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

MICHAELMAS 2004 LENT 2005 EASTER 2005

QUANTITATIVE BIOLOGY

Course Organiser: Prof. C. A. Gilligan E-mail: chris.gilligan@plantsci.cam.ac.uk

Quantitative Biology is intended for those students who have studied Mathematics at 'A' level. It does not provide a qualification for offering Mathematics in Part IB of the Natural Sciences Tripos.

New material, comprising the course syllabus will be presented in the Tuesday and Thursday lectures. Additional worked examples, together with revision to aid the transition from 'A' level will be presented in the Saturday lectures. There will be no more than six Saturday lectures during the Michaelmas and Lent terms and three in the Easter term.

Lectures will be held in the *Large Lecture Theatre, Department of Plant Sciences*, **Computer practicals** in *the Titan Teaching Room, New Museum Site*, **Examples classes** in the *Arts School, Room B, New Museum Site*, unless otherwise stated.

Lectures. Tu. Th. 9

PROF. C. A. GILLIGAN
Introduction to the Growth and Decline of Populations. (Ten lectures, 7 Oct. – 9 Nov.)

PROF. C. P. ELLINGTON
Physiological Modelling. (Six lectures, 11–30 Nov.)

MR J. J. TRAPP
Introduction to Modelling of Interacting Populations. (Seven lectures, 20 Jan.–10 Feb.)

DR J. GOG
Interacting Populations: Ecological Applications. (Four lectures, 15–24 Feb.)

DR W. AMOS
Introduction to Statistical Methods. (Five lectures, 1–15 Mar.)

DR R. JOHNSTONE
Optimisation and Game Theory. (Four lectures, 28 Apr. – 10 May)

DR W. AMOS
Introduction to Statistical Methods. (Four lectures, 12–24 May)

Supplementary lectures. S. 9
These lectures are to aid the transition from A level, and to present worked examples from the syllabus.

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

PROF. C. A. GILLIGAN, PROF. C. P. ELLINGTON AND DR R. JOHNSTONE

MR J. J. TRAPP, DR J. GOG, DR W. AMOS, AND DR R. JOHNSTONE

DR R. JOHNSTONE

Examples Classes: Students should register for all biological practical courses on Tu. 5 Oct. between 2.00 and 3.45 in *the Senate House*.

PART IB

ADVANCED PHYSICS

Course Organiser: Dr C. J. B. Ford E-mail IB-advanced-physics@phy.cam.ac.uk

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

DR C. J. FORD
Electromagnetism. Tu. Th. Sa. 9 (Not last two Sa.)

DR J. ELLIS
Classical Dynamics. (First ten lectures) Tu. Th. Sa. 9

DR W. ALLISON
Statistical Physics. (Last nine lectures) Tu. Th. 9

DR W. ALLISON
The same continued. (First seven lectures)

Those not taking NST Part IB Mathematics:

DR S. WITHINGTON
Mathematics and Theoretical Physics. M. F. 11 *Room B, Arts School, Bene't Street*

Those taking NST Part IB Mathematics:

PROF. M. WARNER
Methods of Mathematical Physics. M. W. 9 *Room 1, Mill Lane Lecture Rooms*

Laboratory Work

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

DR R. J. BUTCHER
Waves and Optics.

Laboratory Work takes place at the *Cavendish Laboratory (West Cambridge)*. The experimental laboratories are open M. 2–6, Tu. 10–6, Th. 10–6 and F. 2–6. Students will be allocated periods within these times. All students must attend an introductory talk and register for **Laboratory Work** at 2.30 p.m. on W. 6 Oct. at the *Cavendish Laboratory*. **Laboratory work is continuously assessed**.

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NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2004 LENT 2005 EASTER 2005

ANIMAL BIOLOGY

Course Organiser: Dr B. J. McCabe E-mail: bjm1@cam.ac.uk

Candidates who intend to read Part II Zoology and who have not taken Evolution and Behaviour are recommended to attend one of the Easter Vacation Field Courses (if running). Details are posted in the Laboratory.

