

Distance Learning  
Department of Biomedical Engineering  
National Centre for Prosthetics and Orthotics  
Wolfson Building  
106 Rottenrow East  
Glasgow  
G4 0NW

## Postgraduate Awards in Rehabilitation Studies

### STUDENT HANDBOOK

#### Session 2023-2024

Authors  
Karyn Ross

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The contents of this handbook are as far as possible up to date and accurate at the date of publication.

Changes and restrictions are made from time to time and the University reserves the right to add to, amend, or withdraw courses and facilities, to restrict student numbers and to make any other alterations as it may deem desirable and necessary. Changes are published by incorporation in the next edition of the University Calendar.

# WELCOME

## From the Head of Department

Dear All

On behalf of all members of staff, I welcome you to the Department of Biomedical Engineering. We hope you will have an enjoyable and successful time with us.

This handbook explains the organisation and regulations affecting the MSc, PgDip and PGCert Courses.

### **StrathLife – The Student Journey**

This handbook should be read in conjunction with ‘everything you need to know about student life’ which can be found here:

[www.strath.ac.uk/studywithus/strathlife/](http://www.strath.ac.uk/studywithus/strathlife/)

This provides information on the range of support and information services within the University.

Karyn Ross ([k.ross@strath.ac.uk](mailto:k.ross@strath.ac.uk)) as Course Director, or Gillian Boyd ([gillian.boyd@strath.ac.uk](mailto:gillian.boyd@strath.ac.uk)) the administrator will be your main points of contact and will help with any academic issues you may have. .



*Professor Stuart Reid FRSE  
Head of Department  
Department of Biomedical Engineering*

Distance Learning  
Department of Biomedical Engineering

# STUDENT HANDBOOK

## Session 2023-2024

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## INTRODUCTION

The Student Handbook is designed to address the various questions students may have about the many different aspects of studying for a postgraduate qualification at the National Centre for Prosthetics and Orthotics at the University of Strathclyde.

Any questions regarding any aspect of this handbook, or any other aspect of the course, should be directed in the first instance to:

*Course Director*

Karyn Ross ([k.ross@strath.ac.uk](mailto:k.ross@strath.ac.uk))

Or

*Course Administrator*

Gillian Boyd ([gillian.boyd@strath.ac.uk](mailto:gillian.boyd@strath.ac.uk))

In addition to the information contained within this manual, it is recommended that students take time to familiarise themselves with the University of Strathclyde website, which contains extensive information on all aspects of university life.

This may be found at: [www.strath.ac.uk](http://www.strath.ac.uk)

## DEPARTMENT OF BIOMEDICAL ENGINEERING and THE NATIONAL CENTRE



*The National Centre*

The Denny Report, (The Future of the Artificial Limb Service in Scotland, HMSO, 1970), has had a profound influence on all aspects of training and education in prosthetics in Scotland. One of its major recommendations was that prosthetists should be given the necessary training and education to enable them to attain professional status. The prosthetists would then be able to play a part in patient rehabilitation as a full member of a clinic team.

The National Centre for Training and Education in Prosthetics and Orthotics was established in 1972. In 2007 the Centre's name was revised and is now the National Centre for Prosthetic and Orthotics. The Centre is based in the University of Strathclyde with associated facilities in rehabilitation centres and hospitals in the area. It is administered by the University authorities on behalf of the Scottish Executive. One of the major responsibilities of the Centre is to supervise the professional training of prosthetists on behalf of the Scottish Health Service. This responsibility was enlarged to include the field of orthotics in 1974.

In 1973 a Higher Diploma Course in Prosthetics and Orthotics was established under the auspices of the Scottish Technical Education Council. The basic science subjects were provided by Glasgow College of Technology and the specialised subjects by the National Centre for Training and Education in Prosthetics and Orthotics, University of Strathclyde.

In 1986 the University of Strathclyde instituted a four year Honours Degree course in Prosthetics and Orthotics in place of the Higher Diploma Course. In 2015 a fulltime MSc in Prosthetics and Orthotics was introduced.

In response to interest from the profession, the Distance Learning course was developed and introduced in September 2000.

The Department of Biomedical Engineering, in the Faculty of Engineering, was formed in 2012 following the merger of the Bioengineering Unit and the National Centre for Prosthetics and Orthotics. The merger reconnects two complementary and key areas of health technology teaching and research within the University. The single department offers students unrivalled undergraduate and postgraduate opportunities for learning and knowledge exchange in prosthetics and orthotics and for advanced postgraduate study in a broad range of biomedical engineering disciplines.

The Bioengineering Unit was established 50 years ago and is an internationally-recognised centre of excellence for postgraduate education and research at the interface between engineering and the life sciences, with particular emphasis on clinically-related research. The goal of the Unit is to transform and improve future healthcare through innovations and advances in science in technology.

## GENERAL NOTES

### **Equality and Diversity**

The University of Strathclyde is committed to achieving and promoting equality of opportunity in the learning, teaching, research and working environments.

We value the diversity of our students and support the development of mutual respect and positive relations between people.

The University has in place Equality Outcomes which meet the requirements of the Equality Act 2010.

You are advised to familiarise yourself with the University approach on equality and diversity and relevant developments and information by visiting the website:

[www.strath.ac.uk/equalitydiversity/](http://www.strath.ac.uk/equalitydiversity/)

If you have any queries please bring these to the attention of staff or the University's Equality and Diversity office. Email: [equalopportunities@strath.ac.uk](mailto:equalopportunities@strath.ac.uk) Telephone: 0141 548 2811

### **Athena SWAN**

The University currently holds a Bronze Athena Swan award, recognising our commitment to advancing women's' careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.

The Athena SWAN Charter has been developed by the Equality Challenge Unit to encourage and recognise commitment to combating the under-representation of women in STEMM research and academia. If you would like any additional information, please contact the Equality and Diversity office.

### **Students with Disabilities**

The University is committed to providing an inclusive learning and working environment for disabled people.

If you have, or think you have, a disability we encourage you to disclose it as soon as possible. Declaring your disability will enable you to access any additional support that you may need and help to ensure you become a successful student. The information you provide will be treated as confidential and will not be shared with other staff without your consent.

The University has a dedicated Disability Service that offers specific advice, information and assistance to disabled students, including information on the Disabled Students Allowance (DSA). Further information is available from the website:

[www.strath.ac.uk/professionalservices/disabilityandwellbeing/](http://www.strath.ac.uk/professionalservices/disabilityandwellbeing/)

In addition, each academic department/ school (for HaSS) has at least one Departmental Disability Contact (DDC), who acts as a first point of contact for disabled students. The departmental Disability Contact list is available on the website at:

[www.strath.ac.uk/professionalservices/disabilityandwellbeing/contact/](http://www.strath.ac.uk/professionalservices/disabilityandwellbeing/contact/)

Please inform your course tutor, the DDC or member of the Disability Service of your needs as soon as possible to provide you with the relevant support you require.

Email: [disabilityservice@strath.ac.uk](mailto:disabilityservice@strath.ac.uk) Telephone: 0141 548 3402

## COURSE INFORMATION

### Background

The suite of Postgraduate courses in Rehabilitation Studies leading to awards of Master of Science, Postgraduate Diploma and Postgraduate Certificate are modular and intended for off-campus delivery. The courses have been designed for professionals already working in prosthetics, orthotics, therapy, surgery or associated disciplines. They are offered by distance learning to allow participants to study at their own pace, in their own homes at times that are convenient to themselves.

### Course Structure

Students select courses from the range of instructional modules available. The choice will be limited by initial qualifications. You should familiarise yourself with the compulsory classes which must be selected for each award.

All the modules will include coursework, class work, tutorials and self-directed learning with the appropriate academic support.

Students are assessed on the work contained within each module normally by a combination of coursework assignments and written examinations.

Each module has a credit value and students will accumulate credits as they progress through the course.

# COURSE REGULATIONS

You are encouraged to consult the Regulations governing your course on a regular basis. The Regulations set out the framework for your studies and specify the criteria for your progression through the course. The language is carefully chosen to cover all eventualities and may need some interpretation or clarification.

Students should familiarise themselves with the University Calendar regarding the regulations at:

[Academic Regulations | University of Strathclyde](#)

The following regulations have been extracted.

## 19.42.98 to 19.42.125

**MSc in Rehabilitation Studies**  
**Postgraduate Diploma in Rehabilitation Studies**  
**Postgraduate Certificate in Rehabilitation Studies**

### Course Regulations

These regulations are to be read in conjunction with Regulation 19.1. This is available at the following web site address:

<https://www.strath.ac.uk/studywithus/academicregulations/biomedicalengineering/>

### Admission

19.48.1 Regulations 19.1.1 and 19.1.3 shall apply.

### Duration of Study

The normal duration of study will be  
for the degree of MSc - 36 months  
for the Postgraduate Diploma – 24 months  
for the Postgraduate Certificate – 12 months

### Mode of Study

19.42.127 The courses are available by distance-learning only

### Curriculum

19.42.128 All students shall undertake an approved curriculum as follows:

- for the Postgraduate Certificate – no fewer than 60 credits
- for the Postgraduate Diploma – no fewer than 120 credits including the compulsory classes
- for the degree of MSc – no fewer than 180 credits including a project

Compulsory Classes	Level	Credits
94 938 Research Methodology	5	20
94 939 Data Analysis	5	20

No fewer than 60 credits chosen from the list of optional classes

Optional Classes	Level	Credits
94 904 Orthotic Studies	5	20
94 905 Prosthetic Studies	5	20
94 927 Clinical Governance	5	20
94 928 Introductory Biomechanics	5	20
94 929 Lower Limb Prosthetic Biomechanics	5	20
94 930 Lower Limb Orthotic Biomechanics	5	20
94 936 Clinical Gait Analysis	5	20

Such other Level 5 classes as may be approved by the Course Director.



Students for the degree of MSc only:  
94 900 Project 5 60

### Examination, Progress and Final Assessment

19.42.129 Regulations 19.1.25 – 19.1.33 shall apply.  
19.42.130 The final assessment will be based on performance in the examinations, coursework, and the Project where undertaken.

### Award

19.42.131 **Degree of MSc:** In order to qualify for the award of the degree of MSc in the chosen course, a candidate must have performed to the satisfaction of the Board of Examiners and must have accumulated no fewer than 180 credits from the appropriate course curriculum, of which 60 must have been awarded in respect of the Project.  
19.42.132 **Postgraduate Diploma:** In order to qualify for the award of the Postgraduate Diploma in the chosen course, a candidate must have accumulated no fewer than 120 credits from the taught classes of the course.  
19.42.133 **Postgraduate Certificate:** In order to qualify for the award of the Postgraduate Certificate in the chosen course, a candidate must have accumulated no fewer than 60 credits from the taught classes of the course.

19.42.134 to  
19.42.154 (numbers not used)

### Prosthetics Rehabilitation Studies

#### MSc Prosthetics Rehabilitation Studies

#### Postgraduate Diploma in Prosthetics Rehabilitation Studies

#### Postgraduate Certificate in Prosthetics Rehabilitation Studies

### Course Regulations

[These regulations are to be read in conjunction with Regulation 19.1.]

### Admission

19.42.155 Regulations 19.1.1 and 19.1.3 shall apply. Students must be qualified professional prosthetists.

### Mode of Study

19.42.156 The courses are available by distance-learning only.

### Curriculum

19.42.157 All students shall undertake an approved curriculum as follows:

for the Postgraduate Certificate – no fewer than 60 credits  
for the Postgraduate Diploma – no fewer than 120 credits including the compulsory classes  
for the degree of MSc – no fewer than 180 credits including a project

### Compulsory Classes

	Level Credits	
94 938 Research Methodology	5	20
94 939 Data Analysis	5	20
94 937 Advanced Prosthetic Science	5	20
94 929 Lower Limb Prosthetic Biomechanics	5	20

No fewer than 40 credits chosen from the list of optional classes

### Optional Classes

	Level Credits	
94 935 Advanced Orthotic Science	5	20
94 927 Clinical Governance	5	20

94 928	Introductory Biomechanics	5	20
94 930	Lower Limb Orthotic Biomechanics	5	20
94 936	Clinical Gait Analysis	5	20
BE942	The Holistic Management of Foot and Ankle Musculoskeletal (MSK) Conditions	5	20

Such other Level 5 classes as may be approved by the Course Director.

Students for the degree of MSc only:

94 900	Project	5	60
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### Examination, Progress and Final Assessment

19.42.158 Regulations 19.1.25 – 19.1.33 shall apply.

19.42.159 The final assessment will be based on performance in the examinations, coursework, and the Project where undertaken.

### Award

19.42.160 **Degree of MSc:** In order to qualify for the award of the degree of MSc in the chosen course, a candidate must have performed to the satisfaction of the Board of Examiners and must have accumulated no fewer than 180 credits from the appropriate course curriculum, of which 60 must have been awarded in respect of the Project.

19.42.161 **Postgraduate Diploma:** In order to qualify for the award of the Postgraduate Diploma in the chosen course, a candidate must have accumulated no fewer than 120 credits from the taught classes of the course.

19.42.162 **Postgraduate Certificate:** In order to qualify for the award of the Postgraduate Certificate in the chosen course, a candidate must have accumulated no fewer than 60 credits from the taught classes of the course.

19.42.163

to 19.42.183 (numbers not used)

### Orthotics Rehabilitation Studies

#### MSc Orthotics Rehabilitation Studies

#### Postgraduate Diploma in Orthotics Rehabilitation Studies

#### Postgraduate Certificate in Orthotics Rehabilitation Studies

### Course Regulations

[These regulations are to be read in conjunction with Regulation 19.1.]

### Admission

19.42.184 Regulations 19.1.1 and 19.1.3 shall apply. Students must be qualified professional orthotists.

### Mode of Study

19.42.185 The courses are available by distance-learning only.

### Curriculum

19.42.186 All students shall undertake an approved curriculum as follows:

for the Postgraduate Certificate – no fewer than 60 credits

for the Postgraduate Diploma – no fewer than 120 credits including the compulsory classes

for the degree of MSc – no fewer than 180 credits including a project

### Compulsory Classes

		Level	Credits
94 938	Research Methodology	5	20
94 939	Data Analysis	5	20

94 935	Advanced Orthotic Science	5	20
94 930	Lower Limb Orthotic Biomechanics	5	20

No fewer than 40 credits chosen from the list of optional classes

<b>Optional Classes</b>		<b>Level Credits</b>	
94 937	Advanced Prosthetic Science	5	20
94 927	Clinical Governance	5	20
94 928	Introductory Biomechanics	5	20
94 929	Lower Limb Prosthetic Biomechanics	5	20
94 936	Clinical Gait Analysis	5	20
BE942	The Holistic Management of Foot and Ankle Musculoskeletal (MSK) Conditions	5	20

Such other Level 5 classes as may be approved by the Course Director.

Students for the degree of MSc only:

94 900	Project	5	60
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### **Examination, Progress and Final Assessment**

- 19.42.187 Regulations 19.1.25 – 19.1.33 shall apply.  
 19.42.188 The final assessment will be based on performance in the examinations, coursework, and the Project where undertaken.

### **Award**

- 19.42.189 Degree of MSc: In order to qualify for the award of the degree of MSc in the chosen course, a candidate must have performed to the satisfaction of the Board of Examiners and must have accumulated no fewer than 180 credits from the appropriate course curriculum, of which 60 must have been awarded in respect of the Project.  
 19.42.190 Postgraduate Diploma: In order to qualify for the award of the Postgraduate Diploma in the chosen course, a candidate must have accumulated no fewer than 120 credits from the taught classes of the course.  
 19.42.191 Postgraduate Certificate: In order to qualify for the award of the Postgraduate Certificate in the chosen course, a candidate must have accumulated no fewer than 60 credits from the taught classes of the course.

19.42.192  
to 19.42.212 (number not used)

## **Prosthetics and Orthotics Rehabilitation Studies**

### **MSc Prosthetics and Orthotics Rehabilitation Studies**

#### **Postgraduate Diploma in Prosthetics and Orthotics Rehabilitation Studies**

#### **Postgraduate Certificate in Prosthetics and Orthotics Rehabilitation Studies**

### **Course Regulations**

[These regulations are to be read in conjunction with Regulation 19.1.]

### **Admission**

- 19.42.213 Regulations 19.1.1 and 19.1.3 shall apply. Students must be qualified professional prosthetists and orthotists.

### **Mode of Study**

- 19.42.214 The courses are available by distance-learning only.

### **Curriculum**

- 19.42.215 All students shall undertake an approved curriculum as follows:

for the Postgraduate Certificate – no fewer than 60 credits  
 for the Postgraduate Diploma – no fewer than 120 credits including the compulsory classes  
 for the degree of MSc – no fewer than 180 credits including a project

<b>Compulsory Classes</b>	<b>Level Credits</b>	
94 938 Research Methodology	5	20
94 939 Data Analysis	5	20
94 937 Advanced Prosthetic Science	5	20
94 935 Advanced Orthotic Science	5	20

No fewer than 40 credits chosen from the list of optional classes

<b>Optional Classes</b>	<b>Level Credits</b>	
94 927 Clinical Governance	5	20
94 928 Introductory Biomechanics	5	20
94 929 Lower Limb Prosthetic Biomechanics	5	20
94 930 Lower Limb Orthotic Biomechanics	5	20
94 936 Clinical Gait Analysis	5	20
BE942 The Holistic Management of Foot and Ankle Musculoskeletal (MSK) Conditions	5	20

Such other Level 5 classes as may be approved by the Course Director.

Students for the degree of MSc only:

94 900 Project	5	60
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#### **Examination, Progress and Final Assessment**

19.42.216 Regulations 19.1.25 – 19.1.33 shall apply.

19.42.217 The final assessment will be based on performance in the examinations, coursework, and the Project where undertaken.

#### **Award**

19.42.218 Degree of MSc: In order to qualify for the award of the degree of MSc in the chosen course, a candidate must have performed to the satisfaction of the Board of Examiners and must have accumulated no fewer than 180 credits from the appropriate course curriculum, of which 60 must have been awarded in respect of the Project.

19.42.219 Postgraduate Diploma: In order to qualify for the award of the Postgraduate Diploma in the chosen course, a candidate must have accumulated no fewer than 120 credits from the taught classes of the course.

19.42.220 Postgraduate Certificate: In order to qualify for the award of the Postgraduate Certificate in the chosen course, a candidate must have accumulated no fewer than 60 credits from the taught classes of the course.

19.42.221 to

19.42.241 (numbers not used)

## ASSESSMENT OF STUDENTS

**NB.** All coursework marks circulated during the academic year are subject to, and conditional upon, the ratification by the Board of Examiners in September.

All modules involve the submission of coursework which are circulated throughout the academic year. Courseworks are submitted at set times, and feedback will be provided in accordance with the published dates. All coursework submitted should, where appropriate, be correctly referenced and all pages must be identified with the student's name, registration number, module code, module name and academic year.

A variety of assessment formats are used and might include submission of a piece of written work, a Powerpoint (video) presentation with a question and answer session or a timed online written examination. All assessments can be completed at a location suitable for the student.

**Feedback will be circulated to students within 3 weeks following the submission deadline.**

Individual assessment criteria for each module are contained in the Module Descriptors which can be found in Appendix B. As the percentage that each coursework contributes to the module summary mark varies between modules, students should familiarise themselves with the requirements of each module they undertake. However the summary pass mark for each module is 50%.

Credits will only be awarded for each module when **all** required elements have been passed.

### Coursework Submission Policy

Deadlines for submission of assignments must be strictly observed and these will be given at the start of each module. However the university acknowledges that sometimes

## Extensions

Before requesting an extension, it is advised that students read this section fully. The extension request requirements vary depending on the length of extension requested and the method by which the request is submitted. There is also some guidance on what might constitute grounds for an extension request to be granted.

