NATURAL SCIENCES TRIPOS, PART IA

MICHAELMAS 2010 **LENT 2011** **EASTER 2011**

BIOLOGY OF CELLS

Course Organiser: Prof. H. Skaer (email: iacells@mole.bio.cam.ac.uk) (Secretary: Rachel Aucott, tel. 769017)
Course Website: www.bio.cam.ac.uk/teaching/cells

All lectures take place in the *Babbage Lecture Theatre, New Museums Site* on M. W. F. 10

PROF. H. SKAER
The Living Cell. (Four lectures, beginning 8 Oct.)
DR H. R. MOTT
Macromolecules in the Cell. (Five lectures, beginning 18 Oct.)
DR J. M. DAVIES
Membranes: Molecular Superstructures. (Five lectures, beginning 29 Oct.)
DR D. HANKE AND DR J. GRIFFIN
The Chemistry of Life. (Ten lectures, beginning 10 Nov.)

DR D. K. SUMMERS
Hunting the Gene. (Seven lectures, beginning 21 Jan.)
DR M. WELCH
Genes in Action. (Six lectures, beginning 7 Feb.)
DR S. RUSSELL
The Genetic Revolution. (Six lectures, beginning 21 Feb.)
PROF. R. A. LASKEY
Cell Proliferation. (Five lectures, beginning 7 Mar.)

PROF. M. BATE
Development. (Six lectures, beginning 29 Apr.)
DR A. WEBB
Cell Signalling. (Six lectures, beginning 13 May)

Practical work takes place in the *Elementary Laboratory* in the Department of Zoology at 11–1 and 2–4 on M. *or* W. *or* F. For those doing Earth Sciences, practical times are 12–1 and 2–5; and for those doing Materials Science times are 11–12 and 2–5.

CHEMISTRY

Course Organiser: Dr J. H. Keeler (email: jhk10@cam.ac.uk)
Course Website: www-teach.ch.cam.ac.uk

All lectures will be given in the *Bristol-Myers Squibb Lecture Theatre, Department of Chemistry, Lensfield Road* on Tu. Th. S. 10

DR P. D. WOTHERS
Shapes and Structures of Molecules. (Nineteen lectures)
DR W. P. NOLAN
Reactions and Mechanisms in Organic Chemistry. (Five lectures)

DR W. P. NOLAN
Reactions and Mechanisms in Organic Chemistry. (Nine lectures, continued)
DR J. H. KEELER
Energetics and Equilibria. (Nine lectures)
PROF. J. A. PYLE
Kinetics of Reactions. (Six lectures)

DR N. BAMPOS
Chemistry of the Elements. (Twelve lectures)

Practical Chemistry: Weekdays 1100–1300 and 1400–1700. Students will be assigned (via the on-line system) attendance on the morning and afternoon periods of one particular day in either odd weeks (beginning Th. 7 Oct.) or even weeks (beginning Th. 14 Oct.) of the Michaelmas Term. Students should come to the *Department of Chemistry, Lensfield Road*, between 0830 and 1630 on Tu. 5 Oct. to collect course materials (handouts, practical class manuals etc).

COMPUTER SCIENCE

Course Organiser: Dr M. G. Kuhn (email: Markus.Kuhn@cl.cam.ac.uk)
Course Website: www.cl.cam.ac.uk/teaching

Lectures are held in *Arts School Room A, Bene't Street*, on M. W. F. 10, unless otherwise stated

DR M. G. KUHN, DR F. H. KING AND MISS C. H. NORTHEAST
Registration. Th. 11 (One lecture) *or* Th. 12 (One lecture, for those unable to attend at 11)
DR S. M. HAND
Computer Fundamentals. (Six lectures)
DR M. O. MYREEN
Foundations of Computer Science. (Fifteen lectures, beginning 22 Oct.)
DR S. STATON
Discrete Mathematics I. (Three lectures, beginning 26 Nov.)

DR S. STATON
Discrete Mathematics I continued. (Six lectures)
DR R. K. HARLE
Object-Oriented Programming. (Nine lectures, beginning 4 Feb.)
DR D. J. GREAVES
Floating-Point Computation. (Six lectures, beginning 25 Feb.)

DR F. M. STAJANO
Algorithms I.
DR F. H. KING
Examination Briefing. M. 12 (One lecture, 23 May) *Hopkinson Lecture Room, New Museums Site*

Practical work takes place on Thursdays at 2–6, starting at 2pm on 7 October in *Lecture Theatre 1, William Gates Building, JJ Thomson Avenue.*
The first session will begin with an Introduction to Computer Science from Professor A. Hopper, Head of Department.
During the afternoon of 7 October, students will be registered for their practical classes, and detailed arrangements for the rest of the year will be explained.