Lectures will take place at the *Elementary Lecture Theatre Department of Zoology* M. W. F. 11

PROF. N. B. DAVIES AND PROF. P. P. G. BATESON
Behaviour and Ecology. (Twelve lectures, beginning 8 Oct.)
PROF. S. B. LAUGH LIN AND PROF. M. BURROWS
Brains and Behaviour. (Twelve lectures, beginning 5 Nov.)

PROF. H. P. MADDRELL AND DR W. A. FOSTER
Insect Biology. (Twelve lectures, beginning 21 Jan.)
DR J. A. CLACK AND DR A. E. FRIDAY
Vertebrate Evolutionary Biology. (Twelve lectures, beginning 18 Feb.)

PROF. C. P. ELLINGTON AND DR M. T. WILKINSON
Physiology and the Environment. (Twelve lectures, beginning 27 Apr.)
Note the early start of this course.

Practical work: Students will be expected to do four hours practical work per week between 12 and 5 on Wednesdays *or* 11 and 5 on Thursdays. 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 R. W. Farndale E-mail: rwf10@cam.ac.uk

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 Farndale 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* at M. W. F. 10.

Genes and proteins: macromolecules in action
DR N. M. STANDART
Gene Cloning and Manipulation. (Five lectures, beginning 8 Oct.)
DR B. LUISI
Control of Gene Expression: DNA Structure and DNA-Protein Interactions. (Five lectures, beginning 20 Oct.)
DR C. W. J. SMITH
Control of Gene Expression: Transcription, RNA Processing and Translation. (Five lectures, beginning 1 Nov.)
PROF. SIR T. BLUNDELL
Protein Structure, Flexibility and Function. (Five lectures, beginning 12 Nov.)
DR F. HOLLFELDER
Enzyme Catalysis and Protein Engineering. (Five lectures, beginning 24 Nov.)

Energy transduction, cell signalling and cell proliferation
DR G. C. BROWN
Energy Transduction in Bacteria, Mitochondria and Chloroplasts. (Six lectures, beginning 19 Jan.)
DR K. M. BRINDLE
Control of Metabolism. (Six lectures, beginning 2 Feb.)
DR R. W. FARNDALE
Transmembrane Signalling; Molecules and Mechanisms. (Six lectures, beginning 16 Feb.)
DR D. M. CARRINGTON
Control of Eukaryotic Cell Growth. (Four lectures, beginning 2 Mar.)
DR D. M. CARRINGTON
Oncogenes, Tumour Suppressor Genes, and Cancer. (Four lectures, beginning 11 Mar.)

Biochemistry of microorganisms
DR M. WELCH AND PROF. G. P. C. SALMOND
Bacterial Chemotaxis, Signalling, and Secretion Systems. (Five lectures, beginning 27 Apr.)
DR D. M. CARRINGTON
Molecular Biology of Protozoa. (Four lectures, beginning 9 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. 6 Oct. between 11.00 and 12.15 in *the Senate House*.

CELL AND DEVELOPMENTAL BIOLOGY

Course Organiser: Dr T. Krude E-mail: tk1@mole.bio.cam.ac.uk
Course Website: www.bio.cam.ac.uk/teaching/MCB/

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

DR T. KRUDE AND PROF. S. P. JACKSON
Molecular Biology of the Cell Nucleus. (Nine lectures, 7–26 Oct.)
DR D. SUMMERS AND DR P. OLIVER
Genetic Systems of Prokaryotes. (Six lectures, 28 Oct. – 9 Nov.)
DR B. SANSON
Genome Structure and Evolution. (Five lectures, 11–20 Nov.)
DR D. MACDONALD
Molecular Genetics of Yeast Cells. (Four lectures, 23–30 Nov.)