Students requesting an extension to the deadline for a piece of coursework must apply via the extensions tool in Myplace. Further guidance about using this tool is contained under the heading [‘Myplace Extension Request’](#) below. If the extension tool is not available for your coursework, please follow the instructions contained under the heading [‘Offline Process for Submitting an Extension Request’](#) below. **NOTE: where the extension tool in Myplace is available, it should be used.**

Please pay attention to the examples found under the heading [‘Grounds for Extending the Deadline for Coursework Submission’](#) below. These are taken from the [Policy and Procedure on Extensions to Coursework Submission](#). The policy intends to be supportive of students, and staff will monitor students' use of extensions in order to identify students who may require support. The policy provides examples of what might be grounds for granting an extension and what is unlikely to be grounds for the granting of an extension. The list does not try to cover every possible scenario so students should discuss with staff any circumstances that are negatively impacting their studies.

**Extension requests will normally be made in advance of a coursework submission deadline. In exceptional cases, students may apply for an extension retrospectively.**

## ***Extension of less than seven calendar days***

Requests for an extension of less than seven calendar days do not require formal supporting evidence (e.g., a doctor's letter). However, students are encouraged to communicate to staff any circumstances that are negatively impacting their studies as early as possible, especially where other assessments or aspects of their studies are also impacted. This can be done by submitting a [Self-Certificate form on Pegasus](#).

## ***Extension of longer than seven days***

For extensions that are longer than seven days, it is essential that students complete a '[Personal Circumstances Form](#)' and submit it directly to Student Business for their Faculty at: [studentbusiness-engineering@strath.ac.uk](mailto:studentbusiness-engineering@strath.ac.uk) within five working days of the agreed extension date. There is information about the Personal Circumstances Procedure [on the website](#).

**Failure to submit evidence of medical or personal circumstances for extension requests of seven days or more could result in the extension request being rejected or revoked and/or any subsequent academic appeal being regarded as inadmissible.**

Students should note that certified cases of medical and/or personal circumstances will be considered sympathetically and the rules will be applied in a caring manner. Where there are sensitivities or difficulties in obtaining evidence (for example, a death certificate), a compassionate approach will be taken. The rules are designed to be as clear as possible, to help students plan their work sensibly and ensure parity in the service provided to all students.

## **Grounds for Extending the Deadline for Coursework Submission**

The list below does not try to cover every possible scenario but provides examples of what might be grounds for granting an extension and what is unlikely to be grounds for the granting of an extension. Students should not be discouraged from submitting a request if they do not see their situation described below.

### ***Examples of Medical Circumstances***

Medical conditions or illness, including physical and/or mental health problems that negatively impact a student's preparation for an assessment.

### ***Examples of Personal Circumstances***

- serious illness or death of a person close to the student
- family break-up
- being a victim of crime
- being in a serious car accident
- jury service
- significant relationship breakdown
- unexpected caring commitments
- homelessness
- Home Office requirements
- fire
- flood
- adverse weather conditions
- exceptional travel circumstances outwith a student's control which prevented them from meeting the published submission date
- other exceptional circumstances that can be reasonably considered to negatively impact a student's ability to submit coursework on time.

## ***Examples of Insufficient Grounds for an Extension***

The following circumstances would not be acceptable grounds for granting an extension:

- poor planning and time management
- error made in understanding the published dates of assessment submissions
- having another assessment due on or around the same date
- minor IT issues such as computer failure
- failure of third parties to deliver the assessment
- holidays, social events, moving house, or any event planned in advance of the submission deadline
- failure to make alternative travel plans when disruptions were advised in advance

## **Myplace Extension Request Process**

Instructions for the submission of an extension request via Myplace are below. [A version of these instructions with images of the screen to support the explanation is also available.](#)

1. Go to the Myplace site for the class in which you wish to request an extension to the deadline of a piece of coursework
2. Click on the assignment link for the piece of coursework. This will open a page containing information about the assignment, the status of your submission and the deadline
3. Click on the Extensions section and select 'Request Extension'
4. You will be required to fill in three parts of a form:
  - i. Select a reason from the dropdown list
  - ii. Propose a new deadline (date and time)
  - iii. Describe in more detail your reason for requesting an extension
5. Submit your extension request

You will receive a Myplace notice and an email to confirm that your request has been submitted. If you have downloaded the University's Mobile App and have logged in using your DS username, you will also receive a push notification on your device.

Your request will be considered, resulting in one of the following two outcomes:

1. Your extension request will be granted – either based on the date and time you proposed or based on an alternative date and time specified by the appropriate member of staff
2. Your extension request will not be granted\*

The outcome of your extension request will be communicated to you via a Myplace notice and an email. If you have downloaded the University's Mobile App and have logged in using your DS username, you will also receive a push notification on your device.

If you submit an extension request and decide that you no longer require it, you can cancel the request up until the point at which it is approved. After it has been approved, you cannot cancel the request but you can, of course, submit the work in time for the original deadline.

\*If your extension request is not granted and you would like to access support please contact Karyn Ross ([k.ross@strath.ac.uk](mailto:k.ross@strath.ac.uk)). For details of central University support services, please see the 'Support' section below.

# Offline Process for Submitting an Extension Request

If you require to apply for an extension offline in first instance please contact Karyn Ross ([k.ross@strath.ac.uk](mailto:k.ross@strath.ac.uk)) by email and also copy in your module lead.

## Support

### **Disability and Wellbeing Service (including Student Counselling Service and Student Health)**

Phone: 0141 548 3402

Email: [disability-wellbeing@strath.ac.uk](mailto:disability-wellbeing@strath.ac.uk)

Disability & Wellbeing Service

Room 4.36, Level 4,

Graham Hills Building

50 George Street

Glasgow

G1 1QE

For more information visit the [Disability and Wellbeing Service webpage](#).

### **Academic Support**

Phone: 0141 548 4064/4062

Email: [learner-development@strath.ac.uk](mailto:learner-development@strath.ac.uk)

TL453, Prof. Mary Dunn Wing,

Learning and Teaching Building.

G1 1XQ

For more information visit the [Academic support | University of Strathclyde](#)

### **International Student Support**

Phone: 0141 548 4273

Email: [infoandadvice@strath.ac.uk](mailto:infoandadvice@strath.ac.uk)

For more information visit the [International Student Support webpage](#).

### **Strathclyde Students' Union's The Advice Hub**

Phone: 0141 567 5040

Email: [strathunion.advice@strath.ac.uk](mailto:strathunion.advice@strath.ac.uk)

For location see [Strath Union's Advice Hub webpage](#).

## Penalties for the Late Submission of Coursework

Coursework is deemed to be late when it is submitted after the published deadline without an agreed extension, and in the absence of personal circumstances.

The [Policy and Procedure on Late Submission of Coursework provides a detailed account of the policy and procedures for the late submission of coursework](#). You should read this document carefully, noting that there may be exceptions to the policy outlined for specific types of coursework, such as (but not limited to) group work or presentations. Staff will communicate any such instances to students. However, in all instances, the range and timing of penalties will be applied according to a commitment to fairness and supporting all students in their studies alongside agreed procedures. Staff will monitor the late submission of assessments in order to identify any students who may require support. For regular coursework, the Policy and Procedure on Late Submission of Coursework outlines the penalties to be applied, and these are summarised below.

Coursework that is submitted late, but within seven calendar days of the published deadline date and time, will be subject to penalties, as shown in the table below.



Students who can demonstrate that they faced exceptional circumstances on the deadline day, and who submit their coursework within 4 hours of the published date and time, will not have their coursework subject to penalties. This 4 hour period is called the 'grace period' – see below the table for further information.

#### **4.2 Penalties will be applied on a sliding scale**

- 4.2.1 A “sliding scale” penalty system should be applied to minimise occurrences of late submission of coursework.
- 4.2.2 The sliding scale applied will be based on the maximum marks available on a percentage scale.
- 4.2.3 Coursework that is submitted late, but within 24 hours of the submission deadline will be subject to a 10 point deduction on the percentage mark being applied to the original mark.
- 4.2.4 For each subsequent day, or part day that a coursework is submitted late up until seven working days from the deadline, a penalty of 5 percentage point deduction per day or part day will be applied to the original mark.
- 4.2.5 The maximum number of percentage points that can be deducted for late submission is 40.

#### **4.3 The policy should be supportive of students and not adversely impact on progression where the work is of a pass standard**

- 4.3.1 All submitted assessments will be marked at face value with feedback provided, irrespective of the mark formally recorded. That is, all students should be made aware of the mark awarded prior to the application of any penalty for late submission.
- 4.3.2 In cases where a student can demonstrate that unanticipated problems have arisen before the time set on the day of the submission deadline, or date of approved extended deadline, they must indicate the nature of the issue when uploading their submission. Following this formal notification to the Department/School, students will be automatically granted a grace period in which to submit the assessment of four hours on the day of submission, thereby allowing time to mitigate against unforeseen personal events, issues etc. on the day of submission. Penalties will be applied when these four hours come to an end.
- 4.3.3 During the exceptional period of extension, IT issues and travel problems would be accepted as grounds for extension up to the four hours after the deadline, although alone they would not be grounds for lengthier extension requests.

#### **4.4 A minimum mark for late work of a pass standard that is submitted within the assessment submission window will be set to the pass mark**

- 4.4.1 A minimum mark of 40%, for coursework submitted late (but within the assessment submission window) that is of a pass standard, will be applied to undergraduate coursework, and a minimum mark of 50% to be applied to postgraduate and level 5 of integrated masters.
- 4.4.2 If the academic quality of the work submitted is below the pass mark, no penalty should be applied with the emphasis on supporting these students in any resubmission.

#### **4.6 Departments/Schools should have oversight of student submission patterns**

- 4.6.1 Departments/Schools should maintain records of late submission of coursework in order to identify students who may require pastoral or academic support.
- 4.6.2 Students should be contacted if more than two consecutive submission deadlines are missed, with a view to appropriate support being offered.

**Example**

	<b>Day of submission</b>	<b>Penalties applied</b>
1.	Coursework submitted after the deadline, student has an approved extension and submits within the approved extension period.	No penalty to be applied.
2.	Late submission on the day of the deadline (or approved extended deadline), student has communicated exceptional circumstances and is granted a grace period of up until four hours after the deadline.	No penalty to be applied.
3.	Late submission within one calendar day (less than 24 hours) of the deadline, student has no approved extension.	10 percentage point penalty applied to original mark, unless the penalty reduces the student's mark to below 40% (UG) or 50% (PG), in which case the mark is capped at 40% (UG) and 50% (PG)
4.	Late submission more than one calendar day (more than 24 hours) after the deadline but less than two full calendar days (less than 48 hours) after the deadline has expired, student has no approved extension.	15 percentage point penalty (10 points for first day, 5 points for second day or part day), unless the penalty reduces the student's mark to below 40% (UG) or 50% (PG), in which case the mark is capped at 40% (UG) and 50% (PG).
5.	Late submission more than two full calendar days (longer than 48 hours) after the deadline but less than three calendar days (72 hours), student has no approved extension.	20 percentage point penalty (10 for first day, 5 for second day, 5 for third day or part day), applied to original mark, unless the penalty reduces the student's mark to below 40% (UG) or 50% (PG), in which case the mark is capped at 40% (UG) and 50% (PG)
6.	Late submission more than three full calendar days (longer than 72 hours) after the deadline but less than four full calendar days (less than 96 hours), student has no approved extension.	25 percentage point penalty (10 for first day, 5 for second day, 5 for third day, 5 for fourth day or part day), applied to original mark, unless the penalty reduces the student's mark to below 40% (UG) or 50% (PG), in which case the mark is capped at 40% (UG) and 50% (PG)
7.	Late submission more than four full calendar days (more than 96 hours) after the deadline but less than five full calendar days (less than 120 hours), student has no approved extension.	30 percentage point penalty (10 for first day, 5 for second day, 5 for third day, 5 for fourth day, 5 for fifth day or part day), applied to original mark, unless the penalty reduces the student's mark to below 40% (UG) or 50% (PG), in which case the mark is capped at 40% (UG) and 50% (PG)
8.	Late submission more than five full calendar days (more than 120 hours) after the deadline but less than six full calendar days (less than 144 hours), student has no approved extension.	35 percentage point penalty (10 for first day, 5 for second day, 5 for third day, 5 for fourth day, 5 for fifth day, and 5 for sixth day or part day), applied to original mark, unless the penalty reduces the student's mark to below

9.	Late submission more than six full calendar days (more than 144 hours) after the deadline but less than seven full calendar days (less than 168 hours), student has no approved extension	40% (UG) or 50% (PG), in which case the mark is capped at 40% (UG) and 50% (PG). 40 percentage point penalty (10 for first day, 5 for second day, 5 for third day, 5 for fourth day, 5 for fifth day, 5 for 6th day, and 5 for 7th part day), applied to original mark, unless the penalty reduces the student's mark to below 40% (UG) or 50% (PG), in which case the mark is capped at 40% (UG) and 50% (PG)
10.	Late submission more than seven full calendar days after the deadline. For example, a deadline was set for Midday on a Wednesday and a student submits an assessment after midday the following Wednesday	A mark of zero will be applied to the work.

All certificates that are submitted to Student Business are stored in the student's file. Student Business informs the relevant departments and Board of Examiners of certificates which are relevant to a diet of examinations or the corresponding period of study, including, where appropriate, the relevant details. The University's policy on Mitigating Circumstances that have affected a student's performance in assessments leading to the final mark for a class can be found on the following webpage:

[Personal Circumstances Procedure - University of Strathclyde](#)

## Marking Guidelines

The marking guidelines for postgraduate instructional programmes, for assessing all courseworks and examinations, are included at Appendix C.

## Anonymous Marking

Anonymous marking is employed for all formal written examinations at postgraduate level. Double marking is good practice for assessments which are not marked anonymously.

## Compensation Mechanism and Resit Examinations

### **MSc programme**

To proceed to the MSc project/dissertation in year 3, a candidate will normally have accumulated 120 credits on the taught component of the course at the first attempt. With respect to students who have not passed all their credits at the first attempt the Board of Examiners will apply the Faculty Compensation Scheme, if applicable, as outlined below. If this can be done and the student thereby gains sufficient credits, then the student may proceed to the project.

The Faculty operates a compensation scheme that is designed to assist Boards of Examiners to take decisions about student progress to the MSc project/dissertation. The scheme can be applied only to the student's first attempts and, therefore, is normally used only at the September meetings of the Boards of Examiners.

MSc students in year 2 who have attempted at least 120 credits from the course curriculum and who have a credit-weighted average (CWA) of at least 55% are eligible for compensation. Any combination of classes, up to a maximum of 20 credits, may be compensated or taken as a resit. Under such circumstances, a class may be compensated (no requirement for additional examination) where the class

mark is in the range 40-49%, whilst when a class mark is below 40% the class must be re-examined (resit) at the next possible diet. Typically this will be in the next academic year.

MSc students in year 1 who have attempted at least 60 credits from the course curriculum and have failed one class (20 credits) with a class mark in the range 40-49%, may be permitted to proceed to year 2 under caution. On completion of year 2, if all year 2 classes have been passed, and the student has achieved a credit-weighted average (CWA) of at least 55%, the class failed in year 1 will be eligible for compensation. If the CWA is below 55%, the class must be re-examined (resit) at the next possible diet. Typically this will be in the next academic year.

MSc students who have attempted at least 120 credits from the course curriculum and who have a CWA of less than 55% are not eligible for compensation. In this case MSc students will normally only be allowed to resit a maximum of 20 credits at the next possible diet, provided all other taught classes have been passed at the first attempt, with a minimum mark of 50% in each class, and no compensated passes have been awarded.

MSc students who have a CWA of 55% or more, but have failed 40 or more credits of classes have not fulfilled the requirement of the MSc. Students who have a CWA of less than 55%, and have failed 20 or more credits of classes have also not fulfilled the requirement of the MSc. In either of these two cases course the student will normally be transferred to the PgDip. PgDip students who satisfy the requirements of the MSc may be transferred to the appropriate MSc course and proceed to the project/dissertation.

Students who are allowed to proceed to their MSc project with a resit examination will be warned that they cannot remain on the MSc course unless all outstanding taught classes are passed at the second attempt. Such students are required to sign a form verifying that they understand and accept the conditions required to remain on the MSc course.

### **Resits**

To proceed to the MSc project/dissertation a candidate will normally have accumulated all the credits on the taught component of the course at the first attempt.

With respect to students who have not passed all their credits at the first attempt the Board of Examiners will apply the Faculty PGT Compensation Scheme, if applicable, as outlined in Part B below. If this can be done and the student thereby gains sufficient credits, then the decision will be "Proceed to MSc Project/Dissertation".

Students with a first attempt credit weighted average of 50% or above, can resit, once, any number of credits and remain eligible for the award of MSc.

After any compensated passes have been applied, students carrying more than 20 credits will be required to pass any resits before commencing the project. If the student passes their resits, they will be allowed to commence the project and potentially qualify for MSc.

After any compensated passes have been applied, students carrying 20 credits of resits may "proceed at risk", or they may choose to delay the start of their project until after the resit exams. Students who are allowed to proceed to their project/dissertation, under the terms of either of these situations, must be warned that they cannot remain on the MSc course unless all outstanding taught classes are passed at the second attempt. Such students are required to sign a form verifying that they understand and accept the conditions required to remain on the MSc course.

MSc students who have failed to achieve the required credit weighted average, at first attempt, after compensation, or after passing resits will normally be transferred to the PgDip.

PgDip students who normally have accumulated all the credits on the taught component of the course at the first attempt, or who have not passed all their credits at the first attempt the Board of Examiners but have been eligible for the Faculty PGT Compensation Scheme, or who have a first attempt credit

weighted average of 50% or above, can resit, once, any number of credits may be transferred to the appropriate MSc course and proceed to the project/dissertation.

Any student who has failed to gain a credit weighted average >50% will normally be entitled to one further attempt to obtain enough credits for the award of a PgCert or a PgDip. A student is only entitled to one further attempt at classes for the award of an MSc if at first attempt they have a credit weighted average of 50% or above.

### **MSc, PgDip and PgCert Awards**

Where a candidate has accumulated 120 credits of taught classes from the curriculum, together with 60 credits for the project, they will be awarded an MSc.

The MSc in Biomedical Engineering can be awarded as:

MSc Rehabilitation Studies

MSc Prosthetic and Orthotic Studies

MSc Prosthetic Studies

MSc Orthotic Studies

Please refer to the Course Regulations inserted on pages 9-13 of the handbook for the modules to be studied for each of the sub-specialisations.

Where a candidate has accumulated 120 credits of taught classes from the curriculum, but has not obtained 60 credits for the project/dissertation, he/she will be awarded a PgDip.

Where a candidate has not accumulated 120 credits of taught classes after 2 attempts, he/she may be considered for a PgCert. The PgCert can be awarded if the candidate has accumulated at least 60 credits of taught classes from the curriculum.

A candidate who has accumulated less than 60 credits of taught material after two attempts will be deemed to have failed, and no award will be made.

Awards may be made “with Merit” or “with Distinction” according to the following framework.

<b>Degree Classification</b>	<b>CWA (including project)</b>
Distinction	70% – 100%
Merit	60% - 69%
Award	50% - 59%

MSc students are eligible for an award with merit/distinction only if they pass all classes at the first attempt. A compensated pass is acceptable for Distinction/Merit awards, provided the overall mean score is in the Merit/Distinction category.

## **Application for Exemptions**

**(See also Appendix A, Regulation 19.1.3)**

Students may, on the basis of previous study, apply for exemption from either of the MSc compulsory modules of Research Methodology and Data Analysis. Students **must** be able to submit evidence of qualifications for the consideration of the Department.

Students who wish to apply for an exemption on the basis of previous qualifications should submit details of their relevant qualifications in writing to the Administrative Officer at the time of registration. Applications will be considered by the relevant members of teaching staff and, if appropriate, presented to the Engineering Faculty Board of Studies for ratification. Students will be notified in writing of the outcome of their application.

## Board of Examiners

Following the examinations in August, the Department convenes a meeting of the Board of Examiners to consider the assessment and examination results for the academic year. Only once the results have been ratified by the Board of Examiners and Faculty of Engineering may the results be circulated to students.