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NATURAL SCIENCES TRIPOS, PART IA (continued)

MICHAELMAS 2010 **LENT 2011** **EASTER 2011**

ELEMENTARY MATHEMATICS FOR BIOLOGISTS

Course Organiser: Dr R. W. Broadhurst email: rwb1002@cam.ac.uk
Course Website: www.phar.cam.ac.uk/teaching/EMB/

Elementary Mathematics for Biologists is intended for students who do not have A-level Mathematics.

Lectures will be given at 9 a.m. in the *Lecture Theatre A, Arts School, Bene't Street*

DR J. KOENIG
Introduction. (One lecture, 8 Oct.) F.
DR J. KOENIG
Algebra, Units and Graphs. (Three lectures, 13–27 Oct.) W.
DR D. J. TOLHURST
Trigonometry, Oscillations and Waves. (Three lectures, 29 Oct.–5 Nov.) M. F.
PROF. P. A. MCNAUGHTON
Logarithms and Raising to Powers. (Two lectures, 8–12 Nov.) M. F.
DR R. W. BROADHURST
Calculus I. (Five lectures, 15–29 Nov.) M. F.

DR B. BECKLES
Introduction to Computing and Excel. (Five sessions) (11–25 Oct.) M. F. 8.30–10 *Titan Rooms 1 and 2, New Museums Site*
THE LECTURERS
Examples classes (Five classes, 3 Nov.–1 Dec.) W. 9 *Large Classroom, Department of Pharmacology*

DR R. W. BROADHURST
Calculus II. (Six lectures, 21 Jan.–7 Feb.) M. F.
DR J. W. DALLEY
Statistics. (Ten lectures, 11 Feb.–14 Mar.) M. F.

THE LECTURERS
Examples classes (Eight classes, 26 Jan.–16 Mar.) W. 9 *Large Classroom, Department of Pharmacology*

LECTURER TO BE CONFIRMED
Curve Fitting. (Two lectures, 29 Apr.–2 May) M. F.
PROF. P. A. MCNAUGHTON
Frequency Analysis. (Two lectures, 6 May–9 May) M. F.
THE LECTURERS
Revision lectures. (Three lectures, 13–20 May) M. F.

THE LECTURERS
Examples classes (Two classes, 4, 11 May) W. 8.30–10 *PWF facility, Titan Rooms*; (Two classes, 18, 25 May) W. 9 *Large Classroom, Department of Pharmacology*

Examples classes: Two of the exercises in each of the Michaelmas and Lent terms and one from the Easter term will be assessed with marks counting towards the examination.

EVOLUTION AND BEHAVIOUR

Course Organiser: Dr K. M. V. Bennett (email: kmvb2@cam.ac.uk)
Course Website: www.plantsci.cam.ac.uk/teaching/eandb/

All lectures are held on Tu. Th. S. at 11 in the *Main Lecture Theatre, Department of Zoology*

DR W. A. FOSTER
Introduction to Evolutionary Biology. (Four lectures, 7–14 Oct.)
DR J. WELCH
Evolutionary Genetics. (Eight lectures, 16 Oct.–2 Nov.)
PROF. C. HOWE
Early Events in Evolution. (Three lectures, 4–9 Nov.)
PROF. J. PARKER
The Origin and Evolution of Plants. (Five lectures, 11–20 Nov.)
DR B. J. GLOVER
Diversification of Angiosperms. (Four lectures, 23–30 Nov.)

PROF. M. AKAM
The Organisation of Animal Diversity. (Six lectures, 20 Jan.–1 Feb.)
DR R. S. K. BARNES
Major Changes and Major Constraints in Animal Evolution. (Six lectures, 3–15 Feb.)
PROF. N. CLAYTON, PROF. E. B. KEVERNE AND PROF. A. DICKINSON
Evolution of Behaviour. (Twelve lectures, 17 Feb.–15 Mar.)

PROF. W. MCGREW, PROF. N. CLAYTON, DR M. LAHR AND PROF. S. BARON-COHEN
Primate and Human Evolution and Behaviour. (Twelve lectures, 28 Apr.–24 May)

Practical work: M. 12–5 (alternate weeks) or Tu. 12–5 (alternate weeks) *Department of Zoology.* Students will be registered electronically for all practical courses.

