

## NATURAL SCIENCES TRIPOS, PART IB

MICHAELMAS 2010

LENT 2011

EASTER 2011

## ANIMAL BIOLOGY

Course Organiser: Dr Rufus Johnstone (email: raj1003@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* on 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 8 Oct.)

PROF. S. LAUGHLIN AND DR B. HEDWIG  
 Brains and Behaviour. (Twelve lectures, beginning 5 Nov.)

DR W. FEDERLE AND DR W. FOSTER  
 Insect Biology. (Twelve lectures, beginning 21 Jan.)

DR M. WILKINSON AND DR R. ASHER  
 Vertebrate Evolutionary Biology. (Twelve lectures, beginning 18 Feb.)

DR R. A. JOHNSTONE AND DR N. I. MUNDY  
 Evolutionary Principles. (Twelve lectures, beginning 27 Apr.)

*Note the early start date of lectures and practicals*

**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. 6 Oct. between 11.00 and 12.15 in the *Senate House*.

## 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. 8 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, 8–18 Oct.)

PROF. DAME JEAN THOMAS  
 Control of Gene Expression: DNA Structure and DNA–Protein Interactions. (Five lectures, 20–29 Oct.)

DR J. MATA  
 Control of Gene Expression: Transcription, RNA Processing and Translation. (Five lectures, 1–10 Nov.)

PROF. SIR TOM BLUNDELL  
 Protein Structure, Flexibility and Function. (Five lectures, 12–22 Nov.)

DR F. HOLLFELDER  
 Enzyme Catalysis and Protein Engineering. (Five lectures, 24 Nov.–3 Dec.)

**Energy transduction, cell signalling and cell proliferation**

DR G. C. BROWN  
 Energy Transduction in Bacteria, Mitochondria and Chloroplasts. (Six lectures, 19–31 Jan.)

*Note the early start of this course.*

PROF. K. M. BRINDLE  
 Control of Metabolism. (Six lectures, 2–14 Feb.)

PROF. R. W. FARNDALE  
 Transmembrane Signalling: Molecules and Mechanisms. (Six lectures, 16–28 Feb.)

DR D. M. CARRINGTON  
 Control of Eukaryotic Cell Growth. (Four lectures, 2–9 Mar.)

DR T. R. HESKETH  
 Oncogenes, Tumour Suppressor Genes and Cancer (Four lectures, 11–18 Mar.)

**Biochemistry of microorganisms**

DR M. WELCH  
 Bacterial Chemotaxis. (Three lectures, 27 Apr.–2 May)

*Note the early start of this course.*

PROF. G. P. C. SALMOND  
 Bacterial Signalling and Secretion Systems. (Two lectures, 4–6 May)

DR D. M. CARRINGTON  
 Molecular Biology of Protozoa. (Four lectures, 9–16 May)

**Practical work:** Practical are given at the *Hopkins Building, Department of Biochemistry, Downing Site* four hours from 11 a.m. on M. Tu. W. Th. or F., commencing Th. 7 Oct. Students should register for all biological practical courses on W. 6 Oct. between 11 and 12.15 in the *Senate House*.

## NATURAL SCIENCES TRIPOS, PART 1b (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## 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

<p>DR T. KRUDE AND PROF. S. P. JACKSON Molecular Biology of the Cell Nucleus. (Nine lectures, 7–26 Oct.)</p> <p>DR P. OLIVER AND DR D. SUMMERS Genetic Systems of Prokaryotes. (Six lectures, 28 Oct.–9 Nov.)</p> <p>PROF. S. OLIVER Molecular Genetics of Yeast Cells. (Four lectures, 11–18 Nov., and 1 Dec.)</p> <p>DR C. J. O'KANE Genome Organisation and Genomics. (Five lectures, 20–30 Nov.)</p>	<p>PROF. A. G. SMITH Organelle Biogenesis. (Six lectures, 18–29 Jan.)</p> <p>DR M. SEGAL Cytoskeleton. (Four lectures, 1–8 Feb.)</p> <p>PROF. P. DUPREE Membrane Traffic. (Four lectures, 10–17 Feb.)</p> <p>DR A. WEBB Photoperiodism. (Two lectures, 19–22 Feb.)</p> <p>DR H. SKAER Intercellular Communication. (Two lectures, 24–26 Feb.)</p> <p>DR H. SKAER Development I. (Four lectures, 1–8 Mar.)</p> <p>DR A. RANA Development II. (Four lectures, 10–17 Mar.)</p> <p><i>Note the early start of this course</i></p>	<p>DR H. SKAER Development III. (Four lectures, 26 Apr.–3 May)</p> <p>DR J. HASELOFF Development IV. (Six lectures, 5–17 May)</p> <p><i>Note the early start of this course</i></p>
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**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. 6 Oct. between 11.00 and 12.15 in the *Senate House*.