**NB.** In reaching the decisions, the Board of Examiners are concerned to take into account any medical or other circumstances which may have adversely affected a student's performance. It is very important that the University is made aware of such circumstances in writing and where relevant with the production of a medical certificate - The University's Mitigating Circumstances Policy states that "Claims must be submitted within five working days of the end of the examination diet affected. Failure to submit mitigating circumstances within five working days will normally render them inadmissible in the event of a subsequent academic appeal." A copy of the full document is available at:

Students should provide information on adverse circumstances to the Administrative Officer.

## Circulation of Marks

Examination and assessment results are available on PEGASUS following the meeting of the Board of Examiners.

An Academic Transcript can be provided by Registry on request, on payment of the appropriate fee.

[Personal Circumstances Procedure - University of Strathclyde](#)

The form which should be used to request a transcript is available online at:

<http://www.strath.ac.uk/transcripts/>

# GENERAL INFORMATION

## Student's Responsibilities

The University Policy and Procedure for Postgraduate Instructional Programmes sets out, at Section 7, the General Responsibilities of the Student:

7.1 The responsibilities of the student are:

- i. to know and observe the Health and Safety Regulations
- ii. to know and observe the University's Equal Opportunities and Racial Equality Policies
- iii. to be in regular attendance in the department or other assigned place of work or study
- iv. to take the initiative in raising any problems or difficulties, whether academic, financial or personal, with the Course Director, or a member of staff teaching on the course, or the student's Counsellor, or through any other of the University's counselling arrangements
- v. to perform satisfactorily and to hand in work on time
- vi. to make themselves familiar with relevant information on regulations, procedures, services and personnel which has been provided by the department and other relevant Academic Services
- vii. to ensure that the University is notified of any absence longer than 7 days by informing the Course Director and providing a medical certificate (where appropriate) to Registry

7.2 Any further requirements are specified in the Course Handbook and/or course literature.

While a number of these do not apply to an open learning format, students' attention is drawn to point (vi) above. Students should ensure that they familiarise themselves with all information provided by the Department.

# REGISTRATION

## Student Experience

All students who are undertaking full or part-time study in the University are required to register at the start of each academic year. Registration combines a number of procedures which it is convenient to ask students to complete at the same time.

- 1 Personal Details are updated. These include addresses and telephone numbers.
- 2 Course and year of study will be confirmed for the new session.
- 3 The Finance Office will need to know how tuition fees will be paid.
- 4 Issue of Student Identity Card.

### ***Postal Registration: Part-time and open-distance learning only***

Students should return the Registration form, corrected as necessary, to the Engineering section of Registry - **this is an important document which must be signed and returned to Registry**. In signing this, students are agreeing to be bound by the terms listed thereon. The forms and more information on the services offered by Student Experience can be found at:

<http://www.strath.ac.uk/registration/>

## Student Identity Card

Student ID Cards will be issued at Registration of year 1. New Students must enclose two recent colour photographs, one of which will be kept by Registry. This will be scanned onto the student record for production of their student identity card, which will be sent to them. The image, together with personal and course data, will be printed onto the card. The Student Identity Card allows access to the University Library (using the printed barcode) and the Sports Centre. The ID card should be kept safely as it may be necessary to produce it at any time as proof of status.

This is an important part of the registration process. A Student Identity Card cannot be issued without photographs being obtained.

## Change of Address

Students are required by Regulation 6.4.9 to keep Registry informed of their current addresses, both permanent and term-time. Students should also notify the Department as soon as possible that a change has been made.

## Finance Office

The payment of tuition fees is an essential part of the process, and registration is not complete until tuition fees are paid.

### **Online Payment of Tuition Fees,**

The University has developed a facility to allow students to pay amounts due by credit/debit card quickly and efficiently. More information on this facility is available from the Finance Office website at:

[Finance – Here to Help You | University of Strathclyde](#)



## Format for Communication

The majority of communication from the National Centre will be through the university e-mail address which each student is given.

Students **MUST** access this on a regular basis so that all communications are received and responded to in a timely fashion.

The Department of Biomedical Engineering and the University will predominantly communicate with students using their Strathclyde email account, i.e. name@strath.ac.uk. It is students' responsibility to check this email account daily for new Departmental and University messages

Class lecturers and tutors will use the University's virtual learning environment (MyPlace) to communicate all course materials and class matters to students (<http://classes.myplace.strath.ac.uk/>). Students are, therefore, expected to purchase or have access to a suitable computer (with internet access). It is the students' responsibility to ensure that they are able to engage with this environment as expected by individual tutors. Online training packages are available.

Students are required to upload courseworks uploaded to MyPlace for assessment purposes. These courseworks will typically be upload to MyPlace through Turnitin, which is an electronic plagiarism detection software. You should ensure you have read the university policy on plagiarism and collusion.

## Computer Software

Students are able to download software free from the University website. For example, students are required to download a copy of the Minitab software for use in the Data Analysis module.

**This facility will only be available once students have completed the registration process and have a ds log in provided by Registry (i.e. returned their registration form and paid their tuition fees).**

## THE AWARDS: AN OVERVIEW

### Postgraduate Certificate in Rehabilitation Studies

Candidates who obtain a minimum of 60 Strathclyde Master Credits from a selection of the Optional and Restricted instructional modules approved by the Course Co-ordinating Committee at a standard of 50% or above may be awarded a Postgraduate Certificate.

In this case candidates will normally be required to complete the course within a minimum of 12 months and where there are mitigating circumstances up to a maximum of 24 months from the date of first registration.

### Postgraduate Diploma in Rehabilitation Studies

Candidates who obtain a minimum of 120 Strathclyde Master Credits from a selection of the Optional and Restricted instructional modules at a standard of 50% or above may be awarded a Postgraduate Diploma in Rehabilitation Studies.

In this case candidates will normally be required to complete the course within a minimum of 24 months and where there are mitigating circumstances up to a maximum of 48 months from the date of first registration.

### Master of Science in Rehabilitation Studies

Students studying for the MSc in Rehabilitation Studies will undertake a research project and submit a written dissertation. The Project may be carried out at the candidate's place of employment, in which case it may be useful to identify a Local Mentor from the candidate's place of employment in addition to a Departmental Supervisor.

A minimum of 180 Strathclyde Master Credits must be obtained for the award of the Master's degree of which at least 120 credits will be obtained from taught modules and 60 credits from the Project.

Candidates will be required to pass each taught module which they undertake **at a standard of 50% or above. Students must take note of the assessment requirements for each of the modules that they have selected.**

A student who does not show satisfactory progress may, on the advice of either the Course Co-ordinating Committee or the Board of Examiners, be permitted to transfer their registration to the Postgraduate Diploma or the Postgraduate Certificate course.

Candidates will normally be required to complete the course, including submission of the dissertation, within a minimum of 36 months and where there are mitigating circumstances up to a maximum of 60 months from the date of first registration.

An oral examination may be required.

A candidate who attains a high level of overall performance within the minimum three years of study and who achieves a standard of 70% and above, for both the instructional modules and the project, will be awarded the Master's Degree with Distinction.

A candidate who attains a level of overall performance within the minimum three years of study and who achieves a standard of between 60% and 69%, for both the instructional modules and the project, will be awarded the Master's Degree with Merit. See regulation 19.1.38

Students should be aware that **10 hours** of student study-centred activity is expected for each Strathclyde Masters Credit.

■  
To take LL Prosthetic Biomechanics, LL Orthotic Biomechanics or Clinical Gait Analysis students **must first** have successfully completed Introductory Biomechanics, unless agreed otherwise with the Administrative Officer.

■  
Students who wish to apply for an exemption in any subject on the basis of previous qualifications should submit details of their relevant qualifications in writing to the Administrative Officer. Applications will be considered by the relevant members of teaching staff and, if appropriate,

CLASS CODE	MODULE TITLE	CREDIT VALUE
<b>OPTIONAL</b>		
94 927	Clinical Governance	20
94 928	Introductory Biomechanics	20
94 929	LL Prosthetic Biomechanics	20
94 930	LL Orthotic Biomechanics	20
94 936	Clinical Gait Analysis	20
<b>RESTRICTED TO PROFESSIONAL P/Os ONLY</b>		
94 937	Advanced Prosthetic Science	20
94 935	Advanced Orthotic Science	20
BE942	The Holistic Management of Foot and Ankle Musculoskeletal Conditions	20
<b>RESTRICTED TO PHYSICIANS, SURGEONS AND THERAPISTS</b>		
94 904	Orthotic Studies	20
94 905	Prosthetic Studies	20
<b>COMPULSORY FOR All MSc</b>		
94 938	Research Methodology	20
94 939	Data Analysis	20
94 900	Project	60

# YOUR PERSONAL PROGRESS PLAN

Whatever their type of registration, students need to let us know on which of the modular courses they wish to enrol.

As soon as registration is complete, students should give consideration to their progress plan, and the modules they wish to undertake to obtain the requisite credits for their level of registration. This plan should identify key milestones and dates and should be used to monitor individual performance during the period of registration.

## Modular Choice Form

The titles of each module and subsequent module descriptors are included at Appendix C, and provide the necessary information for students to plan their course of study.

### Your Departmental Supervisor

Each MSc student will be assigned a Departmental Supervisor who will ensure that students are setting and meeting agreed deadlines and that project work is of an acceptable standard.

The Supervisor will be expected to provide a timely and efficient response to any enquiries which students make.

1 <sup>st</sup> Year	
Module Title	Credit Value
2 <sup>nd</sup> Year	
Module Title	Credit Value
3 <sup>rd</sup> Year	
Module Title	Credit Value
<i>Project</i>	60
<b>TOTAL CREDITS</b>	

## OUTLINE OF THE MODULES

An outline of the modules offered is included below. More detailed Module Descriptors for each of these modules is included at Appendix B.

### 94 927 Clinical Governance

Evidence-based practice in the field of rehabilitation has begun. This module is intended to inform participants about the ideas and principles behind the practice. It will focus on practical and clinically relevant lessons on improving healthcare services from current national and international work. The implementation of clinical governance will be considered. Participants will review the economic impact of implementation and be directed towards relevant references on research. The course will demonstrate how the results of such research have been put into practice.

### 94904 Orthotic Studies

*Restricted to physicians, surgeons and therapists (NOT professional prosthetist/orthotists)*

Overview of the current practice of orthosis provision in terms of orthosis prescription, manufacture, fitting and appropriate biomechanical and therapy theory.

### 94905 Prosthetic Studies

*Restricted to physicians, surgeons and therapists (NOT professional prosthetist/orthotists)*

Overview of the current practice of prosthesis provision in terms of prescription manufacture, fitting and appropriate biomechanical and therapy theory.

### 94 928 Introductory Biomechanics

During walking the forces generated at the ground are transferred to the skeletal system via the soft tissue interface within the prosthesis or orthosis. The patient will only wear a device if it is comfortable and the magnitudes of the forces are within tolerable levels during use. This module will teach/revise those basic mechanical subjects with which the candidates will be required to be familiar, force, moments, static equilibrium, etc. The forces and moments about the joints of the leg generated during walking and the ways in which the stump-device interface forces generated during walking with prostheses or orthoses are accommodated during manufacture of the device will be covered. The effect of the stump-device interface forces on the materials used to make prostheses and orthoses will be examined.

### 94 929 Lower Limb Prosthetic Biomechanics

*The Introductory Biomechanics module is a pre-requisite for this module unless prior learning is demonstrated and accepted*

This module provides an understanding of the forces generated during walking with a lower limb prosthesis. The effects of these forces on the patient and the prosthesis will be examined. The influence on these forces of mal-alignment and the subsequent effect on the gait pattern of the patient will be explored. Reasons for gait deviations, other than those of poor socket rectification and alignment will be discussed. The effect on the stump/socket interface forces of different socket types will be examined. The requirements of prosthetic feet and knee mechanisms and prescription criteria based on mechanical characteristics will be covered.

### 94 930 Lower Limb Orthotic Biomechanics

*The Introductory Biomechanics module is a pre-requisite for this module unless prior learning is demonstrated and accepted*

An orthosis should exert, as closely as possible, the correct magnitude of force in the best pattern just to overcome the patients' problem, and no more. Over-bracing can create unnecessary difficulties for the patient and should be avoided by accurate prescription. Superimposed on such prescribed forces are those which are generated when a patient walks. This module gives students an understanding of the force systems required to meet the different prescription aims of orthotic fitting. The magnitude of the

forces generated during walking with lower limb orthoses, the effects of these forces on the patient and the orthoses and how mal-alignment and poor fit influence such forces will be considered. The forces generated in the joints of the normal and pathological foot and the effect of footwear on such forces will be examined. The biomechanics of other prescribed devices, e.g. standing frames, swivel walkers, etc, will be examined.

### 94 936 Clinical Gait Analysis

*The Introductory Biomechanics module is a pre-requisite for this module unless prior learning is demonstrated and accepted*

Human gait has been a subject of interest and study for a considerable period. It is only relatively recently that instrumented gait analysis has been sufficiently refined to be of clinical use. Human gait, whether in health or disease, is a complex activity and remains a difficult area to tackle. To make an impact in the clinic it is necessary to have a systematic approach to defining the problem of interest, establishing the means and methods of assessment and interpreting the findings. The clinical acceptability of any data depends very much on the ease of obtaining the results and on their presentation. Given that the information may be obtained conveniently and quickly, it must then be presented in a palatable form. Without a careful plan of action and without clear knowledge about what can and cannot be achieved, the likely outcome will be disappointment. This module is intended to give the student an appreciation of the methods and levels of accuracy of those gait assessment techniques that are currently available. They range from the simple to the sophisticated, (or the inexpensive to the costly), and the advantages and limitations of each will be explored. The interpretation of the data and its relevance to clinically observed conditions will be discussed.

### 94 937 Advanced Prosthetic Science

*Restricted to professional Prosthetists and Orthotists*

To increase awareness of the state of the art in prosthetic design and implementation, as well as practical awareness of the limitations and gaps in knowledge. Good working knowledge of the likely impact of technological trends will be achieved.

### 94 935 Advanced Orthotic Science

*Restricted to professional Prosthetists and Orthotists*

To review the theoretical and practical basis of orthosis provision in terms of prescription, manufacture, fitting and appropriate biomechanical and therapy theory. To consider the major barriers to progress and the likely impact of technology on the field.

### BE942 The Holistic Management of Foot and Ankle Musculoskeletal (MSK) Conditions

*Restricted to professional Prosthetists and Orthotists*

To gain a more in-depth understanding of how the foot and ankle structures interact with each other when loaded during walking or running activities. This class will explore the interaction between abnormal foot and ankle biomechanics and foot and ankle pathology.

This class will build on the student's existing clinical knowledge of foot and ankle biomechanics and understanding of pathologies. It will achieve this through an enhanced focus on key pathologies and appropriate treatment plans.

This module will focus on the assessment, diagnosis and treatment of foot and ankle pathologies and evaluate key foot orthotic design features that can be used to treat these conditions. It will also develop a deeper understanding of the roles of other interventions that are used in combination with orthotic intervention in the management of musculoskeletal foot and ankle conditions in line with the current evidence base.

## 94 938 Research Methodology

*Compulsory for the award of Master of Science*

To provide students with the philosophical, ethical and methodological background to personal research. To develop basic skills in 'internal' and external project management. Internal skills include and ability to generate creative ideas and intuitive insights, generate and sustain a personal objective and then manage personal motivation and stress. External issues include project planning and management skills, identification of sources of project risk, team working, marshalling of resources and writing skills.

## 94 939 Data Analysis

*Compulsory for the award of Master of Science*

To understand the theoretical and practical issues involved in data collection and analysis through practical case study and through work focused on a personal research project.

**The Research Methodology and Data Analysis modules are compulsory for the MSc, and it is expected that these modules will, wherever possible, be taken in the first year of registration.**

## THE PROJECT

As part of the Masters registration, students are required to undertake a research project, which constitutes 60 credits towards the degree of Master of Science in Rehabilitation Studies.

### Departmental Supervisor

Each student will be assigned a Departmental Supervisor who will be responsible for the academic direction of the student.

The Supervisor will ensure that students are setting and meeting agreed deadlines and that project work is of an acceptable standard.

The Supervisor will be expected to provide a timely and efficient response to any enquiries which students make and this will be audited by the Department.

### Code of Practice on Investigations on Human Beings

The Code of Practice on Investigations on Human Beings has been developed and updated by the University Ethics Committee and Research and Consultancy Services to assist investigators.

The Code covers all investigations conducted by University staff and students on human beings, whether for research, teaching, student projects, or other educational purposes, and whether in the form of experiments, demonstrations, interviews or questionnaires. This Code also covers all investigations conducted on University property, or under the auspices of the University, that involve human beings as participants.

Students should ensure that all work undertaken as part of their Project conforms to the requirements of the Code and must ensure that ethical approval is obtained where appropriate.

Essential information regarding ethics applications can be obtained at:

<http://www.strath.ac.uk/ethics/>

### Format and Submission of Thesis

These regulations are to be found in the University Calendar under Regulation 20.4.

[Downloads for Students The University of Strathclyde - University of the Year 2012/13 - Times Higher Education Awards](#)

### Final Project Submission Policy

Students are normally required to submit the thesis by the published submission date. If a student misses the deadline they will forfeit all the marks associated with the final element of the project. A viva will also be arranged and is assessed as part of the class.



# GRADUATION

## Enrolment

If students have enrolled to graduate in June/July but do not qualify for the award in time, Registry will assume that they will graduate at the October/November ceremony; similarly if students register for October/November but do not qualify, registration will be deferred until the June/July ceremony.

Registry will assume that students will graduate 'in person' – you must advise if you wish to graduate 'in absentia'

Students will not be permitted to graduate until any debts are cleared.

Postgraduate Diploma students may, if they wish, be "presented" at a November ceremony only. To do so, they should complete a Graduation Enrolment form and pay

Awards Ceremonies are held in June/July November each year, All students hoping to be presented MUST by completing a form appropriate fee. ceremonies and are available from:



(or Congregations) and October/ in the Barony Hall. graduate or be enrol to graduate and paying the Details of the enrolment forms

[Graduation | University of Strathclyde](#)

## Deadlines

Students who wish to graduate in July must register by the last Friday in April - they cannot wait until their results or their award has been confirmed. Similarly, the closing date to register for graduation in November is the first Friday in September. Students should consult the University website in March to ascertain the precise dates of the registration deadlines and Graduation Ceremonies for the Engineering Faculty.

It is **YOUR RESPONSIBILITY** to ensure that you enrol in time, as information is **not** sent out to students.

**If students wish to graduate this year they MUST enrol to graduate by the published deadlines. They must not wait until they have received their examination results or had their award approved.**

# ACADEMIC INTEGRITY

The University regards plagiarism and collusion as extremely serious offences and instances may be referred to the Senate Discipline Committee. Penalties for such offences may range from discounting marks for the particular assignment/ examination or for the whole diet of examinations to requiring that the student withdraw from the course in cases of deliberate, premeditated or repeated cheating.

## Definitions

### Plagiarism and Collusion

**Plagiarism** is taking the work of others and presenting it as your own.

**Collusion** is using the work of a fellow student, with his or her knowledge, and presenting it as your own.

You could be accused of plagiarism if you:

- hand in (as your own) work that was written by someone else
- copy out someone else's work and hand it in
- copy out sections of someone else's work and include it in your own submitted work without acknowledging it
- use someone else's work in any of the above ways with a few words changed

That "someone else" might be the writer of a journal article, a textbook or an internet site. It could be a fellow student, though you might then be accused of collusion. The "work" could be a whole essay, paragraph or even sentence; i.e. copying (or altering in a minor way) a complete paragraph or sentence constitutes plagiarism.

You could be accused of collusion if:

- you and another student submit identical or almost identical work

Any work submitted for assessment, e.g. essays, laboratory reports, homework and tutorial assignments, must be solely the work of the individual student or group (if a group assignment is set).

If there is evidence of plagiarism or collusion, penalties may be imposed ranging from a reduction in marks, to resubmission of work or, if particularly severe, to disciplinary action. Each case of plagiarism/collusion will be discussed by an adjudication panel who will recommend an appropriate course of action. The University's guidance on plagiarism can be found using the url below. If you are in any doubt as to what constitutes plagiarism, please read this document.