EARTH SCIENCES

Course Co-ordinator: Dr M. Holness email: marian@esc.cam.ac.uk
Course Website: https://camtools.caret.cam.ac.uk/ and http://www.esc.cam.ac.uk/teaching/geological-sciences

All lectures are given in the *Physiology Lecture Room, adjacent to the Department of Earth Sciences*, on M. W. F. 11

PROF. J. A. JACKSON
Earth as a Planet (Eight lectures)
DR R. J. HARRISON
What the Earth is made of (Six lectures)
DR M. HOLNESS
From minerals to rocks: how the crust works (Six lectures)
PROF. J. A. JACKSON
Geodynamics: the Earth and other planets (Four lectures)

DR N. H. WOODCOCK
Sedimentary Processes and Products (Six lectures)
PROF. D. HODELL
The Earth's Climate System (Five lectures)
PROF. S. CONWAY MORRIS
Palaeobiology (Twelve lectures)
DR N. H. WOODCOCK
Introduction to Geology of Arran (One Lecture)

Field Course in Arran
Party A. 17–25 March
Party B. 24–1 April
Party C. 31 March–8 April

DR N. H. WOODCOCK
Britain's Geology: solving the jigsaw. (Five lectures)
PROF. J. A. JACKSON AND PROF. S. CONWAY MORRIS
Planet Earth: The bigger picture. (Seven lectures)

Practical work: There are three one-hour practicals to be taken per week: students choose one from each set (Set 1: F. 12, S. 10, M. 9, M. 10; Set 2: M. 12, Tu. 10, W. 9, W. 10; Set 3: W. 12, Th. 10, F. 9, F. 10), starting Friday 8 Oct. at 12 noon.

Long Vacation Course: A course on Geological Field Methods will be given 19–29 September 2011 for students intending to take a geological subject in Part IB.

NATURAL SCIENCES TRIPOS, PART IA (continued)

MICHAELMAS 2010 **LENT 2011** **EASTER 2011**

MATERIALS SCIENCE

Course Organiser: Dr N. A. Rutter (email: PartIa@msm.cam.ac.uk)
Course website: http://www.msm.cam.ac.uk/teaching/

This course is offered by the Department of Materials Science and Metallurgy.

All lectures are held in the *Main Lecture Theatre, Department of Zoology* on M. W. F. 12

PROF. P. A. MIDGLEY
Atomic Structure of Materials. (Twelve lectures)
DR Z. H. BARBER
Materials for Devices. (Twelve lectures)

DR N. A. RUTTER
Microstructure. (Twelve lectures)
PROF. T. W. CLYNE
Mechanical Behaviour of Materials. (Twelve lectures)

DR N. A. RUTTER
Biomaterials. (Six lectures)
PROF. A. L. GREER
Materials under Extreme Conditions. (Six lectures)

Practical work: Two two–hour periods each week, one to be taken on Th. 11–1, F. 10–12, F. 2–4 *or* M. 10–12 and the other on M. 2–4, Tu. 11–1, W. 10–12 *or* W. 2–4;, starting Thursday, 7 Oct. at 11 a.m. Students will be registered electronically for all practical courses.

MATHEMATICS

Course Organiser: (email: nst@maths.cam.ac.uk)
Course Website: www.maths.cam.ac.uk/undergrad/NST

All lectures are held on Tu. Th. S. and will start at 9 a.m. promptly unless otherwise stated.

Course A

PROF. N. PEAKE
Mathematics I. *Bristol Myers Squibb Lecture Theatre, Chemical Laboratory, Lensfield Road*

PROFS. M. T. DOVE AND E. ARTACHO
Scientific Computing. Th. 11 (Six lectures, beginning 14 Oct.) *Mill Lane Room 3* W. 11 (Six lectures, beginning 20 Oct.) *Chemical Laboratory, Lensfield Road*

DR S. B. DALZIEL
Mathematics II. *Bristol Myers Squibb Lecture Theatre, Chemical Laboratory, Lensfield Road*

DR L. J. JARDINE -WRIGHT
Mathematics III. (Twelve lectures) *Bristol Myers Squibb Lecture Theatre, Chemical Laboratory, Lensfield Road*

Course B

DR A. D. CHALLINOR
Mathematics I. *Arts School, Room A, Bene't Street*

PROFS. M. T. DOVE AND E. ARTACHO
Scientific Computing. Th. 11 (Six lectures, beginning 14 Oct.) *Mill Lane Room 3* W. 11 (Six lectures, beginning 20 Oct.) *Chemical Laboratory, Lensfield Road*

DR G. I. OGILVIE
Mathematics II. *Arts School, Room A, Bene't Street*

PROF. J. C. B. PAPALOIZOU
Mathematics III. (Twelve lectures) *Arts School, Room A, Bene't Street*

PHYSICS

Departmental Contact: Helen Marshall, email: IA-physics@phy.cam.ac.uk
Course Website: www.phy.cam.ac.uk/teaching/

All lectures are on M. W. F. at 9
All lectures take place in the *Bristol Myers Squibb Lecture Theatre, Chemical Laboratory, Lensfield Road.*

DR J. M. RILEY
Mechanics (Twelve lectures)
DR G. A. C. JONES
Oscillating Systems (Twelve lectures, beginning 5 Nov.)

PROF. A. M. DONALD
Waves and Quantum Waves (Twelve lectures)
DR P. J. DUFFETT-SMITH
Special Relativity and Rotational Mechanics (Twelve lectures, beginning 18 Feb.)

