

Computing and Statistics in Medicine

Title:

Computing and Statistics in Medicine

Module/Course Code:

TBA

Module/Course Title:

Computing and Statistics in Medicine

Details of any courses replaced by this course:

This new module uses some material previously taught on the MScs in Radiation Physics, and, Biomedical Engineering and Medical Imaging.

Normal year of study:

MSc

Course level:

Postgraduate

Course value:

15 credits

Programmes in which this course is offered:

Mandatory for the three MScs, Medical Image Computing, Radiation Physics, and, Biomedical Engineering and Medical Imaging.

Prerequisites:

None.

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 following 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: 0

Laboratory classes: 3
Report, coursework writing and programming: 0
Independent project work: 0
Private Study: 65
Revision: 60
TOTAL: 150

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): 0
Laboratory classes (incl. preparation): 10
Marking of coursework: 0
Marking of exam scripts: 60
Annual revision time (e.g. revision of lecture notes and problem sheets): 10
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:

* To provide students with the fundamentals of the subjects in the syllabus.

Course syllabus (outline):

* Image Processing. * Computing and Medical Infomatics. * Statistics, probability and error propagation. * Signal Processing.

Intended learning outcomes:

Upon successful completion of this module, students will: * know the basics of image processing. * be able to perform simple image processing tasks. * know the basics concerning computing and medical infomatics, * know the basics of statistics in medical imaging, * know the basics of signal processing.

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/cmhc/msc>

Details of any distance learning available:

None available

Details of any offsite teaching:

None available

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:

60. 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.:

No

Proportion of teaching in other departments:

Not applicable

Additional costs to students:

None

Additional resources:

None

Setup costs:

Set up costs are covered by EPSRC CTA funding.

Knowledge:

* Image processing related to medical imaging. * Computing and Medical Informatics. * Statistics, probability and error propagation. * Signal Processing.

Knowledge teaching methods:

Specialist knowledge is acquired through a combination of lectures, demonstrations and independent study.

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 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:

* The ability to process images.

Practical skills teaching methods:

Practical skills are an integral part of this module. They will be taught in laboratory classes and by independent learning.

Practical skills assessment methods:

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

Transferable skills:

* The ability to use information technology effectively. * The ability to learn computer languages.

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:

[\[Home\]](#) [\[Up\]](#)