PROF. J. C. GRAY
Organelle Biogenesis. (Six lectures, 18–29 Jan.)
DR M. SEGAL
Cytoskeleton. (Four lectures, 1–8 Feb.)
DR P. DUPREE
Membrane Traffic. (Four lectures, 10–17 Feb.)
DR K. JOHNSTONE AND DR H. SKAER
Intercellular Communication. (Four lectures, 19–26 Feb.)
DR H. SKAER
Development I. (Four lectures, 1–8 Mar.)
PROF. J. SMITH
Development II. (Four lectures, 10–17 Mar.)

PROF. M. AKAM
Development III. (Four lectures, 26 Apr.– 3 May)
DR D. HANKE AND DR J. HASELOFF
Development IV. (Six lectures, 5–17 May)

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*.

NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2004 **LENT 2005** **EASTER 2005**

CHEMISTRY A

Course Organiser: Dr J. H. Keeler E-mail: James.Keeler@ch.cam.ac.uk

All lectures will be given in *Lecture Theatre 2, Department of Chemistry, Lensfield Road*, on Tu. Th. S. 12 unless indicated.

DR A. J. STONE AND DR P. D. WOTHERS
Quantum Mechanics and Spectroscopy. (Seventeen lectures)
DR J. D. WALES
Symmetry and Bonding. (Six lectures)

DR J. D. WALES
Symmetry and Bonding. (Six lectures, continued)
DR J. H. KEELER
Molecular Energy Levels and Thermodynamics. (Fourteen lectures)
DR T. RAYMENT
Electrons in Solids. (Four lectures)

DR T. RAYMENT
Electrons in Solids. (Eleven lectures, continued)

Practical Chemistry. Michaelmas and Lent Terms M. Tu. W. Th. F. 1.45–5. Students must register in the *Department of Chemistry, Lensfield Road*, between 9 and 1 or 2 and 4 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 a.m. in the *Bristol-Myers Squibb Lecture Theatre.*

CHEMISTRY B

Course Organiser: Dr J. H. Keeler E-mail: James.Keeler@ch.cam.ac.uk

All lectures will be given in *Lecture Theatre 2, Department of Chemistry, Lensfield Road*, on Tu. Th. S. 9 unless indicated.

DR S. G. WARREN AND DR M. D. SMITH
Key Organic Reactions. (Twelve lectures)
DR N. BAMPOS
Structure Determination. (Six lectures)
DR A. E. H. WHEATLEY
Electron Deficient Compounds. (Six lectures)

DR R. A. LAYFIELD
Cooordination Chemistry. (Eight lectures)
DR P. T. WOOD
Organometallic Chemistry. (Six lectures)
DR J. M. GOODMAN AND DR P. D. WOTHERS
Shape and Organic Reactivity. (Ten lectures)

DR S. E. JACKSON AND DR F. J. LEEPER
Introduction to Chemical Biology. (Eleven lectures)

Practical Chemistry. Michaelmas and Lent Terms M. Tu. W. Th. F. 1.45–6 Students must register in the *Department of Chemistry, Lensfield Road* between 9 and 1 or 2 and 4 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 10 a.m. in the *Bristol-Myers Squibb Lecture Theatre.*

ECOLOGY

Course Organiser: Dr M. E. N. Majerus E-mail: m.majerus@gen.cam.ac.uk
Course Website: www.plantsci.cam.ac.uk/plantsci/teaching/ec1b/index.html

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

DR D. K. A. BARNES
The Global Marine Ecosystem. (Six lectures, 8–20 Oct.)
DR E. V. J. TANNER, PROF. H. GRIFFITHS AND DR D. A. COOMES
The Ecology of Change. (Eighteen lectures, 22 Oct – 30 Nov.)

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 M. E. N. MAJERUS
Ecological Genetics. (Six lectures, 18 Feb.– 2 Mar.)
DR A. MANCIA
Ecological Dynamics. (Six lectures, 4–16 Mar.)