The University has a formal policy for dealing with possible instances of academic dishonesty. A copy of the full document, **University Procedures and Guidelines for Dealing with Instances of Possible Academic Dishonesty by Students**, is available from the University website at:

[Policies Index The University of Strathclyde - University of the Year 2012/13 - Times Higher Education Awards](#)

This is also dealt with under points 3.16 and 9.7 of the University Policy and Procedure for Postgraduate Instructional Programmes.

## LEARNING RESOURCES

### MyPlace

The University's virtual learning environment (VLE) is called MyPlace. It is accessed using your DS credentials via the Strathclyde homepage, or directly from: [myplace.strath.ac.uk](http://myplace.strath.ac.uk)

All class resources will be available from MyPlace, however individual class tutors will inform you regarding the level of class engagement with the VLE.

### Student Self-Development

The University provides a range of handouts that guide you through some common tasks at university. For example, reading and writing tips, grammar and language help, time management, avoiding plagiarism, making presentations and critical thinking.

These can be accessed here: [Supporting Online Learning | University of Strathclyde](#)

The University also provides online IT training for common software packages including Microsoft Office (Word, Excel, Powerpoint) and for University systems (Pegasus, Nemo, webdrives, MyPlace etc). The online tutorials can be accessed, using your DS username and password here:

[The Development and Training Resource Centre \(sharepoint.com\)](#)

Staff will assume that all students are familiar with Microsoft Office to a basic level, and can engage with all University systems.

### Library

We expect students to use the library independently as part of their daily study routine. Independent study using books and journal articles will augment class notes and facilitate a deeper understanding.

A guide on how to use the library is here:

[Library and IT help | University of Strathclyde](#)

## IT SERVICES

All registered students in the University will be issued with a user ID and password, which allows access to the computing facilities in the Andersonian Library. Students are also issued with University e-mail addresses for the duration of their registration.



Students will also require to use their user ID and password to access Moodle, the University's PEGASUS system (Portal Engine Giving Access to Strathclyde University Systems), many of the electronic Library resources and to remotely access University e-mail addresses.

More information on IT Services is available at:

[IT | University of Strathclyde](#)

MAC users: Students should contact the IT Helpdesk as soon as possible following registration to ensure that they have access to all the necessary IT facilities for the course.

## Software

Students registered with the University may download software from the University Website.

## TECHNIQUES OF STUDY

The following notes were prepared by Professor J D Nisbet, Professor of Education at the University of Aberdeen, and he has kindly made them available. Although written specifically for new students, the advice given is relevant throughout a student's course.

When embarking upon a University course, you take responsibility for organising your own studying.

There is much to be done in a short time, so any inefficiency in your techniques of studying will soon begin to tell. It is not enough just to put in regular hours of study: you must make sure that you do not waste these hours, and that you use your time to the best advantage.

### Organising your study

1. Do you start promptly? Avoid the trap of wasting time at the start by doing trivial jobs. Examine sceptically any 'reason' you invent for postponing the difficult part of an evening's work.
2. How much of your study time is genuinely productive? Ask yourself whether you are really learning or thinking – or are you merely frittering away your time? You waste time if you merely write out lists to be learned on some later occasion, or if you copy out notes (or, worse, type them) without thinking about what you write. Beware of satisfying your conscience by doing undemanding tasks which save you the effort of thinking.
3. Do you review your work for the evening (and also for the week and for the term) in order to make sure that you allot an appropriate amount of time to each of your subjects and to each part of each subject? Give the important or difficult tasks priority. Tackle them first, or at least arrange your study so that the work which needs careful thought or special attention is done whilst you are still fresh.
4. Can you recognise the appropriate time to stop for a break? Studying when you are tired may be uneconomical: five minutes' rest may get you through the next hour's work in three-quarters of the time. Or is your weakness the opposite – you stop too readily? Rests relieve fatigue, not boredom. A tedious task may be even more tedious after a break.

### Learning and Remembering

5. Understanding is the key to learning and remembering. If you understand a principle, it is easy to remember it. Trying to learn details which you do not fully understand is a hopeless task. If you do not understand a topic, look it up in a textbook (use the index). Or discuss it with another member of the class. Or ask your tutor or lecturer to help you.
6. In memorising details, do you put the book aside from time to time to test yourself? This helps you to identify the points which are hardest to recall. Give these points special attention: mnemonics may help you. Just reading the details over and over again is wasteful of time and effort.
7. Learn principles by thinking out examples. Learn details by fitting them into some principle or logical system.

## **Taking Notes**

8. Leave plenty of space when you take notes, so that afterwards you can add your own annotations and summaries. Use space intelligently. Notes should not be set out like paragraphs in a book. Use underlining and capitals (especially for names). Use indenting (varying the width of the space in from the margin) so as to bring out the relative importance of the various items and their logical structure. Write lists vertically, not horizontally along the line.
9. Do not try to write down everything that is said in a lecture. Distinguish key points from detail. Some of the detail may be readily available in a test-book, and some detail may be quoted only for illustration. Apply your intelligence to the selection of points to note. Taking notes involves following the lecturer's thought and argument, and summarising points so that you can recall and revise the material. Note-taking is not a substitute for thinking.
10. In taking lecture notes on complex aspects of a subject, do you find that you are missing important points while you are busy writing down unimportant details? If so, you are probably trying to write too much. Concentrate on the main points, summarising them as briefly as possible. Leave large spaces. Then go over the notes as soon as possible afterwards, and fill in the details or examples to amplify the general points.
11. Do you read over your lecture notes fairly soon after each lecture, marking important points and making summaries? This is a good way to get started promptly in an evening's work. "Writing up your notes" means working over them in this way, thinking about them checking points, annotating and tidying them – not just copying them out neatly.

## **Reading**

12. Before starting to read a book or a chapter, do you glance quickly through it? This gives you a general idea of what the book or chapter deals with.
13. In reading, stop periodically and review in your mind the main points of what you have read so far. At the end of the book, look back over the text for a quick revision.
14. Can you adjust your speed of reading to suit the level of difficulty? You should be able to read rapidly, but you should also recognise the rough, uphill, twisting section when you must change into low gear.
15. When you come to a difficult or important part in a book, tackle it systematically, noting the theme of each paragraph, picking out key phrases or key sentences, and asking yourself questions as you read. Do not just read it over several times in the hope that somehow it will become clear.
16. Do you make your own notes and summaries as you read? Read with a pencil in your hand, if you want to remember what you read.

Not all these suggestions are necessarily right for you. Each person must develop the techniques of study which suit them best. But it is important that you should consider from time to time whether your study methods are the most efficient. Read one of the books on this subject. Developing an efficient technique of work and study will be valuable throughout your professional life.

# ESSAY WRITING TECHNIQUES

The assessment of all of the modules is by a combination of coursework and examination, and will require students to make use of their essay writing techniques. Most of the coursework exercises will test your skills of appraisal of the manuals and published literature and expect you to provide a well written evidence based discussion in essay type format. In addition, many of the examination questions will require essay type answers.

## General Advice on Essay Writing

The following notes have kindly been made available by the Department of English Studies, University of Strathclyde.

### **An essay needs a structure**

The particular topic, the text being discussed, and your own interests will, to some extent, determine the approach and structure you use in each essay. Nevertheless, an argument that is all over the place or a discussion which keeps jumping from one idea to another without clear direction is very confusing for your reader. It should not be a mere line-by-line commentary on a poem, or a chapter-by-chapter paraphrase of a novel - you do not need to summarise the plot; assume that your reader already knows the story. Fabb and Durant (1993, ch.3) have an account of different 'Essay Types' and of how to write a typical essay (1993, ch.5); see also Peck and Coyle (1999, ch.7).

### **The essay should be relevant to the question**

In planning your essay ask yourself what the central issues and problems raised by the question are, and address yourself to these. This is one of the functions of an introduction to your essay: it may be useful to discuss the implications of the question to begin with and explain how you are going to construct an argument in response to it. In doing this you are, in effect, turning a question into a topic which you have yourself to some extent defined. (See Fabb and Durant 1993, pp.92-94, 'The First Paragraph')

### **Work out a plan for your essay before writing it**

A plan will help you to structure your argument and to maintain a proper relationship between the overall structure and the details (examples, evidence, quotations, etc.) at any given point. Using a plan will also help you to keep revising and improving the essay without losing its overall coherence. (See Fabb and Durant 1993, pp.22-25)

### **Present a coherent position, even though you may not reach a simple conclusion**

The complexity of literary works is such that there is often much to be said on both sides of an argument. A good essay reflects that complexity - so do not feel you must arrive at a simple conclusion in response to the question.

### **Well-formed paragraphs are the sign of a well-developed argument**

A paragraph develops a single point, with examples, evidence, and relevant comment. If you have drawn up an essay plan then you will have at least some idea of what your main points are going to be, of what goes with what, and what follows on from what in your argument. This will help you to write separate, consistent paragraphs, developing one point at a time. Don't write off the top of your head, and do get into the habit of pausing before you start a new paragraph ('Why am I starting a new paragraph here?' - if you don't know the answer to that question, don't hit the key.) One-sentence paragraphs, or illogical and arbitrary paragraph breaks, are the sign of a scrappy, unstructured and unfocused argument. Under our grade criteria that means they are unlikely to earn more than 50%. (See Fabb and Durant 1993, pp.98-100; Peck and Coyle 1993, pp.105-7)

### **The art of writing is largely the art of rewriting**

Do get into the habit of re-reading what you have written, correcting, improving and proof-reading your essay before you submit it. Admittedly, this means developing realistic work schedules and efficient time management, but that is one of the important transferable skills that you gain from an academic degree. Learning how what you have said strikes another reader can often be very revealing, and it could be extremely useful to get someone - a friend, say - to read over your first draft to see whether what you have written makes sense. Knowing how other readers understand what you have written will help you yourself to become the 'reader over your shoulder' who habitually corrects and improves your expression even as you are writing.

### **Indebtedness to the work of others must be acknowledged**

If you adopt the ideas of another writer, you should indicate clearly whose work you are using, where you begin to do so, and where you resume your own argument. There is no reason to avoid citing a source since you will be given credit for having found it and used it relevantly. Plagiarism (i.e. unacknowledged quotations from, or paraphrases of, other people's work) will be heavily penalised. **As far as possible, use your own examples when you cite evidence, and not ones already discussed in lectures or seminars.**

Further reading:

Fabb, N. and Durant, A (2005) *How to write essays, coursework projects and dissertations in literary studies* 2nd edn London: Longman

Peck, J and Coyle, M. (1999) *The students guide to writing: grammar, punctuation and spelling*. Basingstoke: Palgrave.

## REFERENCING

Students should ensure that all work submitted to the Department, including coursework undertaken as part of the instructional modules, is correctly referenced in accordance with recognised academic conventions.

### Reference Styles

Citations in the *text* should follow the author-date (Harvard) system e.g. Paul (1988) or the numbered (Vancouver) system e.g. Paul <sup>(1)</sup>. If there is more than one author, the reference in the text should read e.g. Klassen et al. (1974).

Citations in the text should be listed as a Reference List at the end of the document (before any Appendices). The Reference List should be arranged alphabetically by the first author for the Harvard system or numerically, in the order cited, for the Vancouver system.

### Guides to Referencing

More detail on the Harvard and Vancouver systems is available from these websites:

NCPO (2010) *NCPO Information Development: MSc: Research Methods*. Available at: <http://www.strath.ac.uk/prosthetics/informationdevelopment/researchmethods-mscrehabilitationstudies> (Accessed: 5 August 2010)

British Medical Association (2006) *Reference styles : Harvard and Vancouver*. Available at: [http://www.bma.org.uk/library\\_medline/electronic\\_resources/factsheets/LIBReferenceStyles.jsp#Harvard](http://www.bma.org.uk/library_medline/electronic_resources/factsheets/LIBReferenceStyles.jsp#Harvard) (Accessed:5 August 2010).

Strathclyde University Library (2009) *Bibliographic Referencing*. Available at: <http://www.lib.strath.ac.uk/bibref.htm> (Accessed: 5 August 2010)

Further reading:

Pears, R. and Shields, G. (2008) *Cite them right: the essential referencing guide*. 3rd edn. Newcastle upon Tyne: Pear Tree Books.

### Citation Software

Students are encouraged to use citation software to manage reference lists. EndNote Web is freely available to Strathclyde University students though Pegasus (available licensed software).

[Endnote Web - Windows | University of Strathclyde](#)



## Referencing Examples

### **Harvard system: Book**

Thomas, J.R., Nelson, J.K., and Silverman, S.J. (2005) Research methods in physical activity. 5th edn. Champaign: Human Kinetics.

### **Harvard system: Journal article**

Ramstrand, N. and Brodtkorb, T.H., (2008) Considerations for developing an evidence-based practice in orthotics and prosthetics. *Prosthetics and Orthotics International*. 32 (1) pp.93-102.

### **Vancouver system: Book**

(1) Thomas, JR, Nelson, JK, Silverman, SJ. Research methods in physical activity. 5th ed. Champaign, IL: Human Kinetics; 2005.

### **Vancouver system: Journal article**

(2) Ramstrand, N. Brodtkorb, T-H. Considerations for developing an evidence-based practice in orthotics and prosthetics. *Prosthet Orthot Int*. 2008; 32: 93-102.

## APPENDICES

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# APPENDIX A

## Module Choice Form

<b>Student Name:</b>	
<b>E-mail:</b>	

Please copy and paste the '√' below and enter it into the **Module Choice** Column

√
---

Type of Registration (please tick)

**Certificate**

**Diploma**

**MSc**

**Please note that:**  
 Each module will be completed within a single academic year. When indicating your choice of modules, please tick each module only in the year in which you want to take it

*The Data Analysis and Research Methodology modules are compulsory for the MSc and should ideally be undertaken in the 1<sup>st</sup> year of registration*

Students on the MSc are normally expected to undertake the instructional modules within the first 2 years of registration

*To take LL Prosthetic Biomechanics or LL Orthotic Biomechanics you must first have completed Introductory Biomechanics unless agreed with the academic adviser*

94 904 Orthotic Studies and 94905 Prosthetic Studies **cannot** be selected by qualified prosthetists/orthotists

94 935 Advanced Orthotic Science and 94 937 Advanced Prosthetic Science **can only** be selected by qualified prosthetists/orthotists

10 hours of student study-centred activity is expected for each Strathclyde Masters Credit

Dates	Class Code	Module Title	Credit Value	Tick Module Choice
<b>Session 2016/2017</b>				
	94 927	Clinical Governance	20	
	94 904	Orthotic Studies	20	
	94 905	Prosthetic Studies	20	
	94 935	Advanced Orthotic Science	20	
	94 937	Advanced Prosthetic Science	20	
	94 939	Data Analysis	20	
	94 938	Research Methodology	20	
	94 928	Introductory Biomechanics	20	
	94 929	LL Prosthetic Biomechanics	20	
	94 930	LL Orthotic Biomechanics		
	94 936	Clinical Gait Analysis	20	
	BE942	The Holistic Management of Foot and Ankle Musculoskeletal Conditions	20	
<b>MSc Students Only</b>				
	94 900	Project	60	
<b>Total Credits</b>				

# APPENDIX B

## Module Descriptors

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94 929 Lower Limb Prosthetic Biomechanics	53-54
94 930 Lower Limb Orthotic Biomechanics	55-56
94 936 Clinical Gait Analysis	57-58
94 937 Advanced Prosthetic Science	59-60
94 935 Advanced Orthotic Science	610-62
94 938 Research Methodology	63-65
94 939 Data Analysis	66-67
BE942 The Holistic Management of Foot and Ankle Musculoskeletal Conditions	68-70
94 900 Research Project	71-73

## MODULE DESCRIPTION FORM

### 94 927 Clinical Governance

<b>Module Registrar:</b> Laura Murray			<b>Taught to (Course):</b> MSc Prosthetics/Orthotics Rehabilitation Studies			
<b>Other Lecturers Involved:</b> None			<b>Credit Weighting:</b> 20		<b>Semester:</b> 1 and 2	
<b>Assumed Prerequisites:</b> None			<b>Optional Class</b>		<b>Academic Level:</b> 5	
<b>Module Format and Delivery (hours):</b>						
<b>Lecture</b>	<b>Tutorial</b>	<b>Laboratory</b>	<b>Project</b>	<b>Assignments</b>	<b>Private Study</b>	<b>Total</b>
				50	150	200
<b>Educational Aims</b>						
<p>This module aims to explain the concept of clinical governance and to encourage participants to apply the concepts of clinical governance to their own practice and local clinical situation. It will provide students with the opportunity to reflect upon the best available evidence and subsequently design a clinical audit for a topic pertinent to their local situation. Students will then be supported in running the clinical audit if appropriate permissions are in place. Alternatively, they will construct a local clinical guideline on a similar topic in the form of a poster presentation.</p>						
<b>Learning Outcomes</b>						
<p>On completion of the module the student is expected to be able to:</p> <p>LO1 understand the principles of clinical governance</p> <p>LO2 be able to design an effective clinical audit and be equipped to complete this</p> <p>LO3 be able to review evidence and clinical papers to create an appropriate clinical guideline</p> <p>LO4 consider the ways in which evidence-based practice can be supported and promoted to enhance patient care in the rehabilitation setting.</p>						
<b>Syllabus</b>						
<p>The module will teach the following:          This is an online module comprising online content including discursive text, video presentations, quizzes and links to the evidence based in the field. Students will engage in forum discussion and reflect upon published literature and how it applied to evidence based clinical practice. Content will include extensive examples and case studies about the governance and management of clinical services relating to prosthetics and orthotics clinical practice as well as to other areas of healthcare.</p>						
<b>Assessment of Learning Outcomes</b>						
<b>Criteria</b>						
<p>For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:</p> <p>LO1 understand the principles of clinical governance</p> <p>C1 understand the history and emergence of clinical governance as government policy</p> <p>C2 learn lessons from clinical services that went wrong and led to inquiry</p> <p>C3 consider how evidence is incorporated into clinical practice for effective and efficient health service provision</p> <p>LO2 be able to design an effective clinical audit and be equipped to complete this</p> <p>C1 draw upon examples of clinical audit</p> <p>C2 collate a specific evidence base</p> <p>C3 plan all elements of clinical audit</p> <p>LO3 be able to review evidence and clinical papers to create an appropriate clinical guideline</p> <p>C1 draw upon examples of clinical guidelines</p> <p>C2 understand the methodology of clinical guideline construction</p> <p>C3 draft a clinical guideline and make it reader friendly</p> <p>LO4 consider the ways in which evidence based practice can be supported and promoted to enhance patient care in the rehabilitation setting</p> <p>C1 draw upon examples of evidence based practice that have demonstrated improvements for patients</p> <p>C2 determine governance arrangements for access to information services</p> <p>C3 consider clear and effective ways of imparting research evidence to clinicians</p>						
<p>The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.</p>						

## 12 Principles of Assessment and Feedback

Please state briefly how these are incorporated in this module.

The clinical governance module expects students to adopt their own topics for each assessment as students are strongly encouraged to apply the principles of clinical governance to their own practice. The assessments for the module help the students to concentrate on each aspect of clinical governance and to reflect upon the subject and discuss it with their peers in their own work environment.

Students have ample opportunity during the module to link in with their tutor and develop their ideas through open dialogue. These distance learning students are supported to enable them to have the confidence to implement the principles of clinical governance in their locale to augment existing quality improvement plans.

Feedback that is specific to the students own topic helps to embed the learning done.

