NATURAL SCIENCES TRIPOS, PART IA (continued) AND PART IB

MICHAELMAS 2009 **LENT 2010** **EASTER 2010**

MATHEMATICAL BIOLOGY

Course Organiser: Dr N. Cunniffe: (email: njc1001@cam.ac.uk)

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. CUNNIFFE
Introduction to the Growth and Decline of Populations. (Fifteen lectures, 8 Oct.–10 Nov.)
DR J. KOENIG
Physiological Modelling. (Nine lectures, 12–1 Dec.)

MR J. J. TRAPP
Introduction to Modelling of Interacting Populations. (Eleven lectures, 14 Jan.–6 Feb.)
DR R. JOHNSTONE AND DR A. MANICA
Introduction to Statistical Methods. (Thirteen Lectures, 9 Feb.–9 Mar.)

DR L. PALLA
Matrix algebra. (Six lectures, 22 Apr.–4 May)
DR C. RUSSELL
Interacting Populations: Ecological Applications. (Six lectures, 6–18 May)

Computer practicals and Examples classes in the *Titan Teaching Room, New Museum Site*, unless otherwise stated.

Examples classes and Computer Practicals: Th. 2–3.15, 3.30–4.45 *or* 4.45–6

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

PART IB

ANIMAL BIOLOGY

Course Organiser: Dr B. Hedwig (email: bh202@cam.ac.uk)
Course website: http://www.zoo.cam.ac.uk/degree/AB.html

All lectures take place in the *Main Lecture Theatre, Department of Zoology* at M. W. F. 11

All practicals take place in the *Elementary Laboratory, Department of Zoology*

PROF. N. B. DAVIES AND DR R. M. KILNER
Behaviour and Ecology. (Twelve lectures beginning 9 Oct.)
DR B. HEDWIG AND PROF. M. BURROWS
Brains and Behaviour. (Twelve lectures, beginning 6 Nov.)

DR W. FEDERLE, DR E. TURNER AND DR F. ELLWOOD
Adaptation and Evolution: Insect Biology. (Twelve lectures, beginning 15 Jan.)
PROF. J. A. CLACK AND DR R. ASHER
Adaptation and Evolution: Vertebrate Evolutionary Biology. (Twelve lectures, beginning 12 Feb.)

DR R. A. JOHNSTONE AND DR N. I. MUNDY
Evolutionary Principles. (Twelve lectures, beginning 21 Apr.)
Note the early start of this course.

Practical work: Students will be expected to do four hours practical work per fortnight between 12 and 5 on Wednesdays *or* Thursdays. All practicals take place in the *Elementary Laboratory, Department of Zoology.* Students should register for all biological practical courses on W. 7 Oct. between 11.00 and 12.15 in *the Senate House*.

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NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2009 **LENT 2010** **EASTER 2010**

BIOCHEMISTRY AND MOLECULAR BIOLOGY

Course Organiser: Dr T. R. Hesketh (email: t.r.hesketh@bioc.cam.ac.uk)
Course Website: http://www.bioc.cam.ac.uk/teaching/BMB/

Note that some lectures begin earlier in Term, and end later in Term, than is usual. This is to allow more time between the end of the course and the examinations. Dr Hesketh will introduce the course as part of the first lecture on F. 9 Oct.

Lectures are given in the *Lecture Theatre of the Sanger Building, Department of Biochemistry, Old Addenbrooke's Site* on M. W. F. at 10.

Genes and proteins: macromolecules in action

PROF. C. J. HOWE
Gene Cloning and Manipulation. (Five lectures, 9–19 Oct.)
PROF. DAME JEAN THOMAS
Control of Gene Expression: DNA Structure and DNA-Protein Interactions. (Five lectures, 21–30 Oct.)
PROF. C. W. J. SMITH
Control of Gene Expression: Transcription, RNA Processing and Translation. (Five lectures, 2–11 Nov.)
PROF. SIR TOM BLUNDELL
Protein Structure, Flexibility and Function. (Five lectures, 13–23 Nov.)
PROF. P. F. LEADLAY
Enzyme Catalysis and Protein Engineering. (Five lectures, 25 Nov.– 4 Dec.)

Energy transduction, cell signalling and cell proliferation

DR G. C. BROWN
Energy Transduction in Bacteria, Mitochondria and Chloroplasts. (Six lectures, 13–25 Jan.)
Note the early start of this course.
PROF. K. M. BRINDLE
Control of Metabolism. (Six lectures, 27 Jan.–8 Feb.)
PROF. R. W. FARNDALE
Transmembrane Signalling; Molecules and Mechanisms. (Six lectures, 10–22 Feb.)
DR D. M. CARRINGTON
Control of Eukaryotic Cell Growth. (Four lectures, 24 Feb.–3 Mar.)
DR T. R. HESKETH
Oncogenes, Tumour Suppressor Genes, and Cancer (Four lectures, 5–12 Mar.)