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

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NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2004 LENT 2005 EASTER 2005

EXPERIMENTAL PSYCHOLOGY

Course Organiser: Dr J. Russell E-mail: jrl11@hermes.cam.ac.uk

Lectures will be held in *Lecture Theatre 3, Department of Physiology* at 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. J. D. MOLLON AND OTHERS
Human Experimental Psychology: Perception; Attention; Memory; Action; Psycholinguistics. (Twenty-three lectures, 9 Oct. – 30 Nov.)

TO BE ANNOUNCED
Neuropsychology of Language. (Two lectures, 20, 22 Jan.)
PROF. A. DICKINSON
Biological Aspects of Learning, Memory, Motivation and Emotion, Performance. (Three lectures, 25–29 Jan.)
DR I. P. L. MCLAREN
Learning and Memory. (Four lectures, 1–8 Feb.)
DR E. HILL
Developmental Psychology. (Six lectures, 10–22 Feb.)
DR L. M. SAKSIDA
Decision Making. (Two lectures, 24, 26 Feb.)
MS E. S. BENNETT
IQ. (Two lectures, 1, 3 Mar.)
PROF. M. P. HAGGARD
Measurement in Psychology. (Two lectures, 5, 8 Mar.)
MS E. S. BENNETT
Social Psychology. (Three lectures, 10–15 Mar.)

PROF. S. BARON-COHEN
Abnormal Psychology. (Six lectures, 28 Apr.–10 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 C. De La Rocha E-mail: christina00@esc.cam.ac.uk

All lectures are in the *Tilley Lecture Room, Department of Earth Sciences* on M. W. F. 10

DR N. H. WOODCOCK
Maps and Structures. (Eight lectures)
PROF. R. S. WHITE
Earth Systems. (Eight lectures)
DR. A. TRIPATI
Evolution of the Hydrosphere. (Eight lectures)

DR J. A. D. DICKSON
Biogenic and Chemical Sediments. (Seven lectures)
PROF. I. N. MCCAVE
Mechanics of Sediment Transport and Clastic Sedimentology. (Nine lectures)
DR N. J. BUTTERFIELD
Evolutionary Palaebiology and Micropalaeontology. (Eight lectures)

Introduction to Southwest England field trip. Th. 10 (17 Mar.)

Geological Sciences Field Class. (12–22 Apr.)

DR D. B. NORMAN
Vertebrate Palaeontology. (Five lectures)
DR N. H. WOODCOCK
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, 6 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 M. Holness E-mail: Marian@esc.cam.ac.uk

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)
DR R. J. HARRISON
Principles of Mineral Behaviour. (Eight lectures)
PROF. M. J. BICKLE
Introductory Igneous Petrology. (Four lectures)
PROF. M. J. BICKLE
Chemical Differentiation of the Earth. (Three lectures)

DR D. M. PYLE
Magmatic Settings. (Five lectures)
DR J. M. BUNBURY
Metamorphic Mineralogy. (Five lectures)
DR T. J. B. HOLLAND
Introduction to Metamorphism. (Nine lectures)
DR M. B. HOLNESS
Metabasites. (Five lectures)

Introduction to South West England field trip. Th. 10 (17 Mar.)

Geological Sciences Field Class (12–22 Apr.)

DR A. GALY
Evolution of the Himalayas. (Five lectures)
DR S. GIBSON
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, 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.

NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2004 **LENT 2005** **EASTER 2005**

HISTORY AND PHILOSOPHY OF SCIENCE

Course Organiser: Prof. S. Schaffer, E-mail: sjs16@cam.ac.uk

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

DR L. KASSELL AND PROF. S. SCHAFFER
Natural Philosophy. M. 5 (weeks 1–8); F. 5 (weeks 1–4)
PROF. M. KUSCH
Epistemology: Radical Scepticism. W. 5 (weeks 1–4)
PROF. M. KUSCH
Sociology of Scientific Knowledge. W. 5 (weeks 5–8)
DR T. LEWENS
Philosophy of Science. F. 5 (weeks 5–8)

DR J. AGAR, PROF. J. FORRESTER AND DR N. HOPWOOD
History of Science and Medicine. M. 5 (weeks 1–8); W. 5 (weeks 5–8)
PROF. P. LIPTON
Philosophy of Science. F. 5 (weeks 1–8)
DR T. LEWENS
Philosophy of Science. W. 5 (weeks 1–4)

DR J. AGAR, PROF. J. FORRESTER AND DR N. HOPWOOD
History of Science and Medicine. F. 5 (weeks 1–4)
DR I. SINGH
Psychopharmacology. W. 5 (weeks 1–4)
DR R. JENNINGS
Philosophy of Science. M. 5 (weeks 1–4)

MATERIALS SCIENCE AND METALLURGY

Course Organiser: Dr J. A. Elliott E-mail: PartIB@msm.cam.ac.uk

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

DR E. R. WALLACH
Metals and Alloys. (Twelve lectures)
DR G. T. BURSTEIN
Environmental Behaviour of Materials. (Twelve lectures)

Industrial Visits
Details to be announced.

DR J. A. ELLIOTT
Polymers. (Nine lectures)
DR S. M. BEST
Processing and Properties of Ceramics. (Six lectures)
DR W. J. CLEGG
Deformation of Solids. (Nine lectures)

The same continued.

DR P. A. MIDGLEY
Electrical and Magnetic Properties of Materials. (Nine lectures)

Practical Work: Either Tu. 2–4 *or* Th. 2–4 *or* F. 9–11 and one further hour each week between 9–12.45 *or* 2–5 on any weekday. Students should register for practical classes in the *Department of Materials Science and Metallurgy* between 9.30 a.m. and 12.30 p.m. or 2.30 and 4.30 p.m. on Tu. 5 Oct. or W. 6 Oct.

MATHEMATICS

Course Organiser: E-mail: nst@maths.cam.ac.uk

Students taking this course must also register electronically for the assessed **Computer Practical Course** before 4 Nov. 2004. Details are given in the course booklet distributed at the first lecture of Mathematical Methods I in Oct. 2004 and can also be found on www.maths.cam.ac.uk/undergrad/tripos/nstcomp/

All lectures will be delivered in the *Chemical Laboratory, Lensfield Road* on M. W. F. 11 unless otherwise stated

DR S. J. COWLEY
Mathematical Methods I.

Examples Class W. 2.15–4.15 (Two classes, 10, 24 Nov.) *Arts School, Bene't Street, Room A*

DR M. SPIVACK
Mathematical Methods II.

Examples Class W. 2.15–4.15 (Two classes, 16 Feb., 9 Mar.) *Arts School, Bene't Street, Room A*

DR M. E. MCINTYRE
Mathematical Methods III. (Ten lectures)

Examples Class W. 2.15–4.15 (Two classes, 4, 11 May) *Arts School, Bene't Street, Room A*

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NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2004 **LENT 2005** **EASTER 2005**

MINERAL SCIENCES

Course Organiser: Dr I. Farnan E-mail: i.farnan@esc.cam.ac.uk

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

DR M. WELCH
Degrees of Order in Solids. (Fourteen lectures)
DR I. FARNAN
Transport Properties of Minerals. (Ten lectures)

PROF. M. A. CARPENTER
Symmetry and Physical Properties. (Ten lectures)
DR E. ARTACHO
Phase Transitions. (Eight lectures)
DR S. RIOS BANOS
Bonding and Lattice Dynamics. (Six lectures)

DR E. ARTACHO
Applications of Mineral Sciences. (Nine lectures)

Practical Work. M. F. 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 Website: www.physiol.cam.ac.uk/

