Continuum Mechanics in Biology and Medicine

LMS-EPSRC Short Course

UCL
17-22 June 2012

Organisers:

Nick Ovenden & Frank Smith

Course outline

There is a continuing upsurge of research in the area of mathematical biology and medicine, principally due to technological advancements in imaging and treatment along with increased computational power. This upsurge, however, relies to some extent on a great deal of fascinating mathematics, some of which this course aims to present in a clear and concise manner for the benefit of postgraduate students and early-stage researchers.

The specific focus of the lectures is on continuum mechanics in biology and medicine, with mathematical modelling, problem construction and analysis together forming the main thrust of the course. A variety of problems from different areas will be discussed providing breadth of understanding for the students as well as increased depth of experience in medical modelling. The mathematical tools highlighted include both novel techniques within the lecturers' very own up-to-date hot research topics alongside broader subjects that are beneficial for the course attendees. The course aims to cater for applied mathematics, engineering and physical science students and researchers possessing a diverse range of biological and medical research interests involving continuum mechanics.

The three main lecture course topics are:

- *Modelling the Circulation* (**Nick Hill**, Glasgow)
- *Physiological Fluid Mechanics* (**Sarah Waters**, Oxford)
- *Cardiovascular Fluid-Mechanical Frameworks* (**Nic Smith**, King's College London)

These lecture courses will be supplemented by tutorial sessions.

An introductory module on *Principles of Fluid Dynamics* will be given by **Nick Ovenden** (UCL)

A guest lecture will be given by **Tim Pedley** (University of Cambridge).

For further information please visit: http://www.ucl.ac.uk/medical-modelling/shortcourse

Applications: Applications should be made using the registration form available via the Society's website at: **www.lms.ac.uk/content/short-instructional-courses**. Research students, post-docs and those working in industry are invited to apply.

The closing date for applications is **Monday 7 May 2012.** Numbers will be limited and those interested are advised to make an early application.

All applicants will be contacted within two weeks after the deadline; information about individual applications will not be available before then

In the event of over-subscription preference will be given to UK-based research students

Fees

- All research students registered at a UK university will be charged a registration fee of **£100**. **There will be no charge for subsistence costs**.
- UK-based postdocs will be charged a registration fee of £250, plus half the subsistence costs (£250) **£500** in total.
- All others (overseas students and postdocs, those working in industry) will be charged a registration fee of £250 plus the full subsistence costs (£500) **£750** in total.

LMS-EPSRC Short Courses *aim to provide training for postgraduate students in core areas of mathematics. Part of their success is the opportunity for students to meet other students working in related areas as well as the chance to meet a number of leading experts in the topic.*

All participants must pay their own travel costs (for EPSRC funded students, this should be covered by their DTA). Fees are not payable until a place on the course is offered but will be due by Friday 8 June.

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