Biochemistry of microorganisms

DR M. WELCH
Bacterial Chemotaxis. (Three lectures, 21–26 Apr.)
Note the early start of this course.
PROF. P. G. C. SALMOND
Bacterial Signalling and Secretion Systems. (Two lectures, 28–30 Apr.)
DR D. M. CARRINGTON
Molecular Biology of Protozoa. (Four lectures, 3–10 May)

Practical work: Practicals are given at the *Hopkins Building, Department of Biochemistry, Downing Site* four hours from 11 a.m. on M. Tu. W. Th. or F. Students should register for all biological practical courses on W. 7 Oct. between 11.00 and 12.15 in *the Senate House*.

CELL AND DEVELOPMENTAL BIOLOGY

Course Organiser**:** Prof. A. G. Smith. (email: alison.smith@plantsci.cam.ac.uk)
Course Website: www.bio.cam.ac.uk/teaching/cdb/index.html

All lectures take place in the *Biffen Lecture Theatre, Department of Genetics,* on Th. S. Tu. 10, unless otherwise stated.

DR C. GREEN AND PROF. S. P. JACKSON
Molecular Biology of the Cell Nucleus. (Nine lectures, 8–27 Oct.)
DR P. OLIVER
Genetic Systems of Prokaryotes. (Six lectures, 29 Oct.–10 Nov.)
DR D. MACDONALD
Molecular Genetics of Yeast Cells. (Four lectures, 12–17 Nov., and 1 Dec.)
DR C. J. O'KANE
Genome Organisation and Genomics. (Five lectures, 19–28 Nov.)

PROF. A. G. SMITH
Organelle Biogenesis. (Six lectures, 12–23 Jan.)
PROF. D. M. GLOVER
Cytoskeleton. (Four lectures, 26 Jan.–2 Feb.)
DR M. SEAMAN
Membrane Traffic. (Four lectures, 4–11 Feb.)
DR A. WEBB
Photoperiodism (Two lectures, 13–16 Feb.)
DR H. BAYLIS
Intercellular Communication. (Two lectures, 18–20 Feb.)
DR H. SKAER
Development I. (Four lectures, 23 Feb.–2 Mar.)
DR A. PHILPOTT
Development II. (Four lectures, 4–11 Mar.)
Note the early start of this course

DR H. SKAER
Development III. (Four lectures, 20–27 April)
DR J. HASELOFF
Development IV. (Six lectures, 29 Apr.–11 May)

Note the early start of this course

Practical work will take place in the *Department of Zoology*. Students are expected to do up to four hours practical work per week between 11 a.m. and 5 p.m. on Tuesdays or Fridays. Practical classes start at several different times to allow students to attend lectures in other subjects. Students should register for all biological practical courses on W. 7 Oct. between 11.00 and 12.15 in *the Senate House*.

NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2009 **LENT 2010** **EASTER 2010**

CHEMISTRY A

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 *Wolfson Lecture Theatre, Department of Chemistry, Lensfield Road*, on Tu. Th. S. 12 unless indicated.

DR M. A. MILLER
Introduction to Quantum Mechanics. (Twelve lectures)
DR P. D. WOTHERS
Molecular Spectroscopy. (Six lectures)
PROF. D. J. WALES
Symmetry and Bonding. (Six lectures)

PROF. D. J. WALES
Symmetry and Bonding. (Six lectures, continued)
DR J. H. KEELER
Molecular Energy Levels and Thermodynamics. (Fourteen lectures)
PROF. S. R. ELLIOTT AND PROF. R. M. LAMBERT
Electronic Structure and Properties of Solids. (Four lectures)

PROF. S. R. ELLIOTT AND DR S. J. JENKINS
Electronic Structure and Properties of Solids. (Eleven lectures, continued)

Practical Chemistry. Michaelmas and Lent Terms weekdays 1345–1700. Students must register in the *Department of Chemistry, Lensfield Road*, between 0900 and 1300 or 1400 and 1600 on Tu. 6 Oct., when they will be assigned attendance in the afternoon of a particular day of the week for Chemistry A. All students must attend an introductory talk concerning the Chemistry A practical course on W. 7 Oct. at 1045 in the *Bristol-Myers Squibb Lecture Theatre.*

CHEMISTRY B

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 *Wolfson Lecture Theatre, Department of Chemistry, Lensfield Road*, on Tu. Th. S. 9 unless indicated.

