutor pastoral support and practise.

The formal University based teaching will have a low student to tutor ratio of 12:1 for practical components of the teaching and learning. The programme leader will provide online tutor support and further resources to provide relevant learning materials include lectures and videos.

Bonus factors

The London 2012 Olympic Games generated a hub of activity and expectation for post games delivery of Sports Medicine and rehabilitation services in East London. The innovation of this programme has brought together a collaboration of clinicians from the Homerton Hospital (the Hospital for the Olympic Games) with the University of East London working towards further extending the scope of multidisciplinary working and expectations for post games Sports and Musculoskeletal services.

Programme aims and learning outcomes

What is this programme designed to achieve?

The programme aims to provide healthcare professionals involved in the management of musculoskeletal medicine an education and training which allows them to be safe and competent practitioners in the use of diagnostic ultrasound within their own practice. With a particular emphasis on accurate and detailed anatomy the programme will educate practitioners in the safe and correct attainment of ultrasound images in the examination of Sporting and musculoskeletal pathologies and in utilising these images to complement their patient management choices.

The programme is designed to give you the opportunity to:
• Become a safe and competent Practitioner in the use of diagnostic ultrasound for musculoskeletal medicine.
• Develop an understanding of anatomical knowledge as it pertains to ultrasound imaging.
• Introduce the use of clinical ultrasonography as a resource for enhancing clinical intervention and diagnosis with in your own practice.
• Encourage a focused knowledge of anatomy for specific interpretation and reporting of the normal and pathological state.

What will you learn?

Learning Outcomes for the PGCert:

At the end of the programme the student will be able to:

Knowledge

• Critically reflect on the current literature in the field of study for physics and instrumentation for the interpretation of clinical musculoskeletal ultrasound.
• Demonstrate an advanced knowledge and understanding of upper and lower extremity anatomy for detailed interpretation ultrasound imaging.

Thinking skills

• Create hypotheses to assist in the clinical diagnosis of musculoskeletal pathology from ultrasound images of the upper and lower extremity of healthy adults.

Subject-Based Practical skills

• Generate high quality ultrasound imaging for the upper and lower extremity as a resource for enhancing clinical intervention and diagnosis of musculoskeletal pathology.

Skills for life and work (general skills)

• Reflect on the skills required for original thought and evidence to generate hypotheses for clinical problem solving.

The programme structure

Introduction:

All programmes are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to one of 5 levels:
3 equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree programme

4 equivalent in standard to the first year of a full-time undergraduate degree programme

5 equivalent in standard to the second year of a full-time undergraduate degree programme

6 equivalent in standard to the third year of a full-time undergraduate degree programme

7 equivalent in standard to a Master’s degree

Credit rating

The overall credit-rating of this programme is 60 credits (30 credits per module).

Typical duration

The duration of this programme is one calendar year full-time if enrolment is in September, and two calendar years part-time. For February enrolment, the duration becomes 15 months full time, and 27 months part-time.

It is possible to move from full-time to part-time study and vice-versa to accommodate any external factors such as financial constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period.

How the teaching year is divided

The teaching year is divided into two terms of roughly equal length. A typical student registered in a full-time attendance mode will study one 30 credit modules per term and a typical student registered in a part-time attendance mode will study one module per academic year.

What you will study when

<table>
<thead>
<tr>
<th>Level</th>
<th>MODULE TITLE</th>
<th>LEARNING ENVIRONMENT</th>
<th>MODULE STRUCTURE</th>
<th>ASSESSMENT</th>
<th>Credit</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>1. Musculoskeletal Ultra sonography: The Science, Instrumentation and Application of the upper &amp; lower extremity.</td>
<td>UEL or Homerton University Hospital location.</td>
<td>2 blocks of 2 days of Tutor led face to face teaching (28hours). Tutor led practise with live models. To take place within one Term.</td>
<td>Objective Structured Clinical Examination (OSCE). Examined by course Tutors and 2nd marked by UEL staff.</td>
<td>30</td>
<td>Core</td>
</tr>
<tr>
<td>7</td>
<td>2. Musculoskeletal Ultra sonography: Competency in Ultrasonography within Clinical Practice</td>
<td>Work based</td>
<td>Mentored work based placement. An additional 1 block of 2 days of Tutor led tutorial and practise (14 hours). To take place within one Term.</td>
<td>Clinical Portfolio: (to include 250 scans). Reviewed and marked by course Tutors, 2nd marked by UEL staff and reviewed by external examiner.</td>
<td>30</td>
<td>Core</td>
</tr>
</tbody>
</table>

*Please Note - A core module for a programme is a module which a student must have passed (i.e. been awarded credit) in order to achieve the relevant named award. An optional module for a programme is a module selected from a range of modules available on the programme.

**Requirements for gaining an award**

In order to gain a Postgraduate Certificate, you will need to obtain 60 credits at Level 7.

In order to gain a Postgraduate Diploma, you will need to obtain 120 credits at Level 7.

In order to obtain a Masters, you will need to obtain 180 credits at Level 7. These credits will include a 60 credit level 7 core module of advanced independent research.