## 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.

<p>DR S. C. ALTHORPE Introduction to Quantum Mechanics. (Twelve lectures)</p> <p>DR P. D. WOTHERS Molecular Spectroscopy. (Six lectures)</p> <p>DR M. J. DUER Symmetry and Bonding. (Six lectures)</p>	<p>DR M. J. DUER Symmetry and Bonding. (Six lectures, continued)</p> <p>DR J. H. KEELER Molecular Energy Levels and Thermodynamics. (Fourteen lectures)</p> <p>DR S. J. JENKINS AND PROF. S. R. ELLIOTT Electronic Structure and Properties of Solids. (Four lectures)</p>	<p>DR S. J. JENKINS AND PROF. S. R. ELLIOTT Electronic Structure and Properties of Solids. (Eleven lectures, continued)</p>
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**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. 5 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. 6 Oct. at 10.45 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.

<p>DR I. R. BAXENDALE Key Organic Reactions. (Twelve lectures)</p> <p>DR N. BAMPOS Structure Determination. (Six lectures)</p> <p>DR S. R. BOSS Coordination Chemistry. (Six lectures)</p>	<p>DR S. R. BOSS Coordination Chemistry. (Two lectures, continued)</p> <p>DR P. T. WOOD Organometallic Chemistry. (Six lectures)</p> <p>DR A. E. H. WHEATLEY Inorganic Ring Chemistry. (Six lectures)</p> <p>DR P. D. WOTHERS AND DR J. M. GOODMAN Shape and Organic Reactivity. (Ten lectures)</p>	<p>DR F. J. LEEPER AND DR A. CIULLI Introduction to Chemical Biology. (Eleven lectures)</p>
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**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. 5 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. 6 Oct. at 1000 in the *Bristol-Myers Squibb Lecture Theatre*.

## NATURAL SCIENCES TRIPOS, PART 1B (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## ECOLOGY

Course Organiser: Dr David Coomes (email: [dacl18@cam.ac.uk](mailto:dacl18@cam.ac.uk) or Roz McKenzie email: [rm305@cam.ac.uk](mailto:rm305@cam.ac.uk))  
 Course Website: <https://www.plantsci.cam.ac.uk/teaching/ecology.html>

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

DR R. BARNES  
 The Global Marine Ecosystem. (Six lectures, 8–20 Oct.)  
 DR E. V. J. TANNER, DR D. A. COOMES AND PROF. H. GRIFFITHS  
 The Ecology of Change. (Eighteen lectures, 22 Oct.–1 Dec.)

PROF. N. B. DAVIES  
 Predators and Prey. (Six lectures, 21 Jan.–2 Feb.)  
 PROF. N. B. DAVIES  
 Predators and Prey. (Six lectures, 21 Jan.–2 Feb.)  
 PROF. T. H. CLUTTON–BROCK  
 Breeding Systems. (Six lectures, 4–16 Feb.)  
 DR F. JIGGINS  
 Ecological Genetics. (Six lectures, 18 Feb.–2 Mar.)  
 PROF. W. SUTHERLAND  
 Ecological Dynamics. (Six lectures, 4 Mar.–16 Mar.)