DR W. P. NOLAN AND DR I. R. BAXENDALE
Key Organic Reactions. (Twelve lectures)
DR N. BAMPOS
Structure Determination. (Six lectures)
DR S. R. BOSS
Coordination Chemistry. (Six lectures)

DR S. R. BOSS
Coordination Chemistry. (Two lectures, continued)
DR P. D. BARKER
Organometallic Chemistry. (Six lectures)
DR A. E. H. WHEATLEY
Inorganic Ring Chemistry. (Six lectures)
DR P. D. WOTHERS AND DR J. M. GOODMAN
Shape and Organic Reactivity. (Ten lectures)

DR F. J. LEEPER AND PROF. C. ABELL
Introduction to Chemical Biology. (Eleven lectures)

Practical Chemistry. Michaelmas and Lent Terms weekdays 1345–1800. Students must register in the *Department of Chemistry, Lensfield Road* between 0900 and 1300 or 1400 and 1600 on Tu. 6 Oct., when they will be assigned attendance in the afternoon of a particular day of the week for Chemistry B. All students must attend an introductory talk concerning the Chemistry B practical course on W. 7 Oct. at 1000 in the *Bristol-Myers Squibb Lecture Theatre.*

ECOLOGY

Course Organiser: Dr D. A. Coomes (email: dac18@cam.ac.uk)

All lectures take place in the *Main Lecture Theatre, Department of Zoology* at M. W. F. 9.

DR R. S. K. BARNES
The Global Marine Ecosystem. (Six lectures, 9–21 Oct.)
DR E. V. T. TANNER, DR D. A. COOMES AND PROF. H. GRIFFITHS
The Ecology of Change. (Eighteen lectures, 23 Oct.–2 Dec.)

PROF. N. B. DAVIES
Predators and Prey. (Six lectures, 15 Jan.–27 Jan.)
DR M. BELL
Breeding Systems. (Six lectures, 29 Jan.–10 Feb.)
DR F. JIGGINS
Ecological Genetics. (Six lectures, 12 Feb.–24 Feb.)
PROF. W. SUTHERLAND
Ecological Dynamics. (Six lectures, 26 Feb.–10 Mar.)

DR E. V. J. TANNER
Biodiversity. (Six lectures, 21 Apr.*–3 May)
*Note the early start of this course
PROF. A. BALMFORD
Humans and Ecology. (Six lectures, 5–17 May)

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NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2009 LENT 2010 EASTER 2010

EXPERIMENTAL PSYCHOLOGY

Course Organiser: Dr M. Miozzo (email: mm584@cam.ac.uk)

Lectures will be held in *Lecture Theatre 3, Department of Physiology,* on Tu. Th. S. 11.

Practical work in the *Psychological Laboratory* unless otherwise stated.

PROF. T. W. ROBBINS
Introduction to the study of Experimental Psychology. (One lecture, 8 Oct.)
DR G. J. DAVIS
Sensation and Psychophysics. (One lecture, 10 Oct.)
DR G. J. DAVIS
Visual Perception. (Four lectures, 13, 15, 17, 20 Oct.)
PROF. B. C. J. MOORE
Auditory Perception. (Five lectures, 22, 24, 27, 29, 31 Oct.)
DR G. J. DAVIS
Attention. (Two lectures, 3, 5 Nov.)
DR L. M. SAKSIDA
Learning and Memory. (Five lectures, 7, 10, 12, 14, 17 Nov.)
DR L. CLARK
Motivation and Emotion. (One lecture, 19 Nov.)
DR J. SIMONS
Higher Cognition. (Five lectures, 21, 24, 26, 28 Nov., 1 Dec.)

DR M. MIOZZO
Language and the Brain. (Six lectures, 14, 16, 19, 21, 23, 26 Jan.)
DR J. RUSSELL
Developmental Psychology. (Six lectures, 28, 30 Jan., 2, 4, 6, 9 Feb.)
DR L. CLARK
Reasoning and Decision Making. (Four lectures, 11, 13, 16, 18 Feb.)
PROF. S. BARON-COHEN
Atypical Psychology. (Eight lectures, 20, 23, 25, 27 Feb., 2, 4, 6, 9 Mar.)

MR J. BROWN
Intelligence and IQ. (Two lectures, 22, 27 Apr.)
DR G. FAIRCHILD
Social Psychology. (Five lectures, 29 Apr., 4, 6, 11, 13 May)

Practical Work. Tu. 9–11 *or* W. 10–12 *or* 2–4 and Th. 2–4 *or* F. 10–12 *or* 2–4. Two 2–hour sessions per week, one chosen from Tu. 9–11 *or* W. 10–12 *or* 2–4, and the other from Th. 2–4 *or* F. 10–12 *or* 2–4. The computing facilities used for the practical work will be available for informal use throughout the year. Students should register for all biological practical courses on Wednesday, 7 Oct. between 11.00 and 12.15 in *the Senate House*.

GEOLOGICAL SCIENCES A

Course Organiser: Dr N. H. Woodcock (email: nhw1@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 in the *Tilley Lecture Room, Department of Earth Sciences* on M. W. F. 10.