All lectures take place in *Physiology Lecture Theatre 3* at Tu. Th. S. 12

PROF. P. A. MCNAUGHTON
Introduction to the Brain. (One lecture, 7 Oct.)
DR M. EDWARDSON
G-Protein Coupled Receptors. (One lecture, 9 Oct.)
PROF. R. C. THOMAS
Electrical Properties of Neurons. (Four lectures, 12–19 Oct.)
PROF. W. A. HARRIS
Neural Determination. (Four lectures, 21–28 Oct.)
DR M. EDWARDSON
Chemical Properties of Neurons. (Four lectures, 31 Oct. – 6 Nov.)
DR R. H. S. CARPENTER
Vision. (Six lectures, 9–20 Nov.)
PROF. L. K. TYLER
Language and the Brain. (Two lectures, 23–25 Nov.)
DR I. M. WINTER
Hearing. (Three lectures, 27 Nov. – 2 Dec.)

PROF. P. A. MCNAUGHTON
Somatosensation and Pain. (Four lectures, 18–25 Jan.)
DR D. PARKER
Motor System. (Seven lectures, 27 Jan.–10 Feb.)
DR H. G. KRAPP
Sensorimotor Integration. (Three lectures, 12–17 Feb.)
DR M. LANDGRAF
Development of Neural Connections. (Four lectures, 19–26 Feb.)
PROF. B. J. EVERITT
Motivation and Emotion. (Four lectures, 1–8 Mar.)
DR B. J. MCCABE
Synaptic Efficacy. (Four lectures, 10–17 Mar.)

DR T. J. BUSSEY
Learning and Memory. (Four lectures, 26 Apr. – 3 May)
DR T. J. BUSSEY
Higher Functions of the Nervous System. (Three lectures, 5–10 May)
DR H. R. MATTHEWS
Olfaction and Taste. (Two lectures, 12–14 May)

Practical Work: 3 hour practical classes Th. 2–5 *or* Tu. 2–5; 1 hour practical classes M. 12–1 or 2–3. Students should register for all biological practical courses on W. 6 Oct. between 11.00 and 12.15 in *the Senate House*.

NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2004 LENT 2005 EASTER 2005

PATHOLOGY

Course Organiser: Dr I. B. Kingston E-mail: ibk1000@cam.ac.uk

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.)
DR 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 Histocompatability Complex; T Cells. (Four lectures, beginning 18 Oct.)
PROF. J. TROWSDALE
Tolerance; Autoimmunity; Hypersensitivity; Transplantation / Immune Response to Infectious Agents. (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 D. DUNNE
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 (One lecture, 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. M. A. STANLEY
The Regulation of Tissue Growth and Organisation; Clinical Pathology of Tumours; Biology of Tumours; Genetic Basis of Neoplasia; Causes of Cancer. (Five lectures, beginning 4 Feb.)
DR C. PRINT
Blood Vessels and Atherosclerosis; Haemostasis, Thrombosis and Embolism; Ischaemia, Infaction, Heart Failure and Hypertension. (Three lectures, beginning 16 Feb.)
DR P. EDWARDS
Discovering Genes Mutated in Human Cancer I and II. (Two lectures, beginning 23 Feb.)
PROF. A. H. WYLLIE
New Theraputic Targets in Cancer. (One lecture, 28 Feb.)

Infectious Diseases and Host-Pathogen Interactions Option
DR S. EFSTATHIOU
Emerging Virus Infections; Virus Latency and Immune Invasion; HIV. (Three lectures, beginning 2 Mar.)
DR P. DIGARDS
Flu Pandemics. (One lecture, 9 Mar.)
DR S. MELVILLE
Zoonosis – Trypansomes; Zoonosis-Leishmaniasis. (Two lectures, beginning 11 Mar.)
DR J. AJIOKA
Zoonosis – Toxoplasmosis. (One lecture, 16 Mar.)