DR E. V. J. TANNER  
 Biodiversity. (Six lectures, 27 Apr.\*–9 May)  
 \*Note the early start of this course  
 PROF. A. BALMFORD  
 Humans and Ecology. (Six lectures, 11–23 May)

## EXPERIMENTAL PSYCHOLOGY

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

Lectures will be held in the *Anatomy Lecture Theatre*, 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, 7 Oct.)  
 PROF. B. C. J. MOORE  
 Psychophysics and sensory coding. (One lecture, 9 Oct.)  
 PROF. B. C. J. MOORE  
 Visual Perception. (Four lectures, 12, 14, 16, 19 Oct.)  
 PROF. B. C. J. MOORE  
 Auditory Perception. (Five lectures, 21, 23, 26, 28, 30 Oct.)  
 DR J. S. SIMONS  
 Attention. (Two lectures, 2, 4 Nov.)  
 PROF. A. DICKINSON  
 Learning, Memory and Motivation. (Six lectures, 6, 9, 11, 13, 16, 18 Nov.)  
 DR J. S. SIMONS  
 Higher Cognition. (Five lectures, 20, 23, 25, 27, 30 Nov.)

DR M. MIOZZO  
 Language and the Brain. (Six lectures, 13, 15, 18, 20, 22, 25 Jan.)  
 DR J. RUSSELL  
 Developmental Psychology. (Six lectures, 27, 29 Jan., 1, 3, 5, 8 Feb.)  
 DR L. CLARK  
 Reasoning and Decision Making. (Four lectures, 10, 12, 15, 17 Feb.)  
 PROF. S. BARON-COHEN  
 Atypical Psychology. (Eight lectures, 19, 22, 24, 26 Feb., 1, 3, 5, 8 Mar.)

DR K. C. PLAISTED GRANT  
 Intelligence and IQ. (Two lectures, 21, 26 Apr.)  
 DR K. C. PLAISTED GRANT  
 Social Psychology. (Five lectures, 28 Apr., 3, 5, 10, 12 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, 6 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](mailto: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  
 Sedimentology. (Fifteen lectures)  
 DR N. BUTTERFIELD  
 Evolutionary Palaeobiology and Micropalaeontology. (Eight lectures)  
 TO BE CONFIRMED  
 GIS for geological mapping. (One lecture and special practicals)  
 Introduction to South West England field trip. Th. 10 (17 Mar.)  
**Geological Sciences Field Course.** (4–14 Apr.)

PROF. J. A. JACKSON  
 Sedimentary Basins Reviewed. (Five lectures)  
 DR D. B. NORMAN  
 Vertebrate Evolution. (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, 6 Oct., between 9.30 and 12.30, or 2.30 and 4.30, to register their choice of times from those available.

## NATURAL SCIENCES TRIPOS, PART Ib (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## GEOLOGICAL SCIENCES B

Course Organiser: Dr S. Gibson email: [sally@esc.cam.ac.uk](mailto:sally@esc.cam.ac.uk) Michaelmas and Lent Terms  
 Dr J MacLennan email: [jmac05@esc.cam.ac.uk](mailto:jmac05@esc.cam.ac.uk) Easter Term

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. PIOTROWSKI In the Beginning. (Four lectures)	DR M. EDMONDS Physical Volcanology (One lecture)	DR A. GALY Evolution of the Himalayas. (Five lectures)
DR I. FARNAN Crystallography and Optical Petrography. (Five lectures)	DR J. MACLENNAN Magmatic Settings. (Five lectures)	DR J. M. BUNBURY Igneous Case Studies. (Four lectures)
PROF. M. A. CARPENTER Principles of Mineral Behaviour. (Eight lectures)	DR J. M. BUNBURY Metamorphic Mineralogy. (Five lectures)	
DR M. EDMONDS Introductory Igneous Petrology. (Four lectures)	DR T. J. B. HOLLAND Introduction to Metamorphism. (Eight lectures)	
DR M. EDMONDS Chemical Differentiation of the Earth. (Three lectures)	PROF. M. BICKLE Metabasites (Five lectures)	
	Introduction to South West England field trip. Th. 10 (17 Mar.)	
	<b>Geological Sciences Field Course (4–14 Apr.)</b>	

