Foundations of Anatomy and Scientific Computing

Title:
Foundations of Anatomy and Scientific Computing

Module/Course Code:
TBA

Module/Course Title:
Foundations of Anatomy and Scientific Computing

Details of any courses replaced by this course:
The Anatomy and Physiology section of this module is an existing course provided by the Anatomy department to the current Medical Physics MScs.

Normal year of study:
MSc

Course level:
Postgraduate

Course value:
15 credits

Programmes in which this course is offered:
Mandatory for MSc Medical Image Computing. The Scientific Computing section of the module will also be taken as a core course by MSc 'Vision, Imaging and Virtual Environments' students.

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 MSc in Medical Image Computing.

Availability:
The module is available only to students on the following MSc programmes; 'Medical Image Computing' and 'Vision, Imaging and Virtual Environments' in the Engineering Faculty.

Learning time:
Lectures and dissecting room practicals (anatomy): 18
Lectures and tutorials (scientific computing): 12

Laboratory classes: 0
Coursework writing and programming tasks: 60
Independent project work: 0
Private Study: 60
Revision: 0
TOTAL:150

Assessment:
Written exams (closed book): None
Written exams (open book): None
Oral exams or vivas: None
Written coursework: weighting 50% anatomy, 50% scientific computing.
Practical exams: None

Teaching load:
Lectures (incl. preparation): 60
Tutorials (incl. preparation): 10
Laboratory classes (incl. preparation): 0
Marking of coursework: 25
Marking of exam scripts: 0
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 a knowledge of human anatomy and physiology. * To provide students with a knowledge and understanding of scientific computing.

Course syllabus (outline):
* Anatomy and Physiology, including visits to dissecting rooms. * Scientific Computing, including Linear Algebra, Eigenvalues and SVD, Optimisation methods.

Intended learning outcomes:
Upon successful completion of this module, students will: * know the fundamentals of human anatomy and physiology, * know the fundamentals of scientific computing, * be able to solve some Linear Algebra and Optimisation tasks on a computer using a high level language such as MATLAB.

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:
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:
Anatomy.

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 for this specific module from MSc in Medical Image Computing at steady state. (Note the Scientific Computing section will also be taken by MSc VIVE students and the Anatomy section by the two MScs Radiation Physics, and, Biomedical Engineering and Medical Imaging.)

UG/PG overlap:
None

Assessment at different levels:
N/A

Is this course taught by more than one Department? If so, give details.:
Yes. The Anatomy and Physiology course is taught in the Anatomy Department.

Proportion of teaching in other departments:
Approximately 50% in the Anatomy Department.

Additional costs to students:
None

Additional resources:
None

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

Knowledge:
* Human Anatomy and Physiology. * Scientific Computing.

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

Knowledge assessment methods:
Coursework.

Intellectual skills:
* The ability to analyse a problem and use appropriate scientific and professional tools to solve it.

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 use of a scientific computing package such as MATLAB.

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

Practical skills assessment methods:
Practical skills are assessed through coursework.

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