DR R. E. ANSORGE
Gravitational and Electromagnetic Fields (Twelve lectures)

Laboratory Work

DR J. M. RILEY, DR D. A. GREEN AND OTHERS
Experimental Physics. M. *or* Tu. *or* Th. *or* F. 2–5.45
Students attend one afternoon every fortnight.

DR J. M. RILEY, DR D. A. GREEN AND OTHERS
The same continued.

DR J. M. RILEY, DR D. A. GREEN AND OTHERS
The same continued.

Laboratory Work takes place at the *Cavendish Laboratory (West Cambridge).* All students must attend an introductory talk and register for **Laboratory Work** at 11.30 a.m. on W. 6 Oct. at the *Cavendish Laboratory*. The Laboratory may be approached by the Madingley Road, or via the Coton cycle and footpath. For cyclists and pedestrians the latter is strongly recommended. **Laboratory work is continuously assessed**.

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NATURAL SCIENCES TRIPOS, PART IA (continued)

MICHAELMAS 2010 **LENT 2011** **EASTER 2011**

PHYSIOLOGY OF ORGANISMS

Course Organiser: Dr Keith Johnstone (physorg@plantsci.cam.ac.uk)
Course websites: http://www.plantsci.cam.ac.uk/teaching/poo https://camtools.cam.ac.uk/

All lectures take place in the *Physiology Main Lecture Theatre* on Tu. Th. S. 12.

DR MATTHEW J. MASON
An Introduction to Physiology. (Three lectures, 7–12 Oct.)
DR D. J. TOLHURST
Nerves, Synapses and Sense Organs. (Five lectures, 14–23 Oct.)
DR H. P. C. ROBINSON
Structure and Function of Muscle. (Three lectures, 26–30 Oct.)
DR D. A. GIUSSANI
Cardiovascular Physiology. (Three lectures, 2–6 Nov.)
DR S. O. SAGE
Osmoregulation in Animals. (Four lectures, 9–16 Nov.)
DR MICHAEL J. MASON
Animal O_2 Acquisition and Respiration. (Three lectures, 18–23 Nov.)
DR D. J. TOLHURST
Animal Nutrient Acquisition. (Three lectures, 25–30 Nov.)

Practical Work W. or F. 12–1 and 2–5
The same continued.

DR MATTHEW J. MASON
Homeostasis. (Five lectures, 20–29 Jan.)
DR D. E. HANKE
Plant Physiology: an Introduction. (Four lectures, 1–8 Feb.)
DR B. J. GLOVER
Plant Hormones. (Four lectures, 10–17 Feb.)
PROF. H. GRIFFITHS
Plant Adaptations and Interactions. (Five lectures, 19 Feb.–1 Mar.)
DR J. P. CARR
Physiology of Plant – Microbe Interactions. (Six lectures, 3–15 Mar.)

The same continued.

DR A. J. MURRAY
Energy and Temperature Balance. (Four lectures, 28 Apr.–5 May)
DR G. P. S SUTTON
Comparative Physiology: Form and Function. (Six lectures, 7–19 May)
DR C. SCHWIENING AND DR J. M. HIBBERD
Comparing the Physiology of Plants and Animals. (Seminar, 21 May)

The same continued.

Practical Work: Students should register electronically for all biological practical courses.

MATHEMATICAL BIOLOGY

Course Organiser: Dr N. J. Cunniffe: (email: njc1001@cam.ac.uk)
Course websites: http://www.plantsci.cam.ac.uk/teaching/mbl

Mathematical Biology is intended for those students who have studied Mathematics at GCE A-level or its equivalent. It does not provide a qualification for offering Mathematics in Part IB of the Natural Sciences Tripos.

Lectures will be held in the *Main Lecture Theatre, Department of Zoology*, Tu. Th. S. 9

DR N. J. CUNNIFFE
Modelling the Growth and Decline of Populations. (Seventeen lectures, 7 Oct.–13 Nov.)
DR C. R. WEBB
Physiological Modelling. (Seven lectures, 16–30 Nov.)

MR J. J. TRAPP
Modelling Interacting Populations. (Eleven lectures, 20 Jan.–12 Feb.)
DR R. A. JOHNSTONE AND DR A. MANICA
Statistical Methods. (Thirteen Lectures, 15 Feb.–15 Mar.)

DR N. J. CUNNIFFE
Matrix Algebra. (Seven lectures, 28 Apr.–12 May)
DR C. A. RUSSELL
Ecological Modelling. (Five lectures, 14–24 May)

Computer practicals and examples classes: Th. 2–3.15, 3.30–4.45 *or* 4.45–6 in the *Titan Teaching Room, New Museum Site*, unless otherwise stated.

Practical Work: Students will be registered electronically for all practical courses.