

## NATURAL SCIENCES TRIPOS, PART II

MICHAELMAS 2006

LENT 2007

EASTER 2007

## ASTROPHYSICS

Course Organiser: (e-mail)

Course Website: <http://www.ast.cam.ac.uk/teaching/undergrad/>

All lectures will be delivered in *the Raymond and Beverly Sackler Lecture Theatre, Hoyle Building, Institute of Astronomy* unless otherwise stated

DR C. D. MCKAY  
Introductory Astrophysics M. F. 12.15, Tu. 11.15  
DR C. J. CLARKE  
Statistical Physics Tu. 10, Th. F. 11.15  
PROF. G. P. EFSTATHIOU  
Astrophysical Fluid Dynamics M. W. 11.15, Th. 10  
DR M. HAEHNELT  
Theory of Relativity M. W. F. 10

PROF. G. F. GILMORE  
Stellar Dynamics and Structure of Galaxies.  
M. F. 12:15 W. 11.15  
DR R. G. MCMAHON  
Physical Cosmology M. 11.15, Tu. Th. 10  
DR I. R. PARRY  
Topics in Contemporary Astrophysics.  
Tu. Th. F. 11.15  
DR P. C. HEWETT  
Structure and Evolution of Stars. M. W. F. 10

## BIOCHEMISTRY

## BIOLOGICAL AND BIOMEDICAL SCIENCES: MAJOR SUBJECT BIOCHEMISTRY

Course Organiser: Professor C. J. Howe (e-mail: [ch26@mole.bio.cam.ac.uk](mailto:ch26@mole.bio.cam.ac.uk))Course Website: <http://www.bioc.cam.ac.uk/teaching/partii/>

Lectures are given in the *Department of Biochemistry, Downing Site building*

The course starts with an introductory lecture by PROF. SIR TOM BLUNDELL at 9 a.m. on M. 2 October.

Core course lectures take place at 9 a.m. and 10.30 a.m. Option course lectures take place throughout the day in Lent Term. Detailed time-tables will be posted in the Department of Biochemistry.

The Biological and Biomedical Sciences (Major Subject Biochemistry) course consists of the core lectures in the Michaelmas Term and two options in the Lent Term.

## Core lectures

PROF. E. D. LAUE  
Aspects of protein structure: genome to proteome (Five lectures, beginning 2 Oct.)  
DR M. WELCH  
Thermodynamics refresher for biochemists (One lecture, 6 Oct.)  
DR K. WEISSMAN  
Chemistry refresher for biochemists (One lecture, 6 Oct.)  
PROF. C. W. J. SMITH  
Eukaryotic mRNA synthesis (Five lectures, beginning 9 Oct.)  
PROF. C. J. HOWE  
Gene expression in plants (Four lectures, beginning 9 Oct.)  
DR B. LUISI  
Protein synthesis and translational control (Five lectures, beginning 12 Oct.)  
DR D. M. CARRINGTON  
Introduction to the problem-based bioinformatics project (One lecture, Oct. 13)  
DR D. M. CARRINGTON  
DNA recombination in genetic exchange and gene expression (Four lectures, beginning 16 Oct.)  
DR T. R. HESKETH  
Signalling pathways in eukaryotic cells (Four lectures, beginning Oct. 23)  
DR P. DUPREE  
Protein targeting to the ER (Three lectures, beginning 23 Oct.)  
DR K. WEISSMAN  
Enzyme structure and function (Five lectures beginning 30 Oct.)  
DR A. A. GRACE  
Disease genes: function and manipulation (Two lectures, beginning 30 Oct.)

## Options lectures

1. PROF. G. P. C. SALMOND AND OTHERS  
Bacterial virulence and antimicrobial chemotherapy (Fifteen lectures)  
Option Organiser: Prof. G. P. C. Salmond  
2. DR R. W. BROADHURST AND OTHERS  
Proteins, nucleic acids and their interactions (Fifteen lectures)  
Option Organiser: Dr R. W. Broadhurst  
3. DR M. D. BRAND AND OTHERS  
Mitochondria and Bioenergetics (Fifteen lectures)  
Option organiser: Dr M. D. Brand  
4. DR P. DUPREE AND OTHERS  
Plant cell and molecular biology (Fifteen lectures)  
5. PROF. C. W. J. SMITH AND OTHERS  
Control of gene expression in eukaryotes (Fifteen lectures in part joint with Part II Zoology.)  
Option Organisers: Prof. C. W. J. Smith and Dr T. Krude  
6. PROF. K. SIDDLE AND OTHERS  
Medical biochemistry. Obesity & diabetes – from genes to pathology (Fifteen lectures)  
Option Organiser: Prof. K. Siddle  
7. DR F. HOLLFELDER AND OTHERS  
Enzyme mechanisms and the evolution of enzyme function (Fifteen lectures)  
Option Organiser: Dr F. Hollfelder  
8. DR A. A. GRACE AND OTHERS  
Cardiovascular molecular and cellular biology (Fifteen lectures)  
Option Organisers: Dr A. A. Grace and Dr R. W. Farndale