DR A. PIOTROWSKI AND DR A. TURCHYN
Evolution of the Hydrosphere. (Eight lectures)

DR N. H. WOODCOCK
Maps and Structures. (Eight lectures)
PROF. R. S. WHITE
Solid Earth Geophysics. (Eight lectures)

DR K. MCNAMARA
Biogenic and Chemical Sediments and Clastic Sedimentology. (Fifteen lectures)
DR L. HARPER
Evolutionary Palaeobiology and Micropalaeontology. (Eight lectures)
DR N. HOVIUS
GIS for geological mapping (One lecture and special practicals)

Introduction to South West England field trip. Th. 10 (11 Mar.)

Geological Sciences Field Class. (7–17 Apr.)

DR D. B. NORMAN
Vertebrate Evolution. (Five lectures)

DR N. J. WHITE
Sedimentary Basins Reviewed. (Five lectures)

Practical Work. There are three practicals per week of about 1½ hours: students choose one from each set (Set 1: F. 11–1, F. 2–4; Set 2: M. 11–1, M. 2–4, Tu. 10–1; Set 3: W. 11–1, W. 2–4, Th. 10–1). Students should go to the Department of Earth Sciences on Wednesday, 7 Oct., between 9.30 and 12.30, or 2.30 and 4.30, to register their choice of times from those available.

GEOLOGICAL SCIENCES B

Course Organiser: Dr S. Gibson (email: sally@esc.cam.ac.uk Michaelmas Term)
Dr J Maclennan (email: jmac05@esc.cam.ac.uk Lent and Easter Terms)
Course Website: https://camtools.caret.cam.ac.uk/ and http://www.esc.cam.ac.uk/teaching/geological-sciences

All lectures are held in the *Tilley Lecture Room, Department of Earth Sciences,* on M. W. F. 9.

DR A. GALY
In the Beginning. (Four lectures)
DR R. J. HARRISON
Crystallography and Optical Petrography. (Five lectures)
PROF. M. A. CARPENTER
Principles of Mineral Behaviour. (Eight lectures)
DR M. EDMONDS
Introductory Igneous Petrology. (Four lectures)
DR M. EDMONDS
Chemical Differentiation of the Earth. (Three lectures)

DR M. EDMONDS
Physical Volcanology (One lecture)
DR J. MACLENNAN
Magmatic Settings. (Five lectures)
DR J. M. BUNBURY
Metamorphic Mineralogy. (Five lectures)
PROF. N. HARRIS
Introduction to Metamorphism. (Six lectures)
PROF. M. J. BICKLE
Textures and Metabasites (Seven lectures)

Introduction to South West England field trip. Th. 10 (11 Mar.)

Geological Sciences Field Class (7–17 April)

DR A. GALY
Evolution of the Himalayas. (Five lectures)
DR J. M. BUNBURY
Igneous Case Studies. (Four lectures)

Practical Work. There are three practicals per week of about 1½ hours, to be taken between successive lectures. Students should go to the Department of Earth Sciences on Wednesday, 7 Oct., between 9.30 and 12.30, or 2.30 and 4.30, to register their choices of times from those available, which are M. W. F. 11–1, Tu. Th. S. 9–12.

NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2009 **LENT 2010** **EASTER 2010**

HISTORY AND PHILOSOPHY OF SCIENCE

Course Organiser: Dr N. Hopwood (email: ndh12@cam.ac.uk)
Course Website: www.hps.cam.ac.uk/students

All lectures will be delivered in *Mill Lane Lecture Room 1.*

DR L. KASSELL, DR N. REEVES AND PROF. J. SECORD
History of Natural Philosophy. F. 5 (weeks 1–8); M. 5 (weeks 5–8)
DR T. LEWENS
Philosophy of Science: Induction, Causation, Explanation and Laws. W. 5 (weeks 1–8)
DR S. BANGU
Methodology: Popper, Kuhn and Confirmation. M. 5 (weeks 1–4)

PROF. J. SECORD, PROF. J. FORRESTER AND DR N. HOPWOOD
History of Science and Medicine. M. 5 (weeks 1–8); W. 5 (weeks 1–4)
DR A. BROADBENT
The Sociology of Scientific Knowledge. W. 5 (weeks 5–8)
DR T. LEWENS
Philosophy of Biology. F. 5 (weeks 1–4)
DR S. BANGU
Philosophy of Physics. F. 5 (weeks 5–8)

PROF. J. FORRESTER AND DR E. ROBSON
Cross-Cultural Reflections. F. 5 (weeks 1–4)
DR S. BANGU
Philosophy of Mathematics. W. 5 (weeks 1–4)
DR S. JOHN
Ethics in Science. M. 5 (weeks 1–4)

MATERIALS SCIENCE AND METALLURGY

Course Organiser: Dr J. A. Elliott (email: PartIB@msm.cam.ac.uk)
Course Website: www.msm.cam.ac.uk/teaching/mat1b/

All lectures will be delivered in the *Babbage Lecture Theatre* on Tu. Th. S. 10.

DR E. R. WALLACH
Phase Transformations. (Twelve lectures)
DR N. A. RUTTER
Materials and the Environment. (Twelve lectures)

DR J. A. ELLIOTT
Soft Materials. (Twelve lectures)
DR W. J. CLEGG
Materials and Structures. (Twelve lectures)

Industrial Visits
Details to be announced.