**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, 6 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.

## HISTORY AND PHILOSOPHY OF SCIENCE

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

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

DR L. KASSELL, PROF. S. SCHAFFER AND PROF. J. SECORD History of Natural Philosophy. F. 5 (weeks 1–8); M. 5 (weeks 5–8)	PROF. J. SECORD AND DR N. HOPWOOD History of Science and Medicine. M. 5 (weeks 1–8); W. 5 (weeks 1–4)	DR E. ROBSON Cross-Cultural Reflections. F. 5 (weeks 1–4)
DR T. LEWENS Philosophy of Science: Induction, Causation, Explanation and Laws. M. 5 (weeks 1–4); W. 5 (weeks 1–4)	PROF. H. CHANG AND DR K. BROSANAN The same continued. F. 5 (weeks 1–4)	DR K. BROSANAN Philosophy of Biology. W. 5 (weeks 1–4)
PROF. H. CHANG AND DR K. BROSANAN Methodology: Popper, Kuhn and Confirmation. W. 5 (weeks 5–8)	PROF. H. CHANG Philosophy of Physical Sciences. F. 5 (weeks 5–8); W. 5 (weeks 5–8)	DR S. JOHN Ethics in Science. M. 5 (weeks 1–4)

## MATERIALS SCIENCE

Course Organiser: Dr J. A. Elliott (email: [PartIb@msm.cam.ac.uk](mailto:PartIb@msm.cam.ac.uk))  
 Course Website: [www.msm.cam.ac.uk/teaching/](http://www.msm.cam.ac.uk/teaching/)

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

DR E. R. WALLACH Phase Transformations. (Twelve lectures)	DR J. A. ELLIOTT Polymers. (Twelve lectures)	DR N. D. MATHUR Electronic Materials and Devices. (Nine lectures)
DR N. A. RUTTER Environmental Stability of Materials. (Twelve lectures)	DR P. D. BRISTOWE Mechanics of Materials and Structures. (Twelve lectures)	
	<b>Industrial Visit</b> Details to be announced.	<b>Industrial Visit</b> Details to be announced.

**Practical Work:** One practical per week, either 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. 5 Oct.

## NATURAL SCIENCES TRIPOS, PART 1B (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## MATHEMATICS

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

Students taking this course must also register electronically for the assessed **Computer Practical Course** before 5 Nov. 2010. Details are given in the course booklet distributed at the first lecture of Mathematical Methods I in Oct. 2010.

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

DR C. P. CAULFIELD  
 Mathematical Methods I.

**Examples Class** W. 2.15–4.15 (Two classes, 10, 24 Nov.)

PROF. P. K. TOWNSEND  
 Mathematical Methods II.

**Examples Class** W. 2.15–4.15 (Two classes, 16 Feb., 9 Mar.)

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

**Examples Class** W. 2.15–4.15 (Two classes, 11, 25 May)

MINERAL SCIENCES  
 PHYSICS & CHEMISTRY OF EARTH & PLANETARY MATERIALS

Course Organiser: Dr I. Farnan email: [i.farnan@esc.cam.ac.uk](mailto:i.farnan@esc.cam.ac.uk)  
 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. SALJE  
 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, 6 Oct.

## NEUROBIOLOGY

Course Organiser: Dr B. J. McCabe email: [bjm1@cam.ac.uk](mailto:bjm1@cam.ac.uk)  
 Course Website: [www.bio.cam.ac.uk/teaching/nstneurobiology/](http://www.bio.cam.ac.uk/teaching/nstneurobiology/)

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

DR H. P. C. ROBINSON  
 Electrical Properties of Neurons. (Four lectures, 7, 9, 12, 14 Oct.)

DR D. BURDAKOV  
 Neurotransmission and Neuromodulation. (Five lectures, 16, 19, 21, 23, 26 Oct.)

DR I. M. WINTER  
 Hearing. (Three lectures, 28, 30 Oct., 2 Nov.)

PROF. S. LAUGHLIN  
 Vision. (Six lectures, 4, 6, 9, 11, 13, 16 Nov.)

DR H. R. MATTHEWS  
 Olfaction and Taste. (Two lectures, 18, 20 Nov.)

PROF. P. MCNAUGHTON  
 Somatosensation and Pain. (Four lectures, 23, 25, 27, 30 Nov.)