### Student Feedback:

*Feedback is provided electronically within three weeks of the submission date of each coursework.*

### Assessment Method(s) Including Percentage Breakdown and Duration of Exams

Examination			Coursework		Project	
Number	Duration	Weighting	Number	Weighting	Number	Weighting
-	-	-	2	CW1: 50% CW2: 50%	-	-

**Learning Outcomes:** LO1, LO2, LO3, LO4

Coursework 1: For your service, complete a literature search on an area of best practice you wish to investigate. Use this research to design an audit relevant to your own work

Coursework 2: Complete an essay discussing the relevance of the principles of clinical governance to your own workplace and describe how these are currently met and identify an areas for improvement and how these improvements may be implemented

**Coursework/Submissions deadlines:** April and July

### Resit Assessment Procedures:

#### Coursework resubmission:

**Please Note: Students need to gain a summative mark of 50% with no coursework below 40%. Students who fail the module at the first attempt will be asked to re-submit the failed courseworks.**

### Recommended Reading:

Bowman (2001) Governance and autonomy in alternatives to hospital care. Age and Ageing. 30-S3, 15-18

Rome et al (2009) Clinical audit of foot problems in patients with rheumatoid arthritis treated at Counties Manukau District Health Board, Auckland, New Zealand. J Foot Ankle Res. May 15;2:16

Grimshaw et al (2004) Effectiveness and efficiency of guideline dissemination and implementation strategies. Health Technology Assessment. Feb;8(6):iii-iv, 1-72

Healthcare Quality improvement Partnership <http://www.hqip.org.uk/>

## MODULE DESCRIPTION FORM

### 94 904 Orthotic Studies

<b>Module Code:</b> 94 904		<b>Module Title:</b> Orthotic Studies	
<b>Module Registrar:</b> Ms Christine McMonagle			
<b>Other Lecturers Involved:</b> Roy Bowers, Karyn Ross, Chris Cox, Suzanne Faulkner		<b>Credit Weighting:</b> 20	<b>Semester:</b> 1 and 2
<b>Compulsory/optional/elective class:</b> Optional		<b>Academic Level:</b> 5	
<b>Prerequisites:</b> Restricted to physicians, surgeons, allied health professionals and rehabilitation engineers.			
<b>Module Format and Delivery (hours):</b>			
<b>Residential Weeks</b>	<b>Assignments</b>	<b>Private Study</b>	<b>Total</b>
	40	160	200
<b>General Aims</b>			
To give students an overview of the current practice of orthosis provision in terms of orthosis prescription, manufacture, fitting and appropriate biomechanical and therapy theory.			
<b>Specific Learning Outcomes</b>			
<p><b>Knowledge Based Objectives</b> The course will facilitate development of knowledge of:-</p> <ol style="list-style-type: none"> <li>1) orthosis prescription,</li> <li>2) orthosis design and manufacture,</li> <li>3) appropriate therapy regimes</li> </ol> <p><b>Skills Based Objectives</b> On completion of the course, you should be able to:-</p> <ol style="list-style-type: none"> <li>1) reflect on the body-device interface - matching interface materials and tissue.</li> <li>2) review the aims and objectives fitting of lower-limb orthotic devices.</li> </ol> <p><b>Learning Outcomes</b> On completion of the course you should have developed learning about:-</p> <ol style="list-style-type: none"> <li>1) materials used for orthosis - manufacturing processes current and future</li> <li>2) challenges of custom design and manufacture</li> <li>3) rapid prototyping, joining dissimilar materials, CAD/CAM</li> <li>4) passive, FES and hybrid orthotic structures - control strategies</li> </ol>			
<b>Syllabus</b>			
<p><u>Manual One-Upper Limb Orthotics</u> The manual gives an overview of clinical and functional anatomy and assessment of the upper limb Basic splinting positions, which form the basis of orthotic management of the hand, are detailed. Different orthotic treatment options are considered in order to manage a range of different conditions including burns, musculoskeletal trauma, nerve injury, and arthritis. This allows the student to gain an understanding of the aims and principles of orthotic management of the upper limb.</p> <p><u>Manual Two- Foot Orthotics</u> Assessment and clinical anatomy of the foot. Participants will gain an appreciation of dynamic analysis of gait, and this, coupled with a knowledge of common foot pathologies will provide an understanding of the aims and principles of orthotic management of the foot. Considerations for orthotic design during specific phases in gait will be discussed. Assessment of clinical effectiveness of orthotic management of the foot.</p> <p><u>Manual Three – Ankle Foot Orthoses</u> Clinical and functional anatomy of the foot, as well as features of normal gait will be reviewed. The process of physical examination and specific assessment techniques for individuals with orthopaedic and neurological conditions will be covered. Orthotic solutions based on functional loss affecting the ankle and foot will be presented. Common issues including deformity, pain, muscle weakness and spasticity will be considered.</p>			

## 12 Principles of Assessment and Feedback

The coursework for this module is spaced throughout the year to provide students with time for reflection and analysis. Feedback should be provided 3 weeks after submission of each coursework allowing time for the feedback to improve the next submission, providing opportunities for the student to self-correct. The summative assessment is designed to provide a positive impact on learning by reinforcing the students' knowledge and learning.

### Assessment Method(s) Including Percentage Breakdown and Duration of Exams

Examination	Duration	None	Weighting %	0
Coursework	No. of Assignments	3	Weighting %	CW1 33.3% (essay) CW2 33.3% (essay) CW3 33.3% (presentation)

**Coursework/Submissions deadlines:** A coursework timetable is circulated at the start of the academic session.

Coursework 1 will cover Manual 1 and examine knowledge based objectives 1, 2 and 3; skills based objectives 1 and 2.

Coursework 2 will cover Manual 2 and examine knowledge based objectives 1, 2 and 3 and skills based objectives 1-2 and learning outcome 2.

Coursework 3 will cover Manual 3 and examine knowledge based objectives 1&2 and learning outcomes 1-4.

### Resit Assessment Procedures:

#### PLEASE NOTE:

Students need to gain a summative mark of 50% with no coursework below 40%.

Those who fail the module at the first attempt will be re-examined. This re-examination will consist entirely of an examination or coursework/s (as appropriate)

### Recommended Reading:

Supplementary reading as listed in each manual



## MODULE DESCRIPTION FORM

### 94 905 Prosthetic Studies

<b>Module Code:</b> 94 905		<b>Module Title:</b> Prosthetic Studies	
<b>Module Registrar:</b> Dr Tony McGarry			
<b>Other Lecturers Involved:</b> Sarah Day, Laura Murray, Gemma McGinty		<b>Credit Weighting:</b> 20	<b>Semester:</b> 1 and 2
<b>Compulsory/optional/elective class:</b> Optional		<b>Academic Level:</b> 5	
<b>Prerequisites:</b> Restricted to physicians, surgeons, allied health professionals and rehabilitation engineers.			
<b>Module Format and Delivery (hours):</b>			
<b>Residential Weeks</b>	<b>Assignments</b>	<b>Private Study</b>	<b>Total</b>
	40	160	200
<b>General Aims</b>			
<p>1. This module is restricted to physicians, surgeons and therapists. The module will provide a background on general principles of the current practice of prosthesis provision in terms of prescription. Manufacture, fitting and appropriate bio-mechanical and therapy theory.</p> <p>2. The module will also help students develop awareness and practical understanding of issues that influence the effectiveness of amputee rehabilitation. In addition, it will provide students with an opportunity to enhance their own professional skills when dealing with other professionals and prosthetic users.</p>			
<b>Specific Learning Outcomes</b>			
<p><b>Knowledge Based Objectives</b> The course will facilitate development of knowledge and basic understanding of:-</p> <ul style="list-style-type: none"> <li>• rehabilitation following amputation</li> <li>• trans-tibial prosthetics</li> <li>• trans-femoral prosthetics</li> <li>• upper extremity prosthetics</li> </ul> <p><b>Skills Based Objectives</b> On completion of the course, you should be able to:-</p> <ul style="list-style-type: none"> <li>• identify multiple causes for amputation.</li> <li>• understand the strength of working in a multidisciplinary team and the value of milestones</li> <li>• understand the rationale for the prescription process</li> <li>• understand the various prosthetic components and appropriate selection criteria</li> </ul> <p><b>Learning Outcomes</b> On completion of the course you should have developed learning about:-</p> <ul style="list-style-type: none"> <li>• your own perspective on prosthetic rehabilitation, and the limitations that your professional 'programming' places upon your knowledge, thought and action.</li> </ul>			
<b>Syllabus</b>			
<p><b><u>Manual One –Prosthetic Rehabilitation</u></b></p> <ul style="list-style-type: none"> <li>• General overview of rehabilitation</li> <li>• Pre- and post-operative management of the patient</li> <li>• Selection of level of amputation</li> <li>• Wound management</li> <li>• Lower limb amputation rehabilitation</li> <li>• Multidisciplinary teams</li> <li>• Classification and management of congenital deficiency</li> <li>• Milestones of rehabilitation</li> </ul>		<p><b><u>Manual Two – Transtibial Prosthetics</u></b></p> <ul style="list-style-type: none"> <li>• General overview of transtibial and ankle disarticulation rehabilitation</li> <li>• Bilateral transtibial amputation rehabilitation</li> <li>• Transtibial gait considerations</li> <li>• Prescription principles</li> <li>• Types of transtibial prosthetic sockets</li> <li>• Generic types of feet and other transtibial components</li> </ul>	
<p><b><u>Manual Three – Transfemoral Prosthetics</u></b></p> <ul style="list-style-type: none"> <li>• General overview of transfemoral, knee disarticulation and hip disarticulation prosthetic rehabilitation marketing</li> <li>• Bilateral transfemoral amputation</li> <li>• Prescription principles</li> <li>• Types of transfemoral prosthetic socket</li> <li>• Transfemoral gait considerations</li> <li>• Generic types of knee and other transfemoral components</li> </ul>		<p><b><u>Manual Four – Upper Limb Prosthetics</u></b></p> <ul style="list-style-type: none"> <li>• Types and causes of upper limb amputation and limb absence</li> <li>• General overview of upper limb amputation rehabilitation</li> <li>• Prescription principles</li> <li>• Types of upper limb prosthesis (cosmetic and functional)</li> <li>• Prosthetic hands and appliances</li> <li>• Examples of customised upper limb</li> </ul>	

## 12 Principles of Assessment and Feedback

The coursework for this module is spaced throughout the year to provide students with time for reflection and analysis. Feedback should be provided 3 weeks after submission of each coursework allowing time for the feedback to improve the next submission, providing opportunities for the student to self-correct.

The summative assessment is designed to provide a positive impact on learning by reinforcing the students' knowledge and learning.

### Assessment Method(s) Including Percentage Breakdown and Duration of Exams

Examination	Duration	None	Weighting %	0
Coursework	No. of Assignments	3	Weighting %	CW1: 33.3% CW2: 33.3% CW3: 33.3%

**Coursework/Submissions deadlines:** A coursework timetable is circulated each session.

### Resit Assessment Procedures:

**PLEASE NOTE:**

**Students need to gain a summative mark of 50% with no coursework below 40%.**

**Those who fail the module at the first attempt will be re-examined. This re-examination will consist entirely of an examination or coursework/s (as appropriate)**

### Recommended Reading:

Supplementary reading as listed in each manual

**MODULE DESCRIPTION FORM**

**94 928 Introductory Biomechanics**

<b>Module Registrar:</b> Dr Craig Childs				<b>Taught To:</b> MSc Prosthetic/Orthotic Rehabilitation Studies		
<b>Other Lecturers Involved:</b> None				<b>Credit Weighting:</b> 20		<b>Semester:</b> 1&2
<b>Compulsory/optional/elective class:</b> Optional				<b>Academic Level:</b> 5		
<b>Prerequisites:</b> none						
<b>Module Format and Delivery (hours):</b>						
Lecture	Tutorial	Laboratory	Project	Assignments	Private Study	Total
				40	160	200
<b>Educational Aim</b>						
<ol style="list-style-type: none"> <li>1. To encourage and promote the development of the <i>deep learner</i>.</li> <li>2. To cultivate reflective and problem solving skills which in turn will lead to an understanding of the reasons which underlie the design of prosthetic and orthotic components and devices.</li> </ol>						
<b>Learning Outcomes</b>						
<p>On completion of the module the student is expected to be able to:</p> <p>LO1 apply mathematical principles in the analysis of force systems in prosthetics and orthotics</p> <p>LO2 analyse force systems occurring at the tissue device interface and within assistive devices</p> <p>LO3 understand the rationale for the support and control forces associated with using prostheses and orthoses</p> <p>LO4 appreciate how such forces may be best applied at the device/tissue interface to achieve clinical objectives</p> <p>LO5 appreciate the effects of such forces on the user and the device</p> <p><i>(UK SPEC suggests no more than 4 learning outcomes per module. Statements must be broad and be syllabus free and link in with the intended learning outcomes on the programme specifications.)</i></p>						
<b>Syllabus</b>						
<p><b>Manual One – Revision of Maths</b></p> <ul style="list-style-type: none"> <li>• Revision of Algebra</li> <li>• Revision of trigonometry</li> <li>• Units</li> <li>• Standard prefixes</li> <li>• Dimensional homogeneity</li> </ul>			<p><b>Manual Two – Mechanics</b></p> <ul style="list-style-type: none"> <li>• Definitions</li> <li>• Bi-planar vectors</li> <li>• Effects of two or more vectors</li> <li>• Newton’s three laws</li> <li>• Free body diagrams</li> <li>• Friction</li> <li>• Velocity and acceleration</li> </ul>			
<p><b>Manual Three – Biomechanics of Gait</b></p> <ul style="list-style-type: none"> <li>• Terminology</li> <li>• Kinematics</li> <li>• Kinetics</li> <li>• Describing Normal Gait</li> <li>• Energy Expenditure</li> <li>• Juvenile and Elderly Gait</li> </ul>			<p><b>Manual Four – Biomechanics of the Tissue Device Interface</b></p> <ul style="list-style-type: none"> <li>• Effect of pressure on tissue</li> <li>• Skin</li> <li>• Stump/socket interfaces</li> <li>• Shear stress measurements</li> <li>• Orthoses</li> </ul>			
<p><b>Manual Five – Mechanics of Materials</b></p> <ul style="list-style-type: none"> <li>• The definitions</li> <li>• Effects of forces on materials</li> <li>• Effect of the shape of the material</li> </ul>			<ul style="list-style-type: none"> <li>• Materials in use</li> <li>• Beam loading</li> <li>• Structural efficiency</li> <li>• Designing for safety</li> </ul>			
<b>Assessment of Learning Outcomes</b>						
<b>Criteria</b>						
<p>Learning is facilitated by provision of self-test section in each manual Coursework assessments encourage a deeper understanding and receive feedback to fine tune knowledge. In each case they may include mathematical analysis or discussion of a treatment rationale.</p>						
<ol style="list-style-type: none"> <li>C1 Select mathematical principles appropriate to the solution of a defined problem.</li> <li>C2 Apply these mathematical principles to analyse force systems occurring at the tissue device interface and within assistive devices.</li> <li>C3 Describe and explain the rationale for the support and control forces associated with using prostheses and orthoses.</li> <li>C4 Provide a rationale for the application of forces at the device/tissue interface to achieve clinical objectives</li> <li>C5 Predict the effects of such forces on the user and the device.</li> </ol>						

**Principles of Assessment and Feedback**

The University's Assessment and Feedback Policy can be found at: [www.strath.ac.uk/staff/policies/academic/](http://www.strath.ac.uk/staff/policies/academic/)

Please state briefly how these are incorporated in this module.

Learning is facilitated by provision of self-test section at the end of each manual to provide immediate consolidation of knowledge.

Coursework assessments encourage learning and understanding of taught material. They include mathematical analysis and discussion of a treatment rationale based on experience and a search of the literature. Formal feedback is provided.

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

**Student Feedback:**

*Feedback is provided electronically within three weeks of the submission date of each coursework*

**Assessment Method(s) Including Percentage Breakdown and Duration of Exams**

Examination			Coursework		Project	
Number	Duration	Weighting	Number	Weighting	Number	Weighting
0	0	0%	3	CW1: 30% CW2: 30% CW3: 40%		
			LO1-LO4			

*Indicate which learning outcomes (L01, L02 etc) are to be assessed by exam/coursework/project as required.*

**Coursework / Submissions deadlines:**

Assignment	Handed-out	Handed-in
1	Semester 2 Week 1	Semester 2 Week 4
2	Semester 2 Week 9	Semester 2 Week 12
3	Semester 2 Week 18	Same day

**Resit Examination Procedures:****PLEASE NOTE:**

**Students need to gain a summative mark of 50% with no coursework below 40% to pass the module. Students who fail the module at the first attempt will be re-examined during the August diet. This re-examination will consist entirely of examination or coursework/s (as appropriate).**

**Recommended Reading:**

Supplementary reading as listed in each manual

**Additional Student Feedback:**

*(Please specify details of when additional feedback will be provided)*

## MODULE DESCRIPTION FORM

### 94 929 Lower Limb Prosthetic Biomechanics

<b>Module Code:</b> 94 929		<b>Module Title:</b> MSc Prosthetics/Orthotics Rehabilitation Studies	
<b>Module Registrar:</b> Dr Craig Childs			
<b>Other Lecturers Involved:</b> None		<b>Credit Weighting:</b> 20	<b>Semester:</b> 1 and 2
<b>Compulsory/optional/elective class:</b> Optional		<b>Academic Level:</b> 5	
<b>Assumed Prerequisites:</b> Evidence of learning in Biomechanics at an introductory level is preferred.			
<b>Module Format and Delivery (hours):</b>			
<b>Lecture and Tutorial</b>	<b>Assignments</b>		<b>Private Study</b>
	40		160
<b>General Aims</b>			
<p>This module aims to:</p> <ol style="list-style-type: none"> <li>1. This module will provide the student with an understanding of the forces generated during walking with a lower limb prosthesis. The effects of these forces on the patient and the prosthesis will be examined. The influence on these forces of mal-alignment and the subsequent effect on the gait pattern of the patient will be explored.</li> <li>2. The student will reflect on the reasons for gait deviations, other than those of poor socket rectification and alignment and the effect on the stump/socket interface forces of different socket types will be examined.</li> <li>3. The student will reflect on the requirements of prosthetic feet, knee mechanisms and prescription criteria based on mechanical characteristics.</li> </ol>			
<b>Specific Learning Outcomes</b>			
<p>On completion of the module the student is expected to be able to:</p> <p>LO1 apply the biomechanical principles learned in the Introductory Biomechanics module to lower limb prostheses and to reflect upon the design of those devices and components</p> <p>LO2 describe and explain the biomechanical principals underlying the designs of prosthetic socket</p> <p>LO2 employ mathematical methods of estimating the magnitude of forces at the stump/socket interface during standing and walking</p> <p>LO3 understand the biomechanical characteristics and selection of available prosthetic feet and knee mechanisms</p> <p>LO4 identify when particular socket designs are appropriate</p> <p>LO5 reflect on the reasons for common gait deviations</p> <p>LO6 understand how the choice of component can affect the comfort of the prosthesis</p> <p>LO7 understand how the choice of components can affect the stability and safety of their user</p>			
<b>Syllabus</b>			
<b><u>Manual One – Biomechanics of the Trans-tibial Prosthesis</u></b>		<b><u>Manual Two – Biomechanics of the Ankle Disarticulation and Partial Foot Prostheses</u></b>	
<ul style="list-style-type: none"> <li>• The stump</li> <li>• The prosthesis</li> <li>• Sagittal plane biomechanics</li> <li>• Coronal plane biomechanics</li> <li>• Suspension methods</li> <li>• Studies of amputee gait</li> <li>• Estimation of stump/socket forces</li> </ul>		<ul style="list-style-type: none"> <li>• The stump</li> <li>• The prosthesis</li> <li>• Sagittal plane biomechanics</li> <li>• Coronal plane biomechanics</li> <li>• Suspension methods</li> <li>• Studies of amputee gait</li> <li>• Estimation of stump/socket forces</li> <li>•</li> </ul>	
<b><u>Manual Three – Biomechanics of the Trans-femoral Prosthesis</u></b>		<b><u>Manual Four – Prosthetic feet and knee mechanisms</u></b>	
<ul style="list-style-type: none"> <li>• The stump</li> <li>• The prosthesis</li> <li>• Sagittal plane biomechanics</li> <li>• Coronal plane biomechanics</li> <li>• Suspension methods</li> <li>• Studies of amputee gait</li> <li>• Estimation of stump/socket forces</li> </ul>		<ul style="list-style-type: none"> <li>• The role of the foot during walking</li> <li>• Walking on a prosthetic foot</li> <li>• Prosthetic feet</li> <li>• Comparison of prosthetic feet</li> <li>• The role of the knee during normal walking</li> <li>• Stance and swing phase requirements of knee mechanisms</li> <li>• Designs of knee mechanisms</li> <li>• Review of gait studies concentrating on knee function</li> </ul>	

**Assessment of Learning Outcomes****Criteria**

Learning is facilitated by provision of self-test section in each manual.