DR N. D. MATHUR
Electronic Properties of Materials. (Ten lectures)

Practical Work: One practical per week, either M. 2–4:30 *or* Tu. 2–4:30 *or* W. 2–4:30 *or* Th. 2–4:30. Students should register for practical classes in lab 301 of the *Department of Materials Science and Metallurgy* between 9.15 a.m.–12.30 p.m. *or* 2.30 p.m.–4.00 p.m. on Tu. 6 Oct.

MATHEMATICS

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

Students taking this course must also register electronically for the assessed **Computer Practical Course** before 7 Nov. 2009. Details are given in the course booklet distributed at the first lecture of Mathematical Methods I in Oct. 2009.

All lectures will be delivered in the *Arts School, Room A, Bene't Street,* on M. W. F. 11 unless otherwise stated.

DR M. WINGATE
Mathematical Methods I.

Examples Class W. 2.15–4.15 (Two classes, 13, 27 Nov.)

DR A. KENT
Mathematical Methods II.

Examples Class W. 2.15–4.15 (Two classes, 12 Feb., 5 Mar.)

PROF. M. B. GREEN
Mathematical Methods III. (Ten lectures)

Examples Class W. 2.15–4.15 (Two classes, 7 May, 21 May)

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NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2009 **LENT 2010** **EASTER 2010**

MINERAL SCIENCES

PHYSICS AND CHEMISTRY OF EARTH AND PLANETARY MATERIALS

Course Organiser: Prof. S. A. T. Redfern (email: SATR@esc.cam.ac.uk) – Michaelmas Term
Dr I. Farnan (email: i.farnan@esc.cam.ac.uk) – Lent and Easter Terms
Course Website: https://camtools.caret.cam.ac.uk/ and http://www.esc.cam.ac.uk/teaching/mineral-sciences

All lectures are in the *Harker 2 Room, Department of Earth Sciences,* on Tu. Th. S. 11.

PROF. S. A. T. REDFERN
From comets to atoms; structure of materials. (Twelve Lectures)
PROF. E. ARTACHO
Forces between atoms. (Twelve lectures)

PROF. M. T. DOVE
Phase Transitions. (Eight lectures)
DR R. J. HARRISON
Magnetism of Earth and planetary materials. (Eight lectures)
DR I. FARNAN
Fluids, melts and glasses (Eight lectures)

PROF. M. A. CARPENTER
Microstructure, properties and behaviour of silicates and oxides. (Eight lectures)

Practical Work. M. Th. 10–2 or 2–4. Students should register for practical work in the Department of Earth Sciences (South Entrance) between 9.30 a.m. and 1 p.m. or between 2.30 and 5 p.m. on Wednesday, 7 Oct.

NEUROBIOLOGY

Course Organiser: Dr Steve Hladky (email: sbh1@cam.ac.uk)
Course Website: http://www.cam.ac.uk/about/natscitripos/ps/p1b/neurobiol.html

All lectures take place in *Pharmacology Lecture Theatre* at Tu. Th. S. 12

PROF. W. A. HARRIS
Neural Determination (Four lectures, 8, 10, 13, 15 Oct.)
DR D. BURDAKOV
Neurotransmission, Neuromodulation and G-protein Coupled receptors. (Five lectures, 17, 20, 22, 24, 27 Oct.)
DR C. SCHWIENING
Electrical Properties of Neurons. (Four lectures, 29, 31 Oct., 3, 5 Nov.)
DR J. NIVEN
Vision. (Six lectures, 7, 10, 12, 14, 17, 19 Nov.)
DR I. M. WINTER
Hearing. (Three lectures, 21, 24, 26 Nov.)
DR H. R. MATTHEWS
Olfaction and Taste. (Two lectures, 28 Nov., 1 Dec.)

Note the early start of this course.
PROF. P. MCNAUGHTON
Somatosensation and Pain. (Four lectures, 12, 14, 16, 19 Jan.)
DR D. PARKER
Motor System. (Seven lectures, 21, 23, 26, 28, 30 Jan., 2, 4 Feb.)
PROF. D. WOLPERT
Sensorimotor Integration. (Three lectures, 6, 9, 11 Feb.)
DR B. J. MCCABE
Synaptic Efficacy. (Four lectures, 13, 16, 18, 20 Feb.)
PROF. B. J. EVERITT
Motivation and Emotion. (Four lectures, 23, 25, 27 Feb., 2 Mar.)
DR M. LANDGRAF
Development of Neural Connections. (Four lectures, 4, 6, 9, 11 Mar.)