*Note the early start of this course.*

DR D. PARKER  
 Motor System. (Seven lectures, 18, 20, 22, 25, 27, 29 Jan., 1 Feb.)

PROF. A. BRAND  
 Neural Determination (Three lectures, 3, 5, 8 Feb.)

DR M. LANDGRAF  
 Development of Neural Connections. (Five lectures, 10, 12, 15, 17, 19 Feb.)

PROF. B. J. EVERITT  
 Motivation and Emotion. (Four lectures, 22, 24 Feb., 1, 3 Mar.)

DR M. MIOZZO  
 Language and the Brain. (Two lectures 26 Feb., 5 Mar.)

DR B. J. MCCABE  
 Synaptic Efficacy. (Four lectures, 8, 10, 12, 15 Mar.)

*Note the early start of this course.*

DR T. BUSSEY  
 Learning and Memory. (Four lectures, 26, 28, 30 Apr., 3 May)

DR T. BUSSEY  
 Higher Functions of the Nervous System. (Three lectures, 5, 7, 10 May)

PROF. D. WOLPERT  
 Sensorimotor Integration. (Three lectures, 12, 14, 17 May)

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

## NATURAL SCIENCES TRIPOS, PART Ib (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## PATHOLOGY

Course Organiser: Dr I. B. Kingston email: [ibk1000@cam.ac.uk](mailto:ibk1000@cam.ac.uk)  
 Course Website: [www.path.cam.ac.uk/ugrad/part1/](http://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, 8 Oct.)

PROF. A. MOFFETT

Innate Immune System; Acute Inflammation: Defence Mechanisms; Healing and Chronic Inflammation. (Three lectures, beginning 11 Oct.)

DR A. KELLY

The Adaptive Immune System; B Cells and Antibodies; The Major Histocompatibility Complex; T Cells. (Four lectures, beginning 18 Oct.)

PROF. J. TROWSDALE

Tolerance; Autoimmunity; Hypersensitivity; Transplantation. (Four lectures, beginning 27 Oct.)

PROF. A. C. MINSON

Viral Multiplication in the Host Cell; Nature of Viruses; Responses to Viral Infection; Acute and Chronic Infection; Epidemiology of Viral Infection; Combating Viral Infection; Prion Diseases. (Seven lectures, beginning 5 Nov.)

DR I. B. KINGSTON

Introduction to Parasitic Diseases; Key Examples of Parasitic Diseases: Malaria; Key Examples of Parasitic Diseases: Schistosomiasis. (Three lectures, beginning 22 Nov.)

DR A. CARMICHAEL

Fungi (Two lectures, beginning 29 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 19 Jan.)

*Note the early start of this course.*

PROF. A. WYLLIE

Vascular reactions to injury; Atherosclerosis; Ischemia, infarction and their results. (Three lectures, beginning 4 Feb.)

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 11 Feb.)

DR P. A. W. EDWARDS

Discovering Genes Mutated in Human Cancer I; Discovering Genes Mutated in Human Cancer II. (Two lectures, beginning 23 Feb.)

T.B.C.

New Therapeutic Targets in Cancer (One lecture, 28 Feb.)

DR C. SMITH

Emerging Virus Infections; Virus Latency and Immune Invasion; (Two lectures, beginning 2 Mar.)

DR S. EFSTATHIOU

HIV. (One lecture, 7 Mar.)

DR P. DIGARD

Flu Pandemics. (One lecture, 9 Mar.)

DR M. FIELD

Zoonoses – Trypanosomiasis; Zoonoses – Leishmaniasis. (Two lectures, beginning 11 Mar.)

DR J. AJOKA

Zoonoses – Toxoplasmosis. (One lecture, 16 Mar.)

DR B. KINGSTON

Tuberculosis. (One lecture, 27 Apr.)  
*Note the early start of this course.*

DR R. BUDJOSO

Molecular aspects of prion diseases. (One lecture, 29 Apr.)

PROF. D. MASKELL

The evolution of pathogenic bacteria; Bacterial zoonosis. (Two lectures, beginning 2 May)

DR D. BROWN

Emerging bacterial diseases, old and new (6 May)

**Practical Work.** *Department of Pathology* Tu, W, Th, F, am and pm. Students should register for all biological practical courses on W, 6 October between 11.00 and 12.15 in the *Senate House* and attend an Introduction to Normal Histology for NST students, 7 and 8 Oct.

