



The
University
Of
Sheffield.

Department
Of Physics &
Astronomy.

MEDICAL PHYSICS

2011-2012

August 2011

1. Overview

Two programmes of study are offered jointly by the Department of Physics and Astronomy and Medical Physics (Department of Cardiovascular Science). The Physics with Medical Physics courses lead either to a BSc degree (3 years, code PHYU05), or to a MPhys (4 years, code PHYU10). The administration of both courses is handled by the Department of Physics and Astronomy, and so this guide should be read in conjunction with the Physics and Astronomy “Guide for Undergraduate Students”.

2. Points of contact

Department of Physics and Astronomy

Academic contact: Dr Ed Daw, room D28 (Hicks), internal telephone 24353, external 0114 2224353, email e.daw@sheffield.ac.uk.

Physics office: Mrs Tracy Hilton G12 (Hicks), internal telephone 23737, external 0114 2223737
Email: t.hilton@sheffield.ac.uk

Department of Cardiovascular Science, Medical Physics Group

Academic contact: Dr John Fenner, Room I107, Tower Block, Royal Hallamshire Hospital (RHH).
Telephone 0114 2713687 (x13687)
Email: j.w.fenner@sheffield.ac.uk

Medical Physics office contact: Mrs M Beckett, Room M110, Tower Block, RHH
Telephone 0114 2712313 (x12313)
Email: m.beckett@sheffield.ac.uk

Phoning extensions at the RHH from within the University should be prefixed by an 8, e.g. x12313 can be dialled using 812313.

3. Modules in Medical Physics

The table below shows the Medical Physics modules with their co-ordinators, and the semester in which they are given. Each module carries 10 credits unless otherwise indicated.

Code		Sem	Co-ord
Level 1			
MPY101	<i>Physics of Living Systems</i>	S	JWF/AJN
Level 2			
MPY205	<i>Aspects of Medical Imaging and Technology</i>	A	JWF
Level 3			
MPY308	<i>Clinical Engineering and Computational Mechanics</i>	A	AJN
MPY321	<i>Medical Physics Project</i>	A	JWF/AJN/DRH
MPY322	<i>Medical Physics Project</i>	S	JWF/AJN/DRH
Level 4			
MPY401	<i>Medical Physics Research Programme (40 credits)</i>	S	JWF/AJN/DRH
MPY424	<i>Hospital or Industrial Placement (20 credits)</i>	A	WBT/DRH/JWF

Lecturers

JWF	Dr John Fenner	Undergrad course director	RHH, I107	Tel: x 13687	j.w.fenner@shef
AJN	Dr Andrew Narracott	Lecturer	RHH, I107	Tel: x 13687	a.j.narracott@shef
DRH	Prof Rod Hose	Medical Physics	RHH, I106	Tel: x 13147	d.r.hose@shef
PVL	Dr Pat Lawford	Postgraduate Course Director	RHH, I106	Tel: x 12078	p.lawford@shef

Questions or matters arising from Medical Physics modules should be directed to the module co-ordinator in the first instance. Complete descriptions of each module are available on request and module content is discussed in the introductory lecture of each module. Descriptions of all modules are available on the University Web site and may usefully help physics/Medical Physics students with module choices.

Assessment and Examination

The Assessment and Examination schedule of each module is indicated in the module documentation.

Students are requested to submit work for assessment identified only by their student number and not by name. Anonymous marking where possible is Departmental policy.

All continuous assessment work, including laboratory reports, tutorial assignments and essays, has a clearly-defined submission date. All such work must be submitted to the Physics Office (G12), where its receipt will be logged.

It is Medical Physics policy to double-mark any continuous assessment element that contributes more than 10% of the total mark for a module.

Essay Assignments

The continuous assessment process within a module might include an essay assignment. The purpose of this written work is:

- to develop your facility with methods of literature retrieval and study, (you will gain credit for citing modern references from the scientific literature and for demonstrating an appreciation and an understanding of current ideas and developments - you must use more than the seed reference),
- to give you practice in writing clearly, concisely and coherently.

Unless you are notified of an alternative marking scheme for a particular assignment, the marks will be allocated according to the following schedule:

Content

Scope and adequacy of material, scientific accuracy, up-to-date references, discussion of new developments in the field. Is the material pitched at the right level for the target audience? 40%

Presentation

How does it look? Layout of text, headings and paragraphs. Good, clear and appropriate diagrams or illustrations. 20%

Structure

Clear introduction and conclusion. Consistent thread. What is the main theme? 20%

Clarity

Are the sentences properly structured? Is the meaning clear? 20%

Students are warned that the University takes issues of plagiarism extremely seriously. You should refer to the University website for guidance, but any member of staff can help you to understand more clearly how to learn from and present the work of others within your text without appearing to present it as your own.