Note the early start of this course.
DR MIOZZO
Language and the Brain. (Two lectures 20, 22 Apr.)
DR T. BUSSEY
Learning and Memory. (Four lectures, 24, 27, 29 Apr., 1 May)
DR T. BUSSEY
Higher Functions of the Nervous System. (Three lectures, 4, 6, 8 May)

Practical Work: 3 hour practical classes Th. 2–5 *or* Tu. 2–5

NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2009 LENT 2010 EASTER 2010

PATHOLOGY

Course Organiser: Dr I. B. Kingston (email: ibk1000@cam.ac.uk)
Course Website: www.path.cam.ac.uk/ugrad/part1/

All lectures take place in *Chemical Laboratory Lecture Theatre 1* at M. W. F. 12, unless otherwise stated.

PROF. A. H. WYLLIE
Cell Injury. (One lecture, 9 Oct.)
DR A. MOFFETT
Innate Immune System; Acute Inflammation: Defence Mechanisms; Healing and Chronic Inflammation. (Three lectures, beginning 12 Oct.)
DR A. KELLY
The Adaptive Immune System; B Cells and Antibodies; The Major Histocompatibility Complex; T Cells. (Four lectures, beginning 19 Oct.)
PROF. J. TROWSDALE
Tolerance; Autoimmunity; Hypersensitivity; Transplantation. (Four lectures, beginning 28 Oct.)
PROF. A. C. MINSON
Nature of Viruses; Viral Multiplication in the Host Cell; Responses to Viral Infection; Acute and Chronic Infection; Epidemiology of Viral Infection; Combating Viral Infection; Prion Diseases. (Seven lectures, beginning 9 Nov.)
DR I. B. KINGSTON
Introduction to Parasitic Diseases; Key Examples of Parasitic Diseases: Malaria; Key Examples of Parasitic Diseases: Schistosomiasis. (Three lectures, beginning 23 Nov.)
DR A. CARMICHAEL
Fungi (Two lectures, beginning 30 Nov.)

PROF. C. HUGHES
Bacterial Disease – Past, Present and Re-emerging; Bacteria: Prokaryotic Pathogens; Bacteria – Host Interaction: Pathogenicity; Host Damage – Toxins, the Host Response; Bacterial Pathogenicity in the Respiratory Tract; Bacterial Pathogenicity in the Gastrointestinal Tract; Combating Bacterial Disease. (Seven lectures, beginning 13 Jan.)
PROF. A. WYLLIE
Vascular reactions to injury; Atherosclerosis; Ischemia, infarction and their results. (Three lectures, beginning 29 Jan.)
DR M. ARENDS
The Regulation of Tissue Growth and Organisation; Clinical Pathology of Tumours; Biology of Tumours; Genetic Basis of Neoplasia; Causes of Cancer. (Five lectures, beginning 5 Feb.)
DR P. A. EDWARDS
Discovering Genes Mutated in Human Cancer I; Discovering Genes Mutated in Human Cancer II. (Two lectures, beginning 17 Feb.)
DR C. CUEVA-MENDEZ
New Therapeutic Targets in Cancer (One lecture, 22 Feb.)
DR C. SMITH
Emerging Virus Infections; (Two lectures, beginning 24 Feb.)
DR S. EFSTAFATHIOU
HIV. (One lecture, 1 Mar.)
DR P. DIGARD
Flu Pandemics. (One lecture, 3 Mar.)
DR M. FIELD
Zoonoses – Trypanosomiasis; Zoonoses – Leishmaniasis. (Two lectures, beginning 5 Mar.)
DR J. AJIOKA
Zoonoses – Toxoplasmosis. (One lecture, 10 Mar.)

DR I. B. KINGSTON
Tuberculosis. (One lecture, 21 Apr.)
DR R. BUJDOSO
Molecular aspects of prion diseases. (One lecture, 23 Apr.)
PROF. D. MASKELL
The evolution of pathogenic bacteria; Bacterial zoonosis. (Two lectures, beginning 26 Apr.)
DR N. BROWN
Emerging bacterial diseases, old and new (30 Apr.)

Practical Work. *Department of Pathology* Tu. W. Th. F. am and pm. Students should register for all biological practical courses on W. 7 October between 11.00 and 12.15 in *the Senate House* and attend an Introduction to Normal Histology for NST students, 8 and 9 Oct.

PHARMACOLOGY

Course Organiser: Dr H. W. van Veen (email: hwv20@cam.ac.uk)
Course Website: www.phar.cam.ac.uk/teaching/tea_nst1b.html

All lectures take place in the *Lecture Theatre, Department of Pharmacology,* at M. W. F. 11.

PROF. C. W. TAYLOR
Introduction. Structure and Function of Receptors. Diabetes Mellitus and Obesity. (Nine lectures, 9, 21–30 Oct., 2–6 Nov.)
PROF. R. F. IRVINE
Intracellular Messengers. (Four lectures, 12–19 Oct.)
DR R. D. MURRELL-LAGNADO
Synaptic Pharmacology. (Four lectures, 9–16 Nov.)
DR T. P. FAN
Inflammation Pain and Immunopharmacology. (Seven lectures, 18–30 Nov., 2 Dec.)