## PHARMACOLOGY

Course Organiser: Dr H. W. van Veen email: [hvw20@cam.ac.uk](mailto:hvw20@cam.ac.uk)  
 Course Website: [www.phar.cam.ac.uk/teaching/tea\\_nst1b.html](http://www.phar.cam.ac.uk/teaching/tea_nst1b.html)

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

PROF. J. M. EDWARDSON

Introduction. Structure and Function of Receptors. (Six lectures, 8–15 Oct., 27, 29 Oct.)

PROF. R. F. IRVINE

Intracellular Messengers. (Four lectures, 18–25 Oct.)

DR L. K. HEISLER

Diabetes Mellitus and Obesity (Two lectures 1, 3 Nov.)

DR R. D. MURRELL–LAGNADO

Synaptic Pharmacology. (Five lectures, 5–15 Nov.)

DR H. W. VAN VEEN

Antimicrobial and Antiviral Drugs. (Five lectures, 17–26 Nov.)

DR B. FURR

Drug Discovery (One lecture, 29 Nov.)

DR S. B. HLADKY

Pharmacokinetics, Drug Metabolism and General Anaesthetics. (Five lectures, 21–31 Jan.)

DR B. J. BILLUPS

Central Nervous System. (Seven lectures, 2–16 Feb.)

DR C. R. HILEY

Cardiovascular and Renal Pharmacology (Eleven lectures, 21–28 Feb., 2–16 Mar.)

DR T. P. FAN

Inflammation, Pain and Immunopharmacology. (Seven lectures, 29 Apr., 2–13 May.)

DR Z. SARNYAI

Steroid Receptors and Reproductive Pharmacology. (Four lectures, 16–23 May.)

PROF. D. M. F. COOPER

Cell Growth and Cancer. (Two lectures, 25, 27 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 Th, 7 Oct, between 11.00 and 12.15 at the *Senate House*.

## NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## PHYSICS A

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

All lectures are on M. W. F. at 12

Lectures are given in the *Cockcroft Lecture Theatre, New Museums Site*

PROF. C. A. HANIFF

Experimental Methods. M. W. F. (First eight lectures)

DR D. F. BUSCHER

Oscillations, Waves and Optics. M. W. F. (Sixteen lectures, beginning 27 Oct.)

For those not taking NST Part IB Mathematics:

DR D. A. GREEN

Mathematical Methods. M. F. 11 *Hopkinson Room, Phoenix Building***Laboratory Work**

DR R. D. E. SAUNDERS AND OTHERS

Systems and Measurement.

PROF. V. GIBSON

Quantum Physics.

PROF. M. A. PARKER AND OTHERS

Great Experiments. M. 10

PROF. C. A. HANIFF AND OTHERS

Waves and Optics.

DR J. ELLIS

Condensed Matter Physics. (First ten lectures)

PROF. C. A. HANIFF AND OTHERS

The same continued. (First two weeks)

**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. 6 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. 5 Oct., when they will be allocated practical sessions that fit with their other IB subjects. **Laboratory work is continuously assessed.**

## PHYSICS B

Departmental Contact: Helen Marshall, 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

PROF. S. F. GULL

Classical Dynamics and Fluids. (Four lectures, beginning 24 Nov.) M. W. F. 9

For those not taking NST Part IB Mathematics:

DR D. A. GREEN

Mathematical Methods. M. F. 11 *Hopkinson Room, Phoenix Building***Laboratory Work**

DR R. D. E. SAUNDERS AND OTHERS

Systems and Measurement.

DR C. J. LESTER

Introduction to Computing. (Two lectures) M. F. 9

(21, 24 Jan.)

Classes to be confirmed

PROF. S. F. GULL

The same continued (Sixteen lectures, beginning 26 Jan.) M. W. F. 9

PROF. M. A. PARKER AND OTHERS

Great Experiments. M. 10

DR E. EISER

Thermodynamics. (Six lectures) M. W. F. 9 (beginning 4 March)

PROF. C. A. HANIFF AND OTHERS

Waves and Optics.