Projects: Modules MPY321, MPY322, MPY401

The Department supports projects at levels three and level four. At level three, students will normally work in small teams (2 or 3 persons per group). Projects are proposed by members of academic and NHS staff, and will reflect their current clinical or research interests. If you have a particular interest in a sub-discipline you are encouraged to seek the support of a member of staff in the provision of an appropriate project - interest and enthusiasm go a long way! Allocation of students to projects takes place in the first week of the semester. A preliminary list of projects is made available towards the end of the preceding semester to stimulate interest, and wherever possible students are allocated to a project of their choice.

It is the responsibility of the student to maintain a project logbook and to arrange meetings with the supervisor at the necessary intervals. It is recommended that a *minimum of three formal meetings* should take place - one at the beginning of the project to define and agree goals, one after approximately four weeks to ensure that the project is running smoothly and one in week eight or nine to agree the content and format of the final report. It is suggested that informal progress meetings should take place at approximately two week intervals.

4. General Information

Academic or Personal Advice

The number of undergraduates taking Medical Physics is relatively small and the undergraduate course director, Dr John Fenner takes an interest in all students. You are always welcome to discuss any issues of academic or personal concern with Prof Rodney Hose, Dr John Fenner, Dr Andrew Narracott or Dr Patricia Lawford. Within the Physics and Astronomy Department, Dr Daw takes a particular interest in Medical Physics issues and students.

Staff Contact

All academic members of staff will be happy to make appointments to see students. If you want a meeting, you are encouraged to make an appointment directly with the staff concerned, perhaps immediately before or after a lecture, or by telephoning the secretary for Medical Physics (Margaret Beckett, RHH x12313, m.beckett@sheffield.ac.uk). E-mail is an excellent alternative, and is guaranteed to reach us. This appointment facility is to help undergraduate students to plan visits to the hospital knowing that we will be here and available. It is, after all, ten minutes walk! This system is intended for your benefit, and is not intended to imply that we are unavailable at other times.

Absence

If you have a good reason for absence you must inform your home department. If you miss lectures, labs or tutorials because you are ill, or if illness affects examinations, you should obtain an official Medical Certificate from your Doctor or from the University Health Service. Only if this is done can allowance be made by the Examination Board for missed coursework or laboratory work. If you are ill for periods of up to seven days which do not include or affect an assessment, you can complete a Student Medical Self-Certificate. Blank self-certificates are available from the Student Services Information Desk (SSiD) located in the Union. We can do much less in your interest with Self-Certificates than signed Doctor's notes; Faculty in particular is little impressed by the former. All medical certificates should be returned to the Physics Office. It is in your interests to keep Dr Fenner, Dr Daw or the individual module co-ordinators informed of absence wherever possible. This will ensure that your module attendance records in Medical Physics reflect accurately your position and that appropriate evidence is presented to the Medical Physics Examination Board where performance has been affected by medical conditions.

Books

The course book is 'Medical Physics and Biomedical Engineering', written by staff of the Department of Medical Physics and published by the Institute of Physics.

ISBN 0 7503 0367 0 (Hardback) or ISBN 0 7503 0368 9 (Paperback),

This text contains bibliographies in each chapter, and most books referenced are available in at least one of the libraries. Supplementary material is supplied in the form of module books/packs by several lecturers.

Library Facilities

In addition to the Central Library facilities and those of your home department there is a Medical Library on C Floor in the Royal Hallamshire hospital (RHH). This facility is a good source of material for project work and for detailed texts on anatomical or clinical aspects of the modules. There are a small number of Medical Physics textbooks in room I122 in the RHH for reference purposes. *These must not be removed.*

Computer Facilities

Students are encouraged to make full use of central university or home department computer facilities. There is a small cluster of computers attached to the University network in room I122 in the Medical Physics Department. These computers are intended primarily to support project work, and this usage has priority. They might also be used with a member of staff where specific assistance on taught-module work is required.