DR S. B. HLADKY
Pharmacokinetics, Drug Metabolism and General Anaesthetics. (Five lectures, 15–25 Jan.)
DR H. W. VAN VEEN
Antimicrobial and Antiviral Drugs. (Four lectures, 27 Jan.– 3 Feb.)
DR B. J. BILLUPS
Central Nervous System. (Seven lectures, 5–19 Feb.)
DR. B. FURR
Drug Discovery. (One lecture. 22 Feb.)
DR Z. SARNYAI
Steroid Receptors and Reproductive Pharmacology. (Four lectures, 24 Feb.–3 Mar.)
PROF. D. M. F. COOPER
Cell Growth and Cancer. (Three lectures, 5–10 Mar.)

DR R. M. HENDERSON
Cardiovascular and Renal Pharmacology. (Eleven lectures, 23–30 Apr., 3–17 May)

Practical Work. Tu. 2–5 *or* W. 2–5. A detailed timetable will be posted in the Department, on CamTools and on the Pharmacology web site. Students should register for the practical course on W. 7 Oct. between 10.00 and 11.15 at the Arts School, Bene't Street in the Small Exam Hall.

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NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2009 **LENT 2010** **EASTER 2010**

PHYSICS A

Departmental Contact: Dr R. Padman (email: IB-physics-A@phy.cam.ac.uk)
Course Website: www.phy.cam.ac.uk/teaching/

Lectures are given in the *Cockcroft Lecture Theatre, New Museums Site*, M. W. F. at 12.

DR D. F. BUSCHER
Oscillations, Waves and Optics. M. F.

PROF. C. A. HANIFF
Experimental Methods. W.

Laboratory Work

DR R. D. E. SAUNDERS
Systems and Measurement.

PROF. V. GIBSON
Quantum Physics.

PROF. C. A. HANIFF
Waves and Optics.

DR J. ELLIS
Condensed Matter Physics. (First ten lectures)

Laboratory Work takes place at the *Cavendish Laboratory (West Cambridge)*. The experimental laboratories are open M. 2–5.45, Tu. 10–5.45, Th. 10–5.45 and F. 2–5.45. Students will be allocated periods within these times. Students taking both Part IB Physics A and Part IB Physics B should register at 2.00 p.m. on W. 7 Oct. at the *Cavendish Laboratory*. Students taking Part IB Physics A and *not* IB Physics B, must register between 2.00 p.m. and 4.00 p.m. on Tu. 6 Oct., when they will be allocated practical sessions that fit with their other IB subjects. **Laboratory work is continuously assessed**.

PHYSICS B

Departmental Contact: Dr R. Padman (email: IB-physics-B@phy.cam.ac.uk)
Course Website: www.phy.cam.ac.uk/teaching/

Lectures are given in the *Cockcroft Lecture Theatre, New Museums Site*, unless otherwise stated.

PROF. S. WITHINGTON
Electromagnetism. (Twenty lectures) M. W. F. 9 (First four weeks), then M. W. 9

DR C. G. LESTER
Introduction to Computing. F. 9. (Last four weeks) Classes to be confirmed

For those not taking NST Part IB Mathematics:

DR D. A. GREEN
Mathematical Methods. M. F. 11 *Room B, Arts School, Bene't Street*

Laboratory Work

DR R. D. E. SAUNDERS AND OTHERS
Systems and Measurement.

DR C. G. LESTER
The same continued. (15, 22 Jan.) Classes to be confirmed

PROF. S. F. GULL
Classical Dynamics and Fluids. (Twenty lectures) M. W. F. 9 (except 15, 22 Jan.)

DR E. EISER
Thermodynamics. (Two lectures) M. W. 9 (8 and 10 March)

PROF. C. A. HANIFF AND OTHERS
Waves and Optics.

PROF. M. A. PARKER AND OTHERS
Great Experiments. Tu. Th. 9

DR E. EISER
The same continued. (First ten lectures) M. W. F. 9

Laboratory Work takes place at the *Cavendish Laboratory (West Cambridge)*. The experimental laboratories are open M. 2–5.45, Tu. 10–5.45, Th. 10–5.45 and F. 2–5.45. Students will be allocated periods within these times. Students taking both Part IB Physics A and Part IB Physics B should register at 2.00 p.m. on W. 7 Oct. at the *Cavendish Laboratory*. Students taking Part IB Physics B and *not* IB Physics A, must register between 2.00 p.m. and 4.00 p.m. on Tu. 6 Oct., when they will be allocated practical sessions that fit with their other IB subjects. **Laboratory work is continuously assessed**.

NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2009 **LENT 2010** **EASTER 2010**

PHYSIOLOGY

Course Organiser: Dr R. J. Barnes (email: rjb4@cam.ac.uk)
Course Website: www.physiol.cam.ac.uk/

Lectures are given in the *Physiological Laboratory, Lecture Theatre 1,* Tu. Th. S. 9.