PROF. C. A. HANIFF AND OTHERS

The same continued. (First two weeks)

**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. 6 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. 5 Oct., when they will be allocated practical sessions that fit with their other IB subjects. **Laboratory work is continuously assessed.**

## NATURAL SCIENCES TRIPOS, PART 1B (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## 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, 7–16 Oct.)

DR MICHAEL J. MASON

Respiration. (Seven lectures, 19 Oct.–2 Nov.)

DR MATTHEW J. MASON

Endocrinology. (Three lectures, 4–9 Nov.)

DR S. O. SAGE

Renal Physiology and Body Fluid Homeostasis. (Nine  
 lectures, 11–30 Nov.)

**Lectures:** Tu. Th. S. 9

PROF. W. H. COLLEDGE

Reproduction. (Six lectures, 20 Jan.–1 Feb.)

*Physiology Lecture Theatre 1*

DR S. K. L. ELLINGTON

Development. (Two lectures 3–5 Feb.)

*Physiology Lecture Theatre 1*

DR D. R. J. BAINBRIDGE

Placental function. (One lecture, 8 Feb.)

*Physiology Lecture Theatre 1*

PROF. A. L. FOWDEN

Fetal Growth. (One lecture, 10 Feb.), Maternal  
 Adaptations (One lecture, 12 Feb.), Fetal  
 Preparations for Birth (One lecture, 15  
 Feb.), Parturition (One lecture, 17 Feb.),  
 Neonatal Physiology (One lecture, 19  
 Feb.) *Physiology Lecture Theatre 1*

DR D. R. J. BAINBRIDGE

Lactation (One lecture, 22 Feb.) *Physiology  
 Lecture Theatre 1*

DR MATTHEW J. MASON

Digestion and Absorption. (Seven lectures, 24  
 Feb.–10 Mar.)

DR MATTHEW J. MASON

Weight Regulation and Nutrition. (Two  
 lectures 12, 15 Mar.)

The same continued.

**Lectures:** Tu. Th. S. 9

TBC

Muscle in Exercise. (One lecture, 28 Apr.)

DR R. J. BARNES

The Circulation and Exercise (One lecture, 30  
 Apr.)

DR D. GORDON

Training (One lecture, 3 May)

Exercise in Stressful Environments. (One  
 lecture, 5 May)

DR R. J. BARNES

Limits of Performance, oxygen kinetics. (One  
 lecture, 7 May)

DR MATTHEW J. MASON

Man and Other Vertebrates in Arctic and  
 Desert (Four lectures, 10–17 May)

DR MICHAEL J. MASON

Man in Space. (One lecture, 19 May)

The same continued.

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

## 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/ps1b/>

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, 7 Oct.)

DR D. E. HANKE

Genetic Manipulation of Plants. (Two lectures, 9–12  
 Oct.)

DR J. M. HIBBERD AND PROF. A. SMITH

Photosynthesis and Management of Reserves. (Eight  
 lectures, 14 Oct.–30 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, 2 Nov.–30 Nov.)

DR K. JOHNSTONE

Comparative Microbiology. (Three lectures,  
 beginning 20–25 Jan.)

PROF. SIR D. J. BAULCOMBE AND DR J. P. CARR

Plant Pathology. (Ten lectures, 27 Jan.–17 Feb.)

DR N. CUNNIFFE

Epidemiology. (Three lectures, 19–24 Feb.)

DR J. BALK

Beneficial Plant – Microbe Interactions. (Three  
 lectures, 26 Feb.–3 Mar.)

DR D. E. HANKE

Plant Development. (Five lectures, 5–15 Mar.)

PROF. A. SMITH

Plants and Animals. (Three lectures, 26–30  
 Apr.)

*Please note the early start of this course.*

DR D. A. COOMES

Conservation. (Four lectures, 3–10 May)

DR A. N. OTHER

Exploitation of Plants. (Three lectures,  
 12–17 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 2011; places are limited and are allocated in order of application. Students should register for all biological practical courses on Wednesday, 6 Oct. between 11.00 and 12.15 in the *Senate House*.