**Masters Award Classification**

Where a student is eligible for an Masters award then the award classification is determined by calculating the credit-weighted arithmetic mean of all marks on the current enrolment and applying the mark obtained as a percentage, with all decimals points rounded up to the nearest whole number, to the following classification:

| 70% - 100% | Distinction |
| 60% - 69% | Merit |
| 50% - 59% | Pass |
| 0% - 49% | Not passed |

**Further information**
This programme will provide the opportunity to work with clinical peers and professionals from a mixed clinical background alongside state of the art facilities and support with up to date clinical diagnostic ultrasound equipment.

**Teaching, learning and assessment**

**Knowledge is developed through**

- Guided reading with online video resources.
- Knowledge-based activities with Tutor feedback.
- Online discussions and activities

**Thinking skills are developed through**

- Reflective activities with feedback.
- Reflection with Clinical Mentor.
- Online discussions and activities

**Practical skills are developed through**

- Supervised practical sessions with ultrasound technology and live models.
- Online clinical reference resources.
- Clinical mentorship

**Skills for life and work (general skills) are developed through**

- The clinical workload.
- Supervision with feedback
- Portfolio work

**Assessment**

**Knowledge is assessed by**

- Practical Examination (OSCE)
- Coursework

**Thinking skills are assessed by**

- Practical Examination (OSCE)
- Coursework
- Clinical portfolio

**Practical skills are assessed by**

- Practical Examination (OSCE)
- Portfolio completion

**Skills for life and work (general skills) are assessed by**
• Practical Examination (OSCE)
• Portfolio completion
• Coursework

It is recognised that any student is unlikely to cover the full potential range of musculoskeletal pathology (RCR). It is therefore recommended that the practical training of 250 examinations is to be completed over a period of 3-6 months within the area of work of the student. Scans completed during Module 1 can be included in the portfolio having been reviewed by the course Tutor. A level 2 competency described by the RCR is recognised in the diagnostic requirements of Module 2 learning outcomes. Further support in the attainment of Module 2 learning outcomes is in the addition of two academic based study days, where there will be the opportunity to practise supervised scanning and gain Peer and Tutor support.

Scans included in the final portfolio will be anonymised.

How we assure the quality of this programme

Before this programme started, the following was checked:

• there would be enough qualified staff to teach the programme;
• adequate resources would be in place;
• the overall aims and objectives were appropriate;
• the content of the programme met national benchmark requirements;
• the programme met any professional/statutory body requirements;
• the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

This is done through a process of programme approval which involves consulting academic experts including some subject specialists from other institutions.

How we monitor the quality of this programme

The quality of this programme is monitored each year through evaluating:

• external examiner reports (considering quality and standards);
• statistical information (considering issues such as the pass rate);
• student feedback.

Drawing on this and other information, programme teams undertake the annual Review and Enhancement Process which is co-ordinated at School level and includes student participation. The process is monitored by the Quality and Standards Committee.

Once every six years an in-depth review of the whole field is undertaken by a panel that includes at least two external subject specialists. The panel considers documents, looks at student work, speaks to current and former students and speaks to staff before drawing its conclusions. The result is a report highlighting good practice and identifying areas where action is needed.

The role of the programme committee
This programme has a programme committee comprising all relevant teaching staff, student representatives and others who make a contribution towards the effective operation of the programme (e.g. library/technician staff). The committee has responsibilities for the quality of the programme. It provides input into the operation of the Review and Enhancement Process and proposes changes to improve quality. The programme committee plays a critical role in the quality assurance procedures.

**The role of external examiners**

The standard of this programme is monitored by at least one external examiner. External examiners have two primary responsibilities:

- To ensure the standard of the programme;
- To ensure that justice is done to individual students.

External examiners fulfil these responsibilities in a variety of ways including:

- Approving exam papers/assignments;
- Attending assessment boards;
- Reviewing samples of student work and moderating marks;
- Ensuring that regulations are followed;
- Providing feedback through an annual report that enables us to make improvements for the future.

The external examiner reports for this programme are located on the UEL virtual learning environment (Moodle) on the school notice board under the section entitled ‘External Examiner Reports & Responses’. You can also view a list of the external examiners for the UEL School by clicking on the link below.

[http://www.uel.ac.uk/qa/externalexaminersystem/currentexaminers/](http://www.uel.ac.uk/qa/externalexaminersystem/currentexaminers/)

**Listening to the views of students**

The following methods for gaining student feedback are used on this programme:

- Module evaluations
- Student/Staff consultative committee (meeting once a year)

Students are notified of the action taken through:

- circulating the minutes of the programme committee
- Individual responses to students as required
- Postings on our online discussion forums

**Listening to the views of others**

The following methods are used for gaining the views of other interested parties:

- Questionnaires to former students
- Annual student satisfaction questionnaire
Clinical liaison committee
Feedback from clinical mentors and employers

Further information

A member of the programme faculty will be assigned to each student as a personal tutor to support engagement with academic study. The personal tutor role is pastoral and separate to the work based clinical mentor role.

Where you can find further information

Further information about this programme is available from:

- The UEL web site [http://www.uel.ac.uk](http://www.uel.ac.uk)
- The student handbook (give web-site where available)
- Module study guides (give web-site where available)
- UEL School of Health, Sport & Bioscience [http://www.uel.ac.uk/hsb/](http://www.uel.ac.uk/hsb/)
- Homerton University Hospital [http://www.homerton.nhs.uk/](http://www.homerton.nhs.uk/)