Infectious Diseases and Host-Pathogen Interactions Option (continued)
PROF. D. MASKELL
The Evolution of Pathogenic Bacteria; Bacterial Zoonosis. (Twelve lectures, beginning 27 Apr.)
PROF. M. A. STANLEY
Tuberculosis. (One lecture, 2 May)
DR R. BUJDOSO
Molecular Characteristics of PrP^{C} and PrP^{Sc}; Scrarie, BSE, CJD. (Two lectures, beginning 4 May)

Practical Work: Revision Classes
Department of Pathology
Histopathology
Th. F. 12, 13 May a.m. and p.m.
Microbiology
W. F. 18, 20 May a.m. and p.m.

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 October.

PHARMACOLOGY

Course Organiser: Dr T. P. Fan E-mail: tpf1000@cus.cam.ac.uk

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

PROF. C. W. TAYLOR
Drugs and Receptors. Diabetes Mellitus. (Seven lectures, 8–22 Oct.)
PROF. M. J. WARING
Chemotherapy and Drug Interactions with DNA. (Six lectures, 25 Oct.–5 Nov.)
PROF. R. F. IRVINE
Intracellular Messengers. (Four lectures, 8–15 Nov.)
DR H. W. VAN VEEN
Synaptic Pharmacology. (Five lectures, 17–26 Nov.)
DR P. J. RICHARDSON
Drug Discovery and Pharmacogenomics. (Two lectures, 29 Nov., 1 Dec.)

DR T. P. FAN
Inflammation and Peripheral Control of Pain. (Six lectures, 21 Jan. – 2 Feb.)
DR R. MURRELL-LAGNADO
Pharmacokinetics, Drug Metabolism and General Anaesthetics. (Six lectures, 4–16 Feb.)
DR C. R. HILEY
Cardiovascular and Renal Pharmacology. (Twelve lectures, 18 Feb.–16 Mar.)

DR M. A. BARRAND
Toxicology. (Two lectures, 27, 29 Apr.)
Note the earlier start of this course
DR A. J. MORTON
Central Nervous System: Neurodegeneration, Psychoses, Affective Disorders, Central Control of Pain and Opiates. (Seven lectures, 2–16 May)

Practical Work. (Tu. 1–2 *or* W. 1–2) and (Tu. 2–5 *or* W. 2–5). A detailed timetable will be posted in the Department. Students should register for all biological practical courses on W. 6 Oct. between 11.00 and 12.15 in *the Senate House*.

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NATURAL SCIENCES TRIPOS, PART IB (continued)

MICHAELMAS 2004 **LENT 2005** **EASTER 2005**

PHYSICS

Course Organiser: Dr R. D. E. Saunders E-mail: IB-single-physics@phy.cam.ac.uk

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

DR N. GREENHAM
Oscillations, Waves and Optics. M. F. 12
DR R. D. E. SAUNDERS
Experimental Methods. W. 12

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

DR D. R. WARD
Classical Thermodynamics. M. W. F. 12 (First ten lectures)
DR H. P. HUGHES
Quantum Physics. M. W. F. 12 (Last fourteen lectures)

DR R. J. BUTCHER
Waves and Optics.

DR H. P. HUGHES
The same continued. (First ten lectures)

Laboratory Work takes place at the *Cavendish Laboratory (West Cambridge)*. The experimental laboratories are open. M. 2–6, Tu. 10–6, Th. 10–6 and F. 2–6. Students will be allocated periods within these times. All students must attend an introductory talk at 2.30 p.m. on W. 6 Oct. at the *Cavendish Laboratory*. Students taking Part IB Physics but *not* IB Advanced Physics must also register between 2.00 p.m. and 4.00 p.m. on Tu. 5 Oct. at the *Cavendish Laboratory*, where they will be allocated practical sessions that fit with their other IB subjects. **Laboratory work is continuously assessed**.