Lectures: Tu. Th. S. 9

DR R. J. BARNES
Introduction, the Mammalian Cardiovascular System. (Five lectures, 7–15 Oct., 10 Nov.)

DR MICHAEL J. MASON
Respiration. (Seven lectures, 20 Oct.–3 Nov.)

DR MATTHEW J. MASON
Endocrinology. (Three lectures, 17 Oct., 5–7 Nov.)

DR S. O. SAGE
Renal Physiology and Body Fluid Homeostasis. (Nine lectures, 12 Nov.–1 Dec.)

Practical Work Th. 2–4(5) or Tu. 2–4(5)

Lectures: Tu. Th. S. 9

DR A. J. FORHEAD
Reproduction. (Six lectures, 14–26 Jan.) *Physiology Lecture Theatre 1*

DR S. K. L. ELLINGTON
Development. (Two lectures 28–30 Jan.) *Physiology Lecture Theatre 1*

DR D. R. J. BAINBRIDGE AND DR R. J. BARNES
Biology of Pregnancy. (Four lectures, 2–9 Feb.) *Physiology Lecture Theatre 1*

DR D. R. J. BAINBRIDGE
Birth, Lactation and the Neonate. (Three lectures, 11–16 Feb.) *Physiology Lecture Theatre 1*

DR MATTHEW J. MASON
Digestion and Absorption. (Seven lectures, 18 Feb. – 4 Mar.)

DR MATTHEW J. MASON
Weight Regulation and Nutrition. (Two lectures, 6, 9 Mar.)

The same continued.

Lectures: Tu. Th. S. 9

DR J. JENNER
Muscle in Exercise. (One lecture, 22 Apr.)

DR R. J. BARNES
The Circulation and Exercise (One lecture, 24 Apr.)

DR D. GORDON
Training (One lecture, 27 Apr.)
Exercise in Stressful Environments. (One lecture, 29 Apr.)

DR R. J. BARNES
Limits of Performance, oxygen kinetics. (One lecture, 1 May)

DR MATTHEW J. MASON
Man in the Arctic. (One lecture, 4 May) *Optional for Medics.*
Vertebrates in the Arctic. (One lecture, 6 May)
Man in the Desert. (One lecture, 8 May)
Vertebrates in the Desert. (One lecture, 11 May) *Optional for Medics.*

DR MICHAEL J. MASON
Man in Space. (One lecture, 13 May)

The same continued.

PLANT AND MICROBIAL SCIENCES

Course Organiser and Departmental Contact: Dr D. E. Hanke (email: deh1000@cam.ac.uk)
Course Website: http://www.plantsci.cam.ac.uk/teaching/pms.html

All lectures take place in the *Large Lecture Theatre, Department of Plant Sciences,* on T. Th. S. 11.

DR D. E. HANKE
Introduction and Overview. (One lecture, 8 Oct.)

DR D. E. HANKE
Genetic Manipulation of Plants. (Two lectures, 10–13 Oct.)

DR J. M. HIBBERD AND PROF. A. SMITH
Photosynthesis and Management of Reserves. (Eight lectures, 15 Oct. – 31 Oct.)

DR J. M. DAVIES, DR E. V. J. TANNER AND PROF. H. GRIFFITHS
Plants in the Abiotic Environment: Water, Nutrients and Temperature. (Thirteen lectures, 3 Nov. – 1 Dec.)

DR K. JOHNSTONE
Comparative Microbiology. (Three lectures, beginning 14–19 Jan.)

PROF. SIR D. J. BAULCOMBE AND DR M. LESLEY
Plant Pathology. (Ten lectures, 21 Jan. – 11 Feb.)

DR N. CUNNIFFE
Epidemiology. (Two lectures, 13–18 Feb.)

DR J. BALK
Beneficial Plant – Microbe Interactions. (Three lectures, 18 Feb. – 23 Feb.)

DR D. E. HANKE AND DR B. J. GLOVER
Plant Development. (Six lectures, 25 Feb. – 9 Mar.)

DR B. J. GLOVER
Plants and Animals. (Three lectures, 20–24 Apr.)
Please note the early start of this course.

DR D. A. COOMES
Conservation. (Four lectures, 27 Apr. – 4 May)

DR A. N. OTHER
Exploitation of Plants. (Three lectures, 6–11 May)

Practical work: Students will be expected to do four hours practical work between 12 noon and 5 pm on M. *or* Tu. in four of the eight weeks of the Michaelmas term; four of the eight weeks of Lent Term, and in *two* weeks of the Easter Term. Other activities which students will also be expected to attend will be scheduled in vacant practical slots. A field course will take place in Portugal in the Easter Vacation 2010; places are limited and are allocated in order of application. Students should register for all biological practical courses on Wednesday, 7 Oct. between 11.00 and 12.15 *in the Senate House*.

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