Coursework assessments encourage a deeper understanding and receive feedback to fine tune knowledge. In each case they may include mathematical analysis or discussion of a treatment rationale.

- C1 Select mathematical principles appropriate to the solution of a defined problem.
- C2 Apply these mathematical principles to analyse force systems occurring at the tissue device interface and within the prosthesis
- C3 Describe and explain the rationale for the support and control forces associated with using prostheses
- C4 Provide a rationale for the application of forces at the device/tissue interface to achieve clinical objectives
- C5 Predict the effects of such forces on the user and the prosthesis

**12 Principles of Assessment and Feedback**

Learning is facilitated by provision of self-test section at the end of each manual to provide immediate consolidation of knowledge.

Coursework assessments encourage learning and understanding of taught material. They include mathematical analysis and discussion of a treatment rationale based on experience and a search of the literature. Formal feedback (using specific form) is provided.

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

**Student Feedback:**

*Feedback is provided electronically within three weeks of the submission date of each coursework.*

**Assessment Method(s) Including Percentage Breakdown and Duration of Exams**

Examination			Coursework	
Number	Duration	Weighting	Number	Weighting
0	0	0%	3	CW1: 30 % CW2: 30% CW3: 40%

**Coursework/Submissions deadlines:**

A coursework timetable is circulated each Session.

Learning Outcomes	Examination	Coursework
	Not applicable	All

**Resit Assessment Procedures:****PLEASE NOTE:**

**Students need to gain a summative mark of 50% with no coursework below 40%.**

**Those who fail the module at the first attempt will be re-examined. This re-examination will consist entirely of an examination or coursework/s (as appropriate)**

**Recommended Reading:**

Supplementary reading as listed in each manual.

## MODULE DESCRIPTION FORM

### 94 930 Lower Limb Orthotic Biomechanics

<b>Module Registrar:</b> Dr Craig Childs				<b>Taught To:</b> MSc Prosthetic/Orthotic Rehabilitation Studies		
<b>Other Lecturers Involved:</b> None				<b>Credit Weighting:</b> 20	<b>Semester:</b> 1&2	
<b>Compulsory/optional/elective class:</b> Optional				<b>Academic Level:</b> 5		
<b>Prerequisites:</b> 94 928 or evidence of learning in Biomechanics at an introductory level						
<b>Module Format and Delivery (hours):</b>						
Lecture	Tutorial	Laboratory	Project	Assignments	Private Study	Total
				40	160	200
<b>Educational Aim</b>						
This module aims to:						
<ol style="list-style-type: none"> <li>1. To give students an appreciation of how the loads applied externally to the foot during normal and pathological gait affect the structures of the foot and leg.</li> <li>2. To give students an understanding of how orthoses should apply forces to oppose, correct or accommodate deformity.</li> <li>3. To give students an understanding of the structural requirements of an orthosis related to its function.</li> <li>4. To help students understand the factors which can affect the comfort of the patient-device interface.</li> </ol>						
<b>Learning Outcomes</b>						
On completion of the module the student is expected to be able to:						
<p>LO1 apply the biomechanical principles learned in the Introductory Biomechanics module to lower limb orthoses and to reflect upon the design of those devices and components</p> <p>LO2 describe and explain the biomechanical principals underlying the designs of orthotic sockets</p> <p>LO2 employ mathematical methods of estimating the magnitude of forces at the body/orthosis interface during standing and walking</p> <p>LO3 understand the biomechanical characteristics and selection of available orthotic mechanisms</p> <p>LO4 identify when particular orthotic designs are appropriate</p> <p>LO5 reflect on the reasons for common gait deviations</p> <p>LO6 understand how the choice of component can affect the comfort of the orthosis</p> <p>LO7 understand how the choice of components can affect the stability and safety of their user</p>						
<i>(UK SPEC suggests no more than 4 learning outcomes per module. Statements must be broad and be syllabus free and link in with the intended learning outcomes on the programme specifications.)</i>						
<b>Syllabus</b>						
<b>Manual One – Foot Orthotics</b> <ul style="list-style-type: none"> <li>• The role of the Foot during Walking</li> <li>• Pressures and Forces</li> <li>• Foot Orthoses and Shoe Adaptations</li> <li>• Biomechanical Analysis of Normal Foot Forces</li> <li>• Effect of Shoe Rigidity on Foot Forces</li> <li>• Biomechanics of the Partial Foot</li> <li>• Estimation of Foot Forces in Gait</li> </ul>				<b>Manual Two – Ankle-Foot Orthotics</b> <ul style="list-style-type: none"> <li>• Biomechanics and pathomechanics of the ankle and subtalar joints</li> <li>• Orthotic designs</li> <li>• AFO force systems</li> <li>• Effect of AFO on knee function</li> <li>• Prescription of AFOs</li> <li>• Estimation of AFO body device interface forces</li> <li>• The gait of patients wearing AFO's</li> <li>• Energy consumption</li> </ul>		
<b>Manual Three – Knee-Ankle-Foot Orthotics</b> <ul style="list-style-type: none"> <li>• Normal joint ranges of motion</li> <li>• Muscle action</li> <li>• Orthotic biomechanics</li> <li>• Effect of loading on the knee orthosis</li> <li>• Effect of loading on the tissues</li> <li>• Prescription requirements</li> <li>• Orthotic devices</li> <li>• Estimation of forces in the normal knee</li> </ul>				<b>Manual Four – Hip-Knee-Ankle-Foot Orthotics</b> <ul style="list-style-type: none"> <li>• Motion of the hip joint</li> <li>• HKAFO prescription</li> <li>• Calculation of the hip joint forces</li> <li>• Force systems to meet prescription aims</li> <li>• Example of analysis at the hip joint</li> <li>• Body segment parameters</li> </ul>		
<b>Manual Five – RGOs HGOs Wheelchairs &amp; Fracture Braces</b> <ul style="list-style-type: none"> <li>• Swivel Walkers</li> <li>• Hip Guidance Orthoses</li> <li>• Reciprocating Gait Orthoses</li> </ul>				<ul style="list-style-type: none"> <li>• Wheelchairs</li> <li>• Seating</li> <li>• Functional Electrical Stimulation</li> <li>• Fracture Bracing</li> </ul>		

## Assessment of Learning Outcomes

### Criteria

Learning is facilitated by provision of self-test section in each manual.

Coursework assessments encourage a deeper understanding and receive feedback to fine tune knowledge. In each case they may include mathematical analysis or discussion of a treatment rationale.

C1 Select mathematical principles appropriate to the solution of a defined problem.

C2 Apply these mathematical principles to analyse force systems occurring at the tissue device interface and within the orthosis

C3 Describe and explain the rationale for the support and control forces associated with using orthoses

C4 Provide a rationale for the application of forces at the device/tissue interface to achieve clinical objectives

C5 Predict the effects of such forces on the user and the orthosis

### Principles of Assessment and Feedback

The University's Assessment and Feedback Policy can be found at: [www.strath.ac.uk/staff/policies/academic/](http://www.strath.ac.uk/staff/policies/academic/)

Please state briefly how these are incorporated in this module.

Learning is facilitated by provision of self-test section at the end of each manual to provide immediate consolidation of knowledge.

Coursework assessments encourage learning and understanding of taught material. They include mathematical analysis and discussion of a treatment rationale based on experience and a search of the literature. Formal feedback is provided.

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

### Student Feedback:

*Feedback is provided electronically within three weeks of the submission date of each coursework*

### Assessment Method(s) Including Percentage Breakdown and Duration of Exams

Examination			Coursework		Project	
Number	Duration	Weighting	Number	Weighting	Number	Weighting
0	0	0%	3	CW1: 30% CW2: 30% CW3: 40%		
			LO1-LO4			

*Indicate which learning outcomes (L01, L02 etc) are to be assessed by exam/coursework/project as required.*

### Coursework / Submissions deadlines:

Assignment	Handed-out	Handed-in
1	Semester 2 Week 3	Semester 2 Week 6
2	Semester 2 Week 11	Semester 2 Week 14
3	Semester 2 Week 20	Same day

### Resit Examination Procedures:

#### PLEASE NOTE:

Students need to gain a summative mark of 50% with no coursework below 40% to pass the module. Students who fail the module at the first attempt will be re-examined during the August diet. This re-examination will consist entirely of examination or coursework/s (as appropriate)..

### Recommended Reading:

Supplementary reading as listed in each manual

### Additional Student Feedback:

*(Please specify details of when additional feedback will be provided)*



**MODULE DESCRIPTION FORM**

**94 936 Clinical Gait Analysis**

<b>Module Code:</b> 94 936		<b>Module Title:</b> MSc Prosthetic/Orthotic Rehabilitation Studies		
<b>Module Registrar:</b> Dr Andy Kerr				
<b>Other Lecturers Involved:</b>		<b>Credit Weighting:</b> 20	<b>Semester:</b> 1 and 2	
<b>Compulsory/optional/elective class:</b> Optional		<b>Academic Level:</b> 5		
<b>Assumed Prerequisites:</b>				
<b>Module Format and Delivery (hours):</b>				
<b>Lecture</b>	<b>Tutorial</b>	<b>Assignments</b>	<b>Private Study</b>	<b>Total</b>
30	10	10	150	200
<b>Educational Aims</b>				
This module aims to:				
<ol style="list-style-type: none"> <li>1. Provide a theoretical underpinning for human gait.</li> <li>2. Analyse common gait abnormalities including identification of the primary impairment.</li> <li>3. Provide students with an appreciation of the measurement techniques used in gait analysis from the simple, low cost to the expensive high tech.</li> <li>4. Develop an awareness and practical understanding of the interpretation of the gait data and its relevance to clinically observed conditions.</li> </ol>				
<b>Learning Outcomes</b>				
On completion of the module the student is expected to be able to:				
<ul style="list-style-type: none"> <li>• LO1: Explain the biomechanics of normal and abnormal gait patterns</li> <li>• LO2: Describe currently available gait assessment techniques</li> <li>• LO3: Analyse human gait from video and biomechanical data.</li> <li>• LO4: Discuss the impact of a neurological or orthopaedic impairment on the gait cycle</li> <li>• LO5: Carry out an analysis of gait using locally available resources and discuss its limitations.</li> </ul>				
<b>Syllabus</b>				
<ul style="list-style-type: none"> <li>• Theories of gait</li> <li>• Attributes of normal gait</li> <li>• Determinants of gait</li> <li>• Observational gait analysis</li> <li>• Temporal and spatial parameters of gait</li> <li>• 2-D kinematics</li> <li>• 3-D kinematics</li> <li>• Case studies with different pathologies</li> <li>• Clinical examination</li> <li>• Kinetic analysis <ul style="list-style-type: none"> <li>• The ground reaction force</li> <li>• Centre of Pressure</li> <li>• Joint moment</li> </ul> </li> <li>• Electromyography</li> <li>• Potential and kinetic energy</li> <li>• Power Analysis</li> </ul>				
<b>Assessment of Learning Outcomes</b>				
<b>Criteria</b>				
For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:				
LO1 Explain the biomechanics of normal and abnormal gait patterns				
C1: Compare different theories of gait.				
C2: Demonstrate knowledge of kinematic, kinetic analysis and force transducers				
LO2: Describe currently available gait assessment techniques				
C1: Map available gait measurement techniques to underlying impairment.				

C2: Describe the key advantages of measurement techniques for clinical use.  
 LO3: Analyse human gait from video and biomechanical data.  
 C1: Undertake several gait analyses of normal and abnormal gait using video and biomechanical data.  
 C2: Condense gait data into a single summarising paragraph of the main findings.  
 LO4: Discuss the impact of a neurological or orthopaedic impairment on the gait cycle  
 C1: Show understanding of changes in gait data in reference to pathology.  
 LO5: Carry out an analysis of gait using locally available resources and discuss its limitations.  
 C1: Put together a plan for a gait analysis  
 C2: Collect and analyse data  
 C3: Present results and highlight limitations of protocol and measurement techniques.

**12 Principles of Assessment and Feedback**

The clinical gait analysis module expects students to apply the knowledge and understanding gained from this module to their own clinical practice where possible. The assessments for the module will help the student concentrate on each aspect of clinical gait and to reflect upon the subject and discuss it with their peers in their own work environment. Students will have an opportunity during the module to link with their tutor and develop their ideas through open dialogue. These distance learning students are supported through this module to enable them to have sufficient confidence to participate in a clinical gait laboratory with the ability to analyse and interpret results. The final examination encourages deep understanding and commitment to memory of information provided in the teaching manuals.

Feedback will be provided at each stage and particularly following coursework submission.

**Assessment Method(s) Including Percentage Breakdown and Duration of Exams**

Examination			Coursework	
Number	Duration	Weighting	Number	Weighting
0			2	100% (each CW 50%)

**Coursework/Submissions deadlines:** A coursework timetable is circulated each Session.

Learning Outcomes	Examination	Coursework
	Not applicable	L01, LO2, LO3, LO4, LO5

**Resit Assessment Procedures:**

**PLEASE NOTE:**

**Students need to gain a minimum summative mark of 50% with no coursework below 45%. Students who fail the module at the first attempt will be asked to re-submit the failed courseworks.**

**Recommended Reading:**

Supplementary reading as listed in each manual.

An Introduction to Human Movement and Biomechanics (2019). Kerr and Rowe. Elsevier ISBN-10: 0702062367

Human Walking (2013). Richards. Churchill Livingstone

**MODULE DESCRIPTION FORM**

**94 937 Advanced Prosthetic Science**

<b>Module Code:</b> 94 937		<b>Taught to (Course):</b> MSc Prosthetic/Orthotic Rehabilitation Studies	
<b>Module Registrar:</b> Laura Murray			
<b>Other Lecturers Involved:</b> Sarah Day, Dr Anthony McGarry, Gemma McGinty		<b>Credit Weighting:</b> 20	<b>Semester:</b> 1 and 2
<b>Compulsory/optional/elective class:</b> Optional		<b>Academic Level:</b> 5	
<b>Assumed Prerequisites:</b> Only available to professional Prosthetists and Orthotists			
<b>Module Format and Delivery (hours):</b>			
<b>Tutorial</b>	<b>Assignments</b>	<b>Private Study</b>	<b>Total</b>
0	40	160	200
<b>Educational Aims</b>			
<p>This module aims to:                  This module aims to provide an increased awareness of the state-of-the-art in prosthetic design and implementation as well as practical awareness of the limitations and gaps in knowledge in this field.</p>			
<b>Learning Outcomes</b>			
<p>On completion of the module the student should demonstrate :</p> <p>LO1 critically appraise various prosthetic components and it's appropriate selection criteria                  LO2 identify multiple sources of information and conduct complex information searches                  LO3 Structure analysis of information and data without reduction and exclusion                  LO4 Undertake critical reflection on personal learning from the process</p>			
<b>Syllabus</b>			
The module will teach the following:			
<p><b><u>Manual One- Prosthetic Socket Fit; Implications of Basic Engineering Principles</u></b></p> <ul style="list-style-type: none"> <li>• General overview of trans-tibial prosthetic socket design in theory and practice.</li> <li>• In-depth understanding of one or more trans-tibial concepts</li> <li>• In-depth appraisal of current state-of-the-art research in to the trans-tibial body/device interface</li> <li>• Future trans-tibial socket research possibilities</li> </ul>		<p><b><u>Manual Two – Prosthetic feet</u></b></p> <ul style="list-style-type: none"> <li>• General overview of generic types of prosthetic feet</li> <li>• General overview of specific tibial torque absorbers and shock absorbers</li> <li>• In-depth understanding of one or more types of feet</li> <li>• In-depth appraisal of current state-of-the-art research into prosthetic foot design</li> <li>• Future prosthetic feet research possibilities</li> </ul>	
<p><b><u>Manual Three – Knee Mechanism Design, Theory and Practice</u></b></p> <ul style="list-style-type: none"> <li>• General overview of generic types of prosthetic knees</li> <li>• General overview of prosthetic knee prescription principles for trans-femoral amputees and knee disarticulation amputees</li> <li>• In-depth appraisal of current state-of-the-art research into prosthetic knee design</li> <li>• Future prosthetic feet research possibilities</li> </ul>		<p><b><u>Manual Four – Upper Limb Prosthetics</u></b></p> <ul style="list-style-type: none"> <li>• General overview of upper limb amputee rehabilitation</li> <li>• General overview of congenital limb absence rehabilitation</li> <li>• In-depth understanding of prosthetic management of one or more levels of upper limb amputation</li> <li>• In-depth appraisal of current state-of-the-art research for one or more component designs for upper limb amputees</li> <li>• Future upper limb research possibilities</li> </ul>	
<b>Assessment of Learning Outcomes</b>			
<p><b>Criteria</b>                  For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:</p> <p><b>Note:</b> Criteria break the LO down into 'teachable' elements but do not become syllabus orientated i.e. no mention of CAD package names, components etc.</p> <p>LO1–LO4 will be assessed by a written essay and or assignments on a scenario based clinical and or theoretical topic.</p> <p>C1: Demonstration of knowledge by discussion and reasoning.</p>			

C2: Demonstration of objectivity when discussing/contrasting conflicting scientific evidence.  
 C3: Clarity of expression and logical flow of thoughts.

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

**12 Principles of Assessment and Feedback**

Please state briefly how these are incorporated in this module.

Students course work (four essays) will be assessed and high quality feedback that helps students to self-correct will be provided in a positive manner. In addition, formative interaction and dialogue between teacher-student is encouraged throughout the course and self-assessment and reflection are valued.

**Student Feedback:**

*Feedback is provided electronically within three weeks of the submission date of each coursework.*

**Assessment Method(s) Including Percentage Breakdown and Duration of Exams**

Examination			Coursework	
Number	Duration	Weighting	Number	Weighting
0	0	0%	3	CW1: 35% (essay) CW2: 35% (essay) CW3: 30% (presentation)

**Coursework/Submissions deadlines:** A coursework timetable is circulated in at the beginning of the module for all submissions in each session.

Learning Outcomes	Examination	Coursework
	Not applicable	Essay Manual 1 Essay Manual 2 and Manual 3 Presentation Manual 4

**Resit Assessment Procedures:**

**PLEASE NOTE:**

Students need to gain a summative mark of 50% with no coursework below 40%.

**Those who fail the module at the first attempt will be re-examined. This re-examination will consist entirely of an examination or coursework/s (as appropriate)**

**Recommended Reading:**

The reading material provided is the basis of the required learning. Extensive self-study must be completed reviewing the latest journal articles regarding prosthetic advances for both upper and lower limb. This should include, but not be limited to; microprocessor knees, microprocessor ankles, hydraulic ankles, myoelectric hands, targeted muscle re-innervation, socket developments and pattern recognition.

Atlas of Amputations and Limb Deficiencies: Surgical, Prosthetic, and Rehabilitation Principles (2016). Krajbich, Joseph Ivan; Pinzur, Michael S.; Potter, Benjamin K.; Stevens, Phillip M.