Health & Safety

When performing laboratory experiments students must follow the instructions in the laboratory manuals. A formal risk assessment should be considered an important part of any project work. It is important that students familiarise themselves with the fire regulations and procedures applicable to the Royal Hallamshire hospital. No undergraduate student is permitted to work out of hours on hospital premises unless under the direct and continuous supervision of a member of staff.

Dress & Conduct

Whenever students come into the hospital environment they must respect the fact that the NHS Department is primarily concerned with providing a service to patients. Some patients are disturbed or intimidated by large groups of young people, and you are expected to dress and to behave in a professional manner. In particular it is helpful if you can come to laboratory classes equipped to do the lab and without excessive baggage.

Student Representative

Please note the existence of an active Staff/Student Committee. Each year group elects one representative to sit on this committee. The year representative is usually drawn from the Medical Physics cohort since these students attend most modules. Representatives are encouraged to attend the committee meetings. You are encouraged to provide feedback to your representative – positive or negative – who will make your views known. Both Departments are genuinely interested in maintaining and improving the quality of its undergraduate teaching, and have a track record of positive response to student initiatives.

Student Evaluation of Modules and Courses

The Department monitors the quality of teaching by a number of mechanisms. One of the most important is the feedback from students. You will be asked to co-operate in the completion of questionnaires evaluating many aspects of the teaching of the modules that you attend. The questionnaires are completed anonymously. Additional comments are invited and can be written on the questionnaires. The information from them is collated and discussed by Teaching Committee, and raised with the staff concerned if necessary. You are encouraged to raise any issues of concern at the earliest opportunity, either through your Staff/Student Committee representative, directly with the module co-ordinator, Dr John Fenner or Dr Ed Daw.

Workloads

The Medical Physics Teaching Committee, (responsibility for teaching matters), offers the following guidelines on the contact and personal study hours associated with a taught module. Generally the contact hours can be expected to reduce, and personal study time increase as the student progresses from level one through to level three. In total a student should devote approximately six hours study per week to each ten credit half module. The Staff/Student Committee is just one vehicle by which students can voice concerns about workload. Such information helps to regulate workloads across Medical Physics as a whole so that they remain consistent with targets.

Careers Guidance and Advice

Medical Physics staff are happy to offer advice on careers in and around the Medical Physics discipline. It is particularly important for Physics with Medical Physics candidates with an interest in Clinical Medical Physics to understand clearly the relative merits of the three and four year programmes. The issues are complex and the choice is not an easy one. All students are encouraged to register initially for the four year programme and then to transfer to three at a later date if required.

Literature from the IPEM, including careers information, is available from www.ipem.ac.uk and Medical Physics at the Royal Hallamshire Hospital.

Students due to graduate in 2012 who are interested in the professional training posts in Clinical Medical Physics must fill in their application forms (see the Careers Service) soon after the Christmas vacation. Deadlines for applications are sometimes very tight, with forms released only a few weeks before submissions are required. It should be recognised that there is strong competition for these training posts.

IPEM (<http://www.ipem.ac.uk/>)

The professional body for Medical Physicists is the Institute of Physics and Engineering in Medicine. Those who might make a career in the discipline are encouraged to join this Institution as student members.

Monday Meetings

The Sheffield Teaching Hospitals NHS Trust has regular meetings for Graduate staff from 1:15 to 2:00pm on Monday afternoons. These meetings serve as a forum for the dissemination of information about the research activities of the Medical Physics team. It is possible to arrange, via Dr Fenner, for those with a particular interest in a topic to attend. Details of these seminars are available by e-mail from Margaret Beckett, m.beckett@sheffield.ac.uk.

Timetable for 2011-12

Semester 1 (Autumn)

	9:00-9:50	10:00-10:50	11:10-12:00	12:10-13:00	14:10-17:00	17:10-18:00
Monday						
Tuesday	<i>MPY308 Clin Eng HI – G29</i>				<i>MPY205 labs RHH OU137</i>	
Wednesday						
Thursday		<i>MPY205 Asp of Med. HI – LT D</i>				
Friday	<i>MPY308 IC – D02 MPY205 HI – SR F28</i>					

Semester 2 (Spring)

	9:00- 9:50	10:00-10:50	11:10-12:00	12:10-13:00	14:10-17:00	17:10-18:00
Monday						
Tuesday						
Wednesday		<i>MPY101 Biomech HI – LT 05</i>				
Thursday			<i>Level 3 Med Phys Tutorial</i>			
Friday				<i>MPY101 Biomech HI – LT 05</i>		