Medical Imaging (Non-Ionising)

Title:
Medical Imaging (Non-Ionising)

Module/Course Code:
TBA

Module/Course Title:
Medical Imaging (Non-Ionising)

Details of any courses replaced by this course:
The existing Medical Physics MScs in 'Radiation Physics' and 'Biomedical Engineering and Medical Imaging' previously contained a course called "Imaging". This course has been split into modules, of which this module is one. The existing course will not run in the September 2007/8 academic year.

Normal year of study:
MSc

Course level:
Postgraduate

Course value:
15 credits

Programmes in which this course is offered:
Mandatory for MScs in 'Medical Image Computing, 'Radiation Physics' and 'Biomedical Engineering and Medical Imaging'.

Prerequisites:
A Physics degree or attendance on the module 'Physics for Imaging and Therapy'.

Unsuitable for disabled?:
No

Exam Board:
Medical Physics and Bioengineering

Department teaching this course:
Medical Physics and Bioengineering

Course organiser:
Name: Dr David Atkinson
Email: D.Atkinson@ucl.ac.uk
Phone: 30201

Faculty:
Engineering Sciences

Can this course be taken as a short course?:
Not at present - please contact us if interested.

Is this course open to part-time or affiliate students?:
The course is open to part-time students of the three MScs; 'Medical Image Computing', 'Radiation Physics' and 'Biomedical Engineering and Medical Imaging'.

Availability:
The module is available only to students on the above three MScs.

Learning time:
Lectures: 22

Tutorials: 5
Site visits: 3
Report and coursework writing: 0
Independent project work: 0
Private Study: 64
Revision: 40
TOTAL: 134

Assessment:
Written exams (closed book): one (two hours); weighting 100%.
Written exams (open book): None
Oral exams or vivas: None
Written coursework: None.
Practical exams: None

Teaching load:
Lectures (incl. preparation): 60
Tutorials (incl. preparation): 10
Site visits (incl. preparation): 25
Marking of coursework: 0
Marking of exam scripts: 60
Annual revision time (e.g. revision of lecture notes and problem sheets): 20
Other annual administrative load related to this module: 20

If this course is taught in programmes with different level of award, give details.:
Not applicable

Educational aims:
This module covers the topic of imaging using non-ionising radiation and provides the basic theory behind the imaging techniques. It also includes a breakdown of the components of each imaging system, and describes the clinical applications of each method.

Course syllabus (outline):
* MRI, * Ultrasound, * Optical Imaging.

Intended learning outcomes:
Upon successful completion of this module, students will: * will have a theoretical and practical background in the use of non-ionising radiation in medical imaging.

Reading list:
A reading list for the complete MSc in Medical Image Computing will be available from the course web site at http://www.ucl.ac.uk/cmic/msc

Details of any distance learning available:
None available

Details of any offsite teaching:
There will be visits to observe medical imaging in a local clinical setting.

Starting and review dates:
Starting date: September 2007
Date of the last review: Not applicable
Date of the next review: September 2008

Other Departments to which access is required:
Not applicable

How will the course be monitored?:
Student questionnaires, peer observation of teaching, staff/student committee, and periodic reviews by the Departmental Teaching Committee

Student numbers:

20 from MSc in Medical Image Computing at steady state. 20 from MSc in Biomedical Engineering and Medical Imaging 20 from MSc in Radiation Physics.

UG/PG overlap:
None

Assessment at different levels:
N/A

Is this course taught by more than one Department? If so, give details.:
Not applicable

Proportion of teaching in other departments:
None

Additional costs to students:
None

Additional resources:
None

Setup costs:
Set up costs are covered by EPSRC CTA funding.

Knowledge:
* Medical Imaging using non-ionising radiation.

Knowledge teaching methods:
Specialist knowledge is acquired through a combination of lectures, demonstrations, laboratory classes, computer based tasks, independent study and case studies.

Knowledge assessment methods:
Examination.

Intellectual skills:
* The ability to analyse a problem and use appropriate scientific and professional tools to solve it. * The ability to evaluate and confront different methodologies of problem solving, development and design, develop critiques of them and propose alternative avenues where appropriate. * The ability to understand and analyse information and image data. * Creativity and independence of judgement.

Intellectual skills teaching methods:
Intellectual skills are taught at the same time as specialist knowledge, using the same teaching methods.

Intellectual skills assessment methods:
Intellectual skills are assessed at the same time as specialist knowledge, using the same assessment method.

Practical skills:
* Know-how regarding the operation of MRI and ultrasound scanners.

Practical skills teaching methods:
Practical skills are learnt through observation of a professional operating equipment.

Practical skills assessment methods:
Practical skills are not formally assessed.

Transferable skills:
* The ability to use information technology effectively.

Transferable skills teaching methods:
Transferable skills are taught at the same time as specialist knowledge, using the same teaching methods.

Transferable skills assessment methods:

Transferable skills are assessed at the same time as specialist knowledge, using the same assessment method.

Amendments:
None.

Departmental approval:
Name:
Position:
Date:

External approval:
Name:
Position:
Date:

Faculty approval:
Name:
Position:
Date:

College approval:
Name:
Position:
Date:

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