## MODULE DESCRIPTION FORM

### 94 935 Advanced Orthotic Science

<b>Module Code:</b> 94 935		<b>Module Title:</b> MSc Prosthetic/Orthotic Rehabilitation Studies	
<b>Module Registrar:</b> Chris Cox			
<b>Other Lecturers Involved:</b> Roy Bowers, Karyn Ross		<b>Credit Weighting:</b> 20	<b>Semester:</b> 1 and 2
<b>Compulsory/optional/elective class:</b> Elective		<b>Academic Level:</b> 5	
<b>Prerequisites:</b> Only available to qualified Prosthetists and Orthotists			
<b>Module Format and Delivery (hours):</b>			
<b>Lecture</b>	<b>Assignments</b>	<b>Private Study</b>	<b>Total</b>
	40	160	200
<b>General Aims</b>			
<ol style="list-style-type: none"> <li>1. Provide an increased appreciation of the theoretical and practical basis of orthotic management in terms of biomechanical and neurobiomechanical theories, and the principles of prescription, orthotic design and fitting.</li> <li>2. Facilitate the development of an awareness and practical understanding of the issues influencing the effectiveness of orthotic provision and the likely impact of evolving technologies in the field of orthotic science.</li> </ol>			
<b>Learning Outcomes</b>			
<p>On completion of the module the student should demonstrate :</p> <p>LO1 the development of the knowledge and skills to design and conduct an effective search of the literature regarding orthoses and the orthotic management options of various patient groups and give an in-depth critical appraisal of the literature</p> <p>LO2 development of the necessary skills for academic writing and the effective use of references</p> <p>LO3 the ability to critically appraise various orthotic components, treatment regimens and the appropriateness of their selection referring where possible to evidence based or best practice</p> <p>LO4 an integrated multi-professional approach to patient centred orthotic management, using reflective practice and shared experiences of colleagues as an approach to solving clinical problems</p> <p>LO5 professional development through academic study and clinical application. This includes the ability to teach and train others, giving, receiving and responding to formative feedback</p>			
<b>Syllabus</b>			
The course will facilitate development of in-depth knowledge in the following areas:			
<b><u>Manual One – Foot Orthotics</u></b>		<b><u>Manual Two – Ankle Foot Orthotics</u></b>	
<ul style="list-style-type: none"> <li>• Foot assessment</li> <li>• Foot function</li> <li>• Materials</li> <li>• Foot problems and orthotic management options</li> <li>• Footwear</li> <li>• Clinical theory</li> </ul>		<ul style="list-style-type: none"> <li>• Anatomical movements of the foot and ankle</li> <li>• Important joint axes of the foot and ankle</li> <li>• Normal gait</li> <li>• Patient examination and assessment</li> <li>• Pathological Gait</li> </ul> <p>Orthotic solutions</p>	
<b><u>Manual Three – Knee Ankle Foot Orthoses</u></b>			
<ul style="list-style-type: none"> <li>• Patient examination techniques</li> <li>• KAFO design considerations</li> <li>• KAFO components</li> <li>• Gait disorders</li> <li>• Knee Orthoses; HKAFO</li> </ul>			

Assessment of Learning Outcomes																			
<p><b>Criteria</b> For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning: <b>Please Note:</b> Criteria break the LO down into 'teachable' elements but do not become syllabus orientated i.e. no mention of CAD package names, components etc.</p> <p>LO1 – LO5 will be assessed by a written essay and or assignments on a scenario based clinical and or theoretical topic or analysis.</p> <p>LO1, LO2, LO3 C1: Documentation of a logical and thorough approach to the identification of multiple sources of information and conducting complex information searches C2: Demonstration of knowledge by discussion and reasoning C3: Demonstration of objectivity when discussing/contrasting conflicting scientific evidence. C4: Clarity of expression and logical flow of thoughts.</p> <p>LO4 C1: Demonstration of knowledge by discussion of the multi-professional approach to optimise patient centred rehabilitation</p> <p>LO5 C1: Demonstration throughout the module of self-reflection and positive responses to formative feedback. The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.</p>																			
<p><b>12 Principles of Assessment and Feedback</b></p> <p>This module will ask the student to develop an ability to review the current literature and evidence in orthotic science, evaluate it and identify gaps in the evidence that require further research and development to improve clinical practice and patient care in orthotics. Course works develop the candidate ability to scan and critically evaluate the evidence.</p> <p><b>Student Feedback:</b></p> <p><i>Feedback is provided electronically within three weeks of the submission date of each coursework.</i></p>																			
<p><b>Assessment Method(s) Including Percentage Breakdown and Duration of Exams</b></p> <table border="1"> <thead> <tr> <th colspan="3">Examination</th> <th colspan="2">Coursework</th> </tr> <tr> <th>Number</th> <th>Duration</th> <th>Weighting</th> <th>Number</th> <th>Weighting</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> <td>3</td> <td>CW1: 25% (essay) CW2: 25% (critical appraisal of paper) CW3: 50% (presentation)</td> </tr> </tbody> </table>					Examination			Coursework		Number	Duration	Weighting	Number	Weighting	0	0	0	3	CW1: 25% (essay) CW2: 25% (critical appraisal of paper) CW3: 50% (presentation)
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<p><b>Coursework / Submissions deadlines:</b> A coursework timetable is circulated each Session.</p> <table border="1"> <thead> <tr> <th rowspan="2">Learning Outcomes</th> <th>Examination</th> <th>Coursework</th> </tr> </thead> <tbody> <tr> <td>Not applicable</td> <td>LO1, LO2, LO3, LO4, LO5</td> </tr> </tbody> </table>					Learning Outcomes	Examination	Coursework	Not applicable	LO1, LO2, LO3, LO4, LO5										
Learning Outcomes	Examination	Coursework																	
	Not applicable	LO1, LO2, LO3, LO4, LO5																	
<p><b>Coursework 1 will cover Manual 1 and examine knowledge based objectives 1, 2 and 4; skills based objective 2 and leaning outcome 1.</b></p> <p><b>Coursework 2 will cover manual 2 and examine knowledge based objectives 1-3 and skills based objectives 1-2 and learning outcome 1.</b></p> <p><b>Coursework 3 will cover Manuals 1,2 and 3 and examine knowledge based objectives 1-4 and learning outcomes 1-4</b></p> <p><b>Resit Assessment Procedures:</b></p> <p><b>PLEASE NOTE:</b> <b>Students need to gain a summative mark of 50% with no coursework below 40%.</b> <b>Those who fail the module at the first attempt will be re-examined. This re-examination will consist entirely of an examination or coursework/s (as appropriate)</b></p>																			
<p><b>Recommended Reading:</b></p> <p>Supplementary reading as listed in each manual. Additional essential foot orthotic reading provided on MyPlace.</p>																			

## MODULE DESCRIPTION FORM

### 94 938 Research Methodology

<b>Module Code:</b> 94 938		<b>Module Title:</b> MSc Prosthetic/Orthotic Rehabilitation Studies		
<b>Module Registrar:</b> Sarah Day				
<b>Other Lecturers Involved:</b> All staff		<b>Credit Weighting:</b> 20	<b>Semester:</b> 1 and 2	
<b>Compulsory/optional/elective class:</b> Compulsory for MSc		<b>Academic Level:</b> 5		
<b>Prerequisites:</b> None				
<b>Module Format and Delivery (hours):</b>				
<b>Lecture</b>	<b>Tutorial</b>	<b>Assignments</b>	<b>Private Study</b>	<b>Total</b>
30		35	135	200
<b>Educational Aims</b>				
This module aims to provide an introduction to the philosophy, ethics and methodology of research.				
<b>Learning Outcomes</b>				
<p>On completion of the module the student is expected to be able to:</p> <p>LO1: Show an awareness of the research environment: methodology (quantitative/qualitative), methods, hierarchy of evidence.</p> <p>LO2: Design a research project covering identification of aims, objectives and methods of the study, critical literature review, and ethical considerations.</p> <p>LO3: Show an understanding of research project management including time consideration and risk assessments.</p> <p>LO4: Communicate the processes covered in LO1 to LO3 in an effective and focussed manner.</p>				
<b>Syllabus</b>				
<ul style="list-style-type: none"> <li>• Brief overview of research methodologies (quantitative and qualitative)</li> <li>• Introduction to literature search skills <ul style="list-style-type: none"> <li>➤ Referencing</li> </ul> </li> <li>• Hierarchy of evidence <ul style="list-style-type: none"> <li>➤ Research methods</li> <li>➤ Sampling techniques</li> </ul> </li> <li>• Critical literature review skills <ul style="list-style-type: none"> <li>➤ Critical appraisal techniques</li> </ul> </li> <li>• Formulation of research problem</li> <li>• Ethical considerations <ul style="list-style-type: none"> <li>➤ Principles and practice of Ethics</li> </ul> </li> <li>• Research project management <ul style="list-style-type: none"> <li>➤ Research methods</li> </ul> </li> <li>- Quantitative: Assessment methods and calibration</li> <li>- Qualitative: Interviews, questionnaire development, focus groups <ul style="list-style-type: none"> <li>➤ Data collection and analysis</li> <li>➤ Time management</li> <li>➤ Risk assessment</li> </ul> </li> <li>• Communication of research <ul style="list-style-type: none"> <li>➤ Delivery of research findings (journal articles, conferences, reports)</li> </ul> </li> </ul>				
<b>Assessment of Learning Outcomes</b>				
<b>Criteria</b>				
For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning				
<p>LO1 will be assessed by a written report on 3-4 studies on a selected topic. Studies are to be identified through a literature search of recognised databases, linked to the evidence hierarchy and evaluated appropriately.</p> <p>C1: Outline search strategy for location of studies.</p> <p>C2: Discuss the articles in the context of research hierarchies.</p>				

C3: Discussion of article aims, objectives and methods.

LO2 – LO4 will be assessed through a presentation.

C1: Understanding of research design techniques by development of research question placed in context of literature review and outlining aims, objectives, methods and ethical considerations.

C2: Outline a practical research project, including data collection techniques, time management.

C3: Clarity of expression and logical flow of thoughts.

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

**12 Principles of Assessment and Feedback**

Students are encouraged to create pieces of scientific writing and reflect upon their work by considering self, tutor and peer feedback. The coursework is intended to ensure that students spend time and energy on level 5 tasks which stretch their knowledge and skills.

It is expected that the learning community of students undertaking this module will be able to critically appraise each others work in a safe but challenging environment.

Each task and associated assessment is intended to build the confidence of the student and help them work towards becoming an independent researcher.

**Student Feedback:**

*Feedback is provided electronically within three weeks of the submission date of each coursework.*

**Assessment Method(s) Including Percentage Breakdown and Duration of Exams**

Coursework		Learning Outcomes
Number	Weighting	
1 Report	40%	LO1 to LO4
1 Presentation	60%	

**Coursework/Submissions deadlines:**

**Coursework 1 (Report): To be submitted mid January. Check Myplace for exact submission date.**

**Coursework 2 (Slide presentation with audio commentary): To be submitted in April. Check Myplace for exact submission date.**

**Please Note:**

**Students need to gain a summative mark of 50% with no coursework below 45%.**

**Those who fail the module at the first attempt will be re-examined. This re-examination will consist entirely of coursework/s (as appropriate)**

**Resit Assessment Procedures:**

Coursework 1 (Report): Re-submit a new report using different studies on the same or a different subject during the re-sit period in August.

Coursework 2 (Oral presentation): To be submitted as a slide presentation with audio saved on a suitable media, as directed.

**Recommended Text book:**

Thomas JR, Nelson JK, Silverman J. (2010). Research methods in physical activity, 6<sup>th</sup> Edition, 457 pages - ISBN: 073608939X

**Additional recommended reading:**

Bowling Ann. (2009). Research methods in health: investigating health and health services. Maidenhead: Open University Press. ISBN: 978 0 335 233649

Moore Nick (2006). How to do research: The practical guide to designing and managing research projects. (3<sup>rd</sup> revised edition). London: Facet Publishing. ISBN: 978-1856045940.

Murray R and Moore S (2006). The handbook of academic writing – a fresh approach. Maidenhead: Open University Press. ISBN: 978-0335219339.

Whalley Hammell K and Carpenter C (2004). Qualitative research in evidence-based rehabilitation. Edinburgh: Churchill Livingstone. ISBN: 0-443-07231-0.



Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB (2006). Designing clinical research: an epidemiologic approach. (3<sup>rd</sup> revised edition). Baltimore: Lippincott Williams and Wilkins. ISBN: 978-0781782104.

Offredy, M and Vickers, P (2010) Developing a healthcare research proposal: an interactive student guide. London: Wiley Blackwell. ISBN: 9781405183376.

**Reference books:**

Harris M and Taylor G (2008). Medical statistics made easy. (2<sup>nd</sup> edition). Bloxham: Scion Publishing, Bloxham. ISBN: 978 1 904842 55 2.

Campbell MJ, Machin D, and Walters SJ (2007). Medical statistics: a textbook for the health sciences. (4<sup>th</sup> edition). Oxford: Wiley-Blackwell. ISBN: 978-0470025192.

Machin D, Campbell MJ, Tan SB, Tan SH (2009). Sample size tables for clinical studies. (3<sup>rd</sup> edition). Oxford: Wiley-Blackwell. ISBN: 978-1405146500.

## MODULE DESCRIPTION FORM

### 94 939 Data Analysis

<b>Module Code:</b> 94 939		<b>Module Title:</b> Data Analysis		
<b>Module Registrar:</b> Dr Michelle Maclean				
<b>Other Lecturers Involved:</b> Dr Chris McCormick		<b>Credit Weighting:</b> 20	<b>Semester:</b> 1 and 2	
<b>Compulsory/optional/elective class:</b> Compulsory for MSc		<b>Academic Level:</b> 5		
<b>Prerequisites:</b> None				
<b>Module Format and Delivery (hours):</b>				
<b>Lecture</b>	<b>Tutorial</b>	<b>Assignment</b>	<b>Private Study</b>	<b>Total</b>
10	10	40	140	200
<b>Education Aims</b>				
This module aims to provide the student with a broad grounding in the data analysis methods appropriate to research in a clinical area. Students will gain an understanding of aspects including experimental design, research writing skills, and the use of mathematics and statistics tools including software for data visualisation and analysis.				
<b>Learning Outcomes</b>				
On completion of the module the student is expected to be able to				
LO1 Understand the use of mathematics and statistics tools in the quantitative research process, with training in appropriate data analysis and statistical software.				
LO2 Demonstrate knowledge and understanding of the most common methods for summarising, presenting and analysing categorical and continuous data, including regression methods and probability.				
LO3 Demonstrate understanding of when particular estimation and inference methods are appropriate and how to interpret their results.				
LO4 Demonstrate the ability to appropriately utilise the various methods of data presentation and statistical analysis when writing scientific reports.				
<b>Syllabus</b>				
The module will teach the following:				
<b>Section 1: Producing Data</b>				
<ul style="list-style-type: none"> <li>• Sampling</li> <li>• Designing Studies</li> </ul>				
<b>Section 2: Exploratory Data Analysis</b>				
<ul style="list-style-type: none"> <li>• Examining Distributions</li> <li>• Examining Relationships</li> </ul>				
<b>Section 3: Probability</b>				
<ul style="list-style-type: none"> <li>• Introduction (Probability)</li> <li>• Random Variables</li> <li>• Sampling Distributions</li> </ul>				
<b>Section 4: Inference</b>				
<ul style="list-style-type: none"> <li>• Introduction (Inference)</li> <li>• Estimation</li> <li>• Hypothesis Testing</li> </ul>				
<b>Section 5: Scientific Writing</b>				
<ul style="list-style-type: none"> <li>• Writing scientific abstracts and reports</li> <li>• Presenting and reporting data and statistical analysis</li> </ul>				

## Assessment of Learning Outcomes

### Criteria

For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning.  
**Note:** Criteria break the LO down into 'teachable' elements but do not become syllabus orientated i.e. no mention of CAD package names, components etc

#### **LO1-3 Demonstrate knowledge and understanding of the most common methods for visualising and analysing data using descriptive and statistical methods, and understand how to interpret their results.**

- C1 Describe and apply the main principles of visualising and analysing data generated in research studies
- C2 Construct a research hypotheses and identify a claim
- C3 Apply appropriate inference methods to test a research study hypothesis
- C4 Interpret results from hypothesis testing

#### **LO1-4 Demonstrate the ability to appropriately utilise the various methods of data presentation and statistical analysis when writing scientific papers/reports.**

- C1 Apply knowledge learnt to construct a scientific abstract and prepare a research paper/report
- C2 Present, report and interpret data and statistical analysis within a research paper/report

### 12 Principles of Assessment and Feedback

The use of course work only assessment for this module and it being in the form of constructing a journal paper, section by section allows the student to develop not only the data analysis skills required for clinical research but also those skills required for interpretation and reporting of such analysis. Detailed feedback from the initial piece where descriptive statistics is required along with reviewing of literature on the topic allows the student to develop their skills further and reflect on previous gaps in their knowledge. Choice is given in that students have to design the methodology of the study themselves, making decision about data collection, protocol etc. Detailed feedback is also given after the final submission of the research report/journal style paper.

#### **Student Feedback:**

*Feedback is provided electronically within three weeks of the submission date of each coursework.*

### Assessment Method(s) Including Percentage Breakdown and Duration of Exams

Coursework		Learning Outcomes
Data Presentation Assignment	20%	LO1-LO3
Class Test	30%	LO1-LO3
Mini-project Report	50%	LO1-LO4

**Coursework / Submissions deadlines: will be announced on Myplace**

### Resit Assessment

**Students need to gain a summative mark of 50% with no coursework below 40%.**

**Those who fail the module at the first attempt will be re-examined. This re-examination will consist entirely of coursework/s (as appropriate).**

### Recommended Reading:

Access to comprehensive lecture slides and notes will be provided during the class. Students wishing to carry out additional reading to supplement their learning may wish to consult some of the following texts, which provide a broad range of approaches to the study and application of statistics within a biomedical context.

- Altman D G (1991) Practical Statistics for Medical Research, Chapman & Hall
- Biles C M (1995) Statistics, A Health Science Orientation, W C Brown
- Bland M (1995) An Introduction to Medical Statistics, Oxford University Press
- Bowers D (1996) Statistics from Scratch: an introduction for health care professionals, Wiley
- Bowers D (1997) Statistics further from Scratch: for health care professionals. Wiley
- Bury T, Mead J (1998) Evidence-based Healthcare, Butterworth Heinemann McDowell

## MODULE DESCRIPTION FORM

### BE942 The Holistic Management of Foot and Ankle Musculoskeletal (MSK) Conditions

<b>Module Registrar:</b> Chris Cox	<b>Taught To (Course):</b> MSc Prosthetic/Orthotic Rehabilitation Studies		
<b>Other Lecturers Involved:</b> Suzanne Faulkner	<b>Credit Weighting:</b> 20	<b>Semester:</b> 1 and 2	
<b>Assumed Prerequisites:</b> Only available to professional Prosthetists and Orthotists	<b>Optional class</b> Y	<b>Academic Level:</b> 5	<b>Suitable for Exchange:</b> No

#### Module Format and Delivery (HOURS i.e. 1 credit = 10hrs of study):

Lecture	Tutorial	Laboratory	Group-work	External	Online	Project	Assignments	Private Study	Total
					15		40	145	200

#### Educational Aim

To gain a more in-depth understanding of how the foot and ankle structures interact with each other when loaded during walking or running activities. This class will explore the interaction between abnormal foot and ankle biomechanics and foot and ankle pathology.

This class will build on the student's existing clinical knowledge of foot and ankle biomechanics and understanding of pathologies. It will achieve this through an enhanced focus on key pathologies and appropriate treatment plans. This module will focus on the assessment, diagnosis and treatment of foot and ankle pathologies and evaluate key foot orthotic design features that can be used to treat these conditions. It will also develop a deeper understanding of the roles of other interventions that are used in combination with orthotic intervention in the management of musculoskeletal foot and ankle conditions in line with the current evidence base.

This module will be delivered exclusively online.

#### Learning Outcomes

The objective of the class is to deepen the students' understanding of key principles that underpin foot and ankle biomechanics and how these might influence treatment options for musculoskeletal foot and ankle pathologies.

LO1 Critically evaluate the fundamental concepts of foot and ankle function during the gait cycle.

LO2 Recognise when to use key clinical tests to facilitate diagnosis of foot and ankle musculoskeletal pathologies.

LO3 Combine the knowledge of functional anatomy and biomechanics to inform a patient-centred rehabilitation treatment plan for orthotic management of musculoskeletal foot and ankle pathologies.