PHYSIOLOGY

Course Organiser: Dr R. J. Barnes E-mail: rjb4@cam.ac.uk
Course Website: www.physiol.cam.ac.uk

Lectures are given in the *Department of Physiology, Lecture Theatre 1*, Tu. Th. Sa. 12 (Michaelmas and Lent Terms); M. W. F. 9 (Easter Term)

DR R. J. BARNES
Introduction, the Autonomic Nervous System and the Cardiovascular System. (Six lectures, 7–19 Oct.)
DR MICHAEL J. MASON
Respiration. (Six lectures, 21 Oct. – 2 Nov.)
DR D. J. TOLHURST
Endocrinology. (Three lectures, 4–9 Nov.)
DR S. O. SAGE
Renal Physiology and Body Fluid Homeostasis. (Nine lectures, 11–30 Nov.)

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

DR A. J. FORHEAD
Reproduction. (Six lectures, 20 Jan. – 1 Feb.)
DR S. K. L. ELLINGTON
Development. (Two lectures, 3, 5 Feb.)
DR D. R. J. BAINBRDGE AND DR J. GIBSON
Biology of Pregnancy. (Four lectures, 8–15 Feb.)
DR D. R. J. BAINBRIDGE
Birth, Lactation and the Neonate. (Three lectures, 17–22 Feb.)
DR MATTHEW J. MASON
Digestion and Absorption. (Seven lectures, 24 Feb. – 10 Mar.)
DR M. P. MAHAUT-SMITH
Weight Regulation and Nutrition. (Two lectures, 12, 15 Mar.)

The same continued.

DR J. JENNER
Muscle in Exercise. (One lecture, 29 Apr.)
DR R. J. BARNES
Cardiovascular and Respiratory Systems in Exercise. (Three lectures, 2–6 May)
DR C. SPEED
Training, Muscle and the Circulation. (One lecture, 9 May)
DR D. GORDON
Exercise in Extreme Environments. (One lecture, 11 May)
A. N. OTHER
Man in the Arctic. (One lecture, 13 May)
DR MATTHEW J. MASON
Man in the Desert. (One lecture, 16 May)
DR MICHAEL J. MASON
Man in Space. (One lecture, 18 May)

The same continued.

Practical Work: Students should register for all biological practical courses on W. 6 Oct. between 11.00 and 12.15 in *the Senate House*.

PLANT AND MICROBIAL SCIENCES

Course Organiser: Dr B. J. Glover E-mail: bjg26@cam.ac.uk
Course Website: www.plantsci.cam.ac.uk/plantsci/teaching/content.html

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

PROF. R. A. LEIGH
Introduction and Overview. (One lecture, 7 Oct.)
PROF. J. C. GRAY
Current Molecular Tools and Techniques. (Two lectures, 9–12 Oct.)
DR J. M. HIBBERD AND DR A. G. SMITH
Photosynthesis and Management of Reserves. (Eight lectures, 14–30 Oct.)
PROF. R. A. LEIGH, PROF. H. GRIFFITHS AND DR E. V. J. TANNER
Plants in the Abiotic Environment: Water, Nutrients and Temperature. (Thirteen lectures, 2–30 Nov.)

DR K. JOHNSTONE
Environmental Microbiology. (Six lectures, 20 Jan. – 1 Feb.)
DR J. M. DAVIES
Beneficial Plant–Microbe Interactions. (Five lectures, 3–12 Feb.)
DR J. P. CARR
Plant Pathology. (Seven lectures, 15 Feb. – 1 Mar.)
DR B. J. GLOVER
Plant Development. (Six lectures, 3–15 Mar.)

DR A. G. SMITH
Plants and Animals. (Three lectures, 28 Apr. – 3 May)
DR D. A. COOMES
Conservation. (Four lectures, 5–12 May.)
PROF. J. C. GRAY
Exploitation of Plants. (Three lectures, 14–19 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, five of the eight weeks of the Lent Term, and in three 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 2005; places are limited and are allocated in order of application. Students should register for all biological practical courses on W. 6 Oct. between 11.00 and 12.15 in *the Senate House*.