LO4 Have an awareness of the role of adjunct non-orthotic treatment options in the management of musculoskeletal foot and ankle pathologies.

#### Syllabus

The syllabus will help develop a better knowledge of prescription criteria in the holistic management of foot and ankle pathologies individualised to the needs of the patient while developing clinical reasoning skills.

The module will cover the following areas which will be delivered online. The mode of delivery will be a combination of asynchronous lectures, with online tutorials to support student learning and patient videos demonstrating the use of pertinent clinical examination test procedures. Specifically, the content includes:

- Evolution of biomechanics theory used to prescribe foot orthoses
- Biomechanics of the foot and ankle
- Gait: focusing on the foot and ankle and key events that increase the load on key structures within the foot and ankle
- Tissue stress
- Misconceptions and inaccuracies regarding the effect of foot orthosis on lower limb biomechanics.
- The use of prefabricated foot orthoses

- The use of custom foot orthoses
- The assessment, diagnosis and holistic management forefoot conditions
- The assessment, diagnosis and holistic management midfoot conditions
- The assessment, diagnosis and holistic management rearfoot conditions
- Varying shape capture techniques with a focus on alternate slipper cast techniques which are pathology specific
- Inverted designs of foot orthoses, everted orthoses, Blake inverted design, Medial Kirby skive technique.

### Assessment of Learning Outcomes

#### Criteria

For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:  
*[Note: Criteria break the LO down into 'teachable' elements but do not become syllabus orientated i.e. no mention of CAD package names, components etc.]*

LO1–LO4 will be assessed by a written essay-based assignment on a key theoretical topic that underpins foot function and lower limb biomechanics.

LO1–LO4 will be further assessed using a scenario-based clinical assignment that will assess the ability of the student to list and describe the appropriate clinical tests required to assist with diagnosis and the subsequent treatment plan. This scenario-based clinical assignment will be assessed online with questions from examiners in a viva-style assessment format

C1: Demonstration of knowledge by discussion and reasoning.

C2: Demonstration of objectivity when discussing/contrasting conflicting scientific evidence.

C3: Clarity of expression and logical flow of thoughts.

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

### Principles of Assessment and Feedback

The University's Assessment and Feedback Policy can be found at: [www.strath.ac.uk/staff/policies/academic/](http://www.strath.ac.uk/staff/policies/academic/)

Assessment criteria will be made explicit and will be provided at the start of the module.

In the assessments, this clinical module expects students to apply the knowledge and understanding gained from this module to their own clinical practice where possible.

Individual feedback on performance can be arranged if appropriate.

### Assessment Method(s) Including Percentage Breakdown and Duration of Exams

	Examinations			Courseworks		Projects	
	Number	Month(s)	Duration	Weighting	Number	Weighting	Number
				1	30% (Essay)		
				1	70% (presentation)		
<b>L/Outcomes</b>				LO1,2,3,4,			

*Indicate which learning outcomes (L01, L02 etc) are to be assessed by exam/coursework/project as required.*

#### Coursework / Submissions deadlines (academic weeks):

Coursework 1 – essay: This will be set on week 8 Semester 1 with a submission date in December.

Coursework 2 – clinical based scenario. This will be set in week 11 with a submission date in May.

Precise dates will be confirmed at the beginning of the module and will be available on Myplace

Please Note:

Students need to gain a summative mark of 50% with no coursework below 45%.

#### Resit Assessment Procedures:

Those who fail the module on the first attempt will be re-examined. This re-examination will consist of a resit essay if the mark is below 50% or a resit presentation if the mark is below 50%. If both the essay and presentation are failed, the student will be required to resit both of these.

## Recommended Reading

***Purchase recommended	**Highly recommended reading	*For reference
<b>Book</b>		
**Albert, S.F., Curran, S.A. and FCPodMed, F.F.P.M., 2018. <i>Lower Extremity Biomechanics: Theory and Practice Volume 1</i> . Bipedmed, LLC.		
*Kirby KA: Volume I Foot and Lower Extremity Biomechanics: A Ten Year Collection of Precision Intricast Newsletters. Precision Intricast, Inc., Payson, Arizona,		
* Kirby KA: Volume II Foot and Lower Extremity Biomechanics: A Ten Year Collection of Precision Intricast Newsletters. Precision Intricast, Inc., Payson, Arizona,		
* Kirby KA: Volume III Foot and Lower Extremity Biomechanics: A Ten Year Collection of Precision Intricast Newsletters. Precision Intricast, Inc., Payson, Arizona,		
* Kirby KA: Volume IV Foot and Lower Extremity Biomechanics: A Ten Year Collection of Precision Intricast Newsletters. Precision Intricast, Inc., Payson, Arizona,		
* Perry J. Gait analysis: normal and pathological function 1992. New Jersey, SLACK Inc. Terminology of Human Walking From North American Society for Gait and Human Movement 1993 and AAOP Gait Society 1994		
<b>Publications</b>		
** Dananberg, H.J., 2000. Sagittal plane biomechanics. American diabetes association. <i>Journal of the American Podiatric Medical Association</i> , 90(1), pp.47-50.		
**Fuller, E.A. and Kirby, K.A., 2007. Subtalar joint equilibrium and tissue stress approach to biomechanical therapy of the foot and lower extremity. <i>Lower Extremity Biomechanics: Theory and Practice</i>		
**Hicks, J.H., 1953. The mechanics of the foot: I. The joints. <i>Journal of anatomy</i> , 87(Pt 4), p.345		
** Kirby KA: Subtalar joint axis location and rotational equilibrium theory of foot function. <i>JAPMA</i> , 91(9):465-488, 2001.		
* Kirby KA: Rotational equilibrium across the subtalar joint axis. <i>JAPMA</i> , 79: 1-14, 1989.		
** Kirby, K.A., 1992. The medial heel skive technique. Improving pronation control in foot orthoses. <i>Journal of the American Podiatric Medical Association</i> , 82(4), pp.177-188.		
* Kirby KA, Green DR: Evaluation and Nonoperative Management of Pes Valgus, pp. 295-327, in DeValentine, S.(ed), <i>Foot and Ankle Disorders in Children</i> . Churchill-Livingstone, New York, 1992.		
** Lundgren, P., Nester, C., Liu, A., Arndt, A., Jones, R., Stacoff, A., Wolf, P. and Lundberg, A., 2008. Invasive in vivo measurement of rear-, mid-and forefoot motion during walking. <i>Gait &amp; posture</i> , 28(1), pp.93-100		
** McPoil TG, HuntGC, Evaluation and management of foot and ankle disorders: Present problems and future directions. <i>Journal of Orthopaedic and Sports Physical Therapy</i> 1995; 21(6): 381-388		
*Nester, C.J., 2009. Lessons from dynamic cadaver and invasive bone pin studies: do we know how the foot really moves during gait?. <i>Journal of Foot and Ankle Research</i> , 2(1), pp.1-7.		

## MODULE DESCRIPTION FORM

### 94 900 Research Project

<b>Module Code:</b> 94 900				<b>Module Title:</b> MSc in Prosthetics and/or Orthotics Rehabilitation		
<b>Module Registrar:</b> Karyn Ross						
<b>Other Lecturers Involved:</b> Project Supervisors will be appointed				<b>Credit Weighting:</b> 60		<b>Semester:</b> 1 and 2
<b>Compulsory/optional/elective class:</b> Compulsory				<b>Academic Level:</b> 5		
<b>Assumed Prerequisites:</b> 120 taught credits						
<b>Module Format and Delivery (hours):</b>						
Lecture	Tutorial	Laboratory	Project	Assignments	Private Study	Total
0	0	0	600	0	0	600
<b>Education Aims</b>						
<p>This module aims to develop planning, resourcing and implementing health care focussed research skills within a work based research project. It will involve students in a number of processes which include justification of the selected topic, selecting, devising and applying appropriate methods and techniques; applying for ethical approval where human subjects are involved; anticipating and solving problems which arise; displaying knowledge of background literature; and evaluating and reporting the conclusions of the study.</p> <p>The project may take the form of an extended literature review or involve experimental work. This project work will have been supported by compulsory modules in research methodology and data analysis.</p>						
<b>Learning Outcomes</b>						
<p>On completion of the module the student is expected to be able to</p> <p>LO1 Demonstrate a critical understanding of the principal theories; principles and concepts of their chosen topic  LO2 Show autonomy in planning and executing significant project of research, investigation or development  LO3 Apply critical analysis, evaluation and interpretation of their own data and/or that of other published work  LO4 Conduct independent research at place of work and communicate effectively with peers and other specialists in their chosen field</p>						
<b>Syllabus</b>						
<p>Students engage in a research project of their own choice under the supervision of a personal tutor/supervisor with whom they may liaise. A local mentor, where possible is recommended, to assist with learning and project work. A dissertation 'normally' of between 12,000 and 15,000 words (not including appendices and references) must be submitted as the culmination of the project.</p>						
<b>Assessment of Learning Outcomes</b>						
<b>Criteria</b>						
<p>For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:</p> <p>LO1 Demonstrate a critical understanding of the principal theories; principles and concepts of their chosen topic.  C1 Demonstration of knowledge by discussion, understanding and reasoning by demonstration of competence in the following areas: ethics, literature review, project design and development, writing up.  C2 Demonstration of objectivity when discussing/contrasting conflicting scientific evidence.  C3 Clarity of expression and logical presentation of information.</p> <p>LO2 Show autonomy in planning and executing significant project of research, investigation or development  C1 Develop an appropriate methodology to examine the research question  C2 Execute the developed methodology  C3 Critically appraise the execution of the methodology</p> <p>LO3 Apply critical analysis, evaluation and interpretation of their own data and/or that of other published work  C1 Handle, present and discuss numerical data in an accurate and appropriate manner  C2 Discuss their analysis based on the theoretical framework</p> <p>LO4 Conduct independent research at place of work and communicate effectively with peers and other specialists in their chosen field  C1 Use a good standard of technical English  C2 Explain complex concepts with clarity of expression</p>						

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

### 12 Principles of Assessment and Feedback

Student has a personal tutor/supervisor and a local mentor with whom they liaise as required in order to progress their research project. The academic tutor will provide feedback on a regular basis by email/skype to provide support and advice. It is recommended that supervisors implement quarterly progress reports during the duration of the project.

Examinations			Coursework		Projects	
No.	Duration	Weighting	No.	Weighting	No.	Weighting
0	0	0	0	0	Thesis Viva	70% 30%
Learning Outcomes					L01-4	

#### Coursework / Submissions deadlines:

Last week of May to last week of June for initial and revised submissions of thesis to supervisor. Final submission of dissertation will be beginning of August. A viva date will be arranged for middle of August. Calendar of submission dates for dissertation will be available on 'Myplace' website.

#### Resit Assessment Procedures:

In the case of borderline candidates if the dissertation does not meet the required academic standards it will be at the discretion of the Exam Board as to whether the candidate will be permitted to resubmit the dissertation.

**Please Note: Students need to gain a mark of 50% to pass the project. Students failing to achieve a pass in the project will be awarded the Diploma in Prosthetic/Orthotic Rehabilitation Studies.**

#### Recommended Reading:

The choice of literature is dependent on the project which is being undertaken and it is up to students to direct themselves in collating the appropriate literature.

#### Student Feedback:

On-going throughout project by e-mail, Zoom, Microsoft Teams and Skype as required.

### Assessment of Learning Outcomes

#### Criteria

For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning.  
**Note:** Criteria break the LO down into 'teachable' elements but do not become syllabus orientated i.e. no mention of CAD package names, components etc

#### LO1-3 Demonstrate knowledge and understanding of the most common methods for visualising and analysing data using descriptive and statistical methods, and understand how to interpret their results.

- C1 Describe and apply the main principles of visualising and analysing data generated in research studies
- C2 Construct a research hypotheses and identify a claim
- C3 Apply appropriate inference methods to test a research study hypothesis
- C4 Interpret results from hypothesis testing

#### LO1-4 Demonstrate the ability to appropriately utilise the various methods of data presentation and statistical analysis when writing scientific papers/reports.

- C1 Apply knowledge learnt to construct a scientific abstract and prepare a research paper/report
- C2 Present, report and interpret data and statistical analysis within a research paper/report

### 12 Principles of Assessment and Feedback

The use of course work only assessment for this module and it being in the form of constructing a journal paper, section by section allows the student to develop not only the data analysis skills required for clinical research but also those skills required for interpretation and reporting of such analysis. Detailed feedback from the initial piece where descriptive statistics is required along with reviewing of literature on the topic allows the student to develop their skills further and reflect on previous gaps in their knowledge. Choice is given in that students have to design the methodology of the study themselves, making decision about data collection, protocol etc. Detailed feedback is also given after the final submission of the research report/journal style paper.



**Student Feedback:**

*Feedback is provided electronically within three weeks of the submission date of each coursework.*

**Assessment Method(s) Including Percentage Breakdown and Duration of Exams**

Coursework		Learning Outcomes
2	100	All

**Coursework / Submissions deadlines: will be announced on Myplace**

CW1: 40%

CW2: 60%

**Resit Assessment**

**Students need to gain a summative mark of 50% with no coursework below 45%.**

**Those who fail the module at the first attempt will be re-examined. This re-examination will consist entirely of coursework/s (as appropriate).**

**Recommended Reading:**

Altman D G (1991) Practical Statistics for Medical Research, Chapman & Hall  
 Biles C M (1995) Statistics, A Health Science Orientation, W C Brown  
 Bland M (1995) An Introduction to Medical Statistics, Oxford University Press  
 Bowers D (1996) Statistics from Scratch: an introduction for health care professionals, Wiley  
 Bowers D (1997) Statistics further from Scratch: for health care professionals. Wiley  
 Bury T, Mead J (1998) Evidence-based Healthcare, Butterworth Heinemann McDowell I,  
 Newell C (1997) Measuring Health - a guide to rating scales & questionnaires Oxford University Press  
 Polit D F, and Hungler B P (1997) Essentials of Nursing Research: Methods, Appraisal and Utilisation, Lippincott-Raven.  
 Streiner D L and Norman E I R (1998) Health Measurement Scales, A Practical guide to their measurement and use. Oxfords University Press.

Plus supplementary reading as listed in each manual.

# APPENDIX C

## Marking Guidelines

### University Marking Guide for Assessments

Consistency of marking is an important issue for students and staff.

The following minimal guidance is the basis of the University's marking structure for individual undergraduate assignments and classes, for essays, coursework, projects and examinations as well as for overall awards.

**Staff will of course need to supplement or provide alternative detailed descriptors for particular circumstances and contexts but this must be done in way that clearly demonstrates equivalent guidance and an approach to marking that is consistent with this University Guide.**

Please check the link for up-to-date version.

[Guidance on Marking Assessments in UNDERGRADUATE AND POSTGRADUATE TAUGHT Courses \(strath.ac.uk\)](http://strath.ac.uk)

%	Descriptor
90-100    80-89	<u>Truly exceptional/Outstanding performance:</u> <ul style="list-style-type: none"> <li>• Wide and appropriate knowledge and understanding above normal expectations including insight, and originality</li> <li>• High standard of communication skills</li> <li>• High standard of assessment and/or observational skills</li> </ul>
70 - 79	<u>Excellent performance:</u> <ul style="list-style-type: none"> <li>• Wide, appropriate knowledge and understanding including insight and originality</li> <li>• Good standard of communication skills</li> <li>• Good standard of assessment and/or observational skills</li> </ul>
60 - 69	<u>Comprehensively Good performance:</u> <ul style="list-style-type: none"> <li>• Wide, appropriate knowledge and understanding</li> <li>• Good standard of communication with only occasional lapses in detail</li> <li>• Good standard of assessment and/or observational skills with occasional lapses in detail</li> </ul>
50 - 59	<u>Generally Good performance:</u> <ul style="list-style-type: none"> <li>• Sound knowledge and understanding of essential material</li> <li>• Good standard of communication skills with occasional lapses in detail and logic</li> <li>• Good standard of assessment and/or observational skills with occasional lapses in detail and logic</li> </ul>
40 - 49	<u>Satisfactory performance:</u> <ul style="list-style-type: none"> <li>• Basic knowledge and understanding</li> <li>• Satisfactory communication skills with lapses in detail and logic</li> <li>• Satisfactory assessment and/or observational skills with lapses in detail and logic</li> </ul>
30 - 39	<u>Unsatisfactory/ Poor performance:</u> <ul style="list-style-type: none"> <li>• Some relevant information and limited understanding</li> <li>• Poor communication skills</li> <li>• Poor assessment and/or observational skills with serious lapses in detail and logic</li> </ul>
20 - 29	<u>Unsatisfactory/Weak performance</u> <ul style="list-style-type: none"> <li>• Limited knowledge and understanding</li> <li>• Poor communication skills</li> <li>• Poor assessment and /or observational skills with serious lapses in detail and logic</li> <li>• Little evidence that learning was seriously attempted</li> </ul>
1 - 19	<ul style="list-style-type: none"> <li>• Weak communication skills</li> <li>• Serious errors</li> </ul>

# APPENDIX D

## Course Evaluation Form

### COURSE EVALUATION FORM

Please indicate to what extent you either agree or disagree with the following statements.

*The information you give will be kept anonymous and will be used in ongoing quality processes.*

<b>Module:</b> (please fill in the module name in the box below:)

Please copy and paste the '✓' below  
And enter it into the appropriate cells



The Course Module:	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
• had clearly stated aims and objectives					
• met those aims and objectives					
• stimulated my learning					
• staff were responsive to my learning needs					
• communication was clear and effective					
• teaching was well prepared and organised					
• the pace of teaching was acceptable					
• teaching was provided in an effective manner					
<b>Course Materials:</b>					
• helped me prepare for the assessments					
• provided a positive motivation for learning					
<b>The Course Module Overall:</b>					
• met my expectations					
<b>What Additions to the Course Material would you suggest</b>					
<b>Further comments may be added below:</b>					

## APPENDIX E

### Staff List for Distance Learning

#### **COURSE DIRECTOR**

Ms Karyn Ross

E Mail

[k.ross@strath.ac.uk](mailto:k.ross@strath.ac.uk)

#### **COURSE TEACHING STAFF**

Robert J Bowers

[r.j.bowers@strath.ac.uk](mailto:r.j.bowers@strath.ac.uk)

Dr Arjan Buis

[arjan.buis@strath.ac.uk](mailto:arjan.buis@strath.ac.uk)

Dr Craig Childs

[craig.childs@strath.ac.uk](mailto:craig.childs@strath.ac.uk)

Chris Cox

[c.cox@strath.ac.uk](mailto:c.cox@strath.ac.uk)

Sarah Day

[sarah.day@strath.ac.uk](mailto:sarah.day@strath.ac.uk)

Suzanne Faulkner

[suzanne.faulkner@strath.ac.uk](mailto:suzanne.faulkner@strath.ac.uk)

Dr Andy Kerr

[a.kerr@strath.ac.uk](mailto:a.kerr@strath.ac.uk)

Laura Murray

[laura.murray.100@strath.ac.uk](mailto:laura.murray.100@strath.ac.uk)

Dr Anthony McGarry

[anthony.mcgarry@strath.ac.uk](mailto:anthony.mcgarry@strath.ac.uk)

Gemma McGinty

[gemma.mcginty@strath.ac.uk](mailto:gemma.mcginty@strath.ac.uk)

Dr Michelle McLean

[michelle.maclean@strath.ac.uk](mailto:michelle.maclean@strath.ac.uk)

Dr Christine McMonagle

[christine.mcmonagle@strath.ac.uk](mailto:christine.mcmonagle@strath.ac.uk)

Alana Stevenson

[alana.stevenson@strath.ac.uk](mailto:alana.stevenson@strath.ac.uk)

#### **ADMINISTRATIVE SUPPORT**

Gillian Boyd

[gillian.boyd@strath.ac.uk](mailto:gillian.boyd@strath.ac.uk)

# APPENDIX F

## USE OF COMPUTING FACILITIES AND RESOURCES

[Find and use IT or AV | University of Strathclyde](#)

[Library & IT student guide - web - September 2022 update.pdf \(strath.ac.uk\)](#)