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

PROF. K. M. BRINDLE  
Molecular imaging (Three lectures, beginning 1 Nov.)

DR A. P. JACKSON  
Protein sorting (Five lectures, beginning 6 Nov.)

PROF. G. P. C. SALMOND  
Bacterial signalling systems (Four lectures, beginning 6 Nov.)

PROF. J. O. THOMAS  
Protein-DNA interactions and gene expression (Five lectures, beginning 13 Nov.)

DR R. W. FARNDALE  
Adhesive and immune receptor signalling (Four lectures, beginning 13 Nov.)

DR T. STEVENS  
Bioinformatics: polypeptide similarity, families and super-families (Two lectures, beginning 17 Nov.)

DR T. HUBBARD  
Bioinformatics: large scale sequencing projects (Two lectures, beginning 21 Nov.)

DR D. OWEN  
G protein-based signalling (Four lectures, beginning 21 Nov.)

PROF. T. L. BLUNDELL  
G protein-based signalling (Two lectures, beginning 23 Nov.)

DR G. C. BROWN  
Mitochondria and cell death (Seven lectures, beginning 23 Nov.)

DR S. H. MCLAUGHLIN  
Protein folding *in vivo* (three lectures, beginning 29 Nov.)

**Data handling classes**

3.15–4.00, 26 Oct., 2.30–3.15, 27 Oct., 2.30–4.00, 2 Nov.

9. DR T. R. HESKETH AND OTHERS  
Oncogenes, tumour suppressor genes and carcinogenesis (Fifteen lectures in part joint with Option E of Part II Pathology.)  
Option Organisers: Dr T. R. Hesketh and Dr N. Affara

10. DR F. R. LIVESEY AND OTHERS  
Perspectives in stem cell biology (Fifteen lectures)  
Option Organiser: Dr F. R. Livesey

12. PROF. T. L. BLUNDELL AND OTHERS  
Biotechnology (Fifteen lectures)  
Option Organiser: Dr K. Lilley

13. DR D. M. CARRINGTON AND OTHERS  
Regulation of the eukaryotic cell cycle (Fifteen lectures)  
Option Organiser: Dr D. M. Carrington

14. DR A. P. KELLY AND OTHERS  
Molecular immunology (Fifteen lectures).  
Option Organiser: Dr A. P. Jackson

**Data handling classes**

3–3.45, 19, 26 Jan.

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

## BIOLOGICAL AND BIOMEDICAL SCIENCES

Course Organiser: Dr Keith Johnstone (e-mail: kj10@cam.ac.uk)  
 Course Website: <http://www.bio.cam.ac.uk/sbs/facbiol/bbs/index.html>

All students offer a Major Subject, a Minor Subject and a dissertation.

**Major Subjects:** Unless marked with a \*, Major Subjects take their lectures from the corresponding NST Part II subject.

Biochemistry	(see p. 187)
Genetics	(see p. 194)
Mechanisms of Disease*	
Pathology	(see p. 200)
Pharmacology	(see p. 202)
Physiology, Development and Neuroscience	(see p. 203)
Plant Sciences	(see p. 204)
Psychology	(see p. 205)
Zoology	(see p. 206)

**Minor Subjects:** Unless marked with a \*, Minor Subjects take their lectures from the related NST Part II subject.

Biology of Parasitism*	
Biological Anthropology*	(Any of Papers B3, B4 or B5 from Part IIB Biological Anthropology – see p. 223)
Education*	Any of the following papers from Part II of the Education Studies Tripos: Psychology of Education, Sociology of Education, Philosophy of Education, History of Education – see p. 237)
History of Medicine	(Either Paper 7 or Paper 8 from NST Part II History and Philosophy of Science – see p. 195)
History and Ethics of Medicine*	
Genetics	(Any of Modules M2, M4, or M5 from NST Part II Genetics – see p. 194)
Physiology, Development, and Neuroscience	(Either of Modules 7 or 14 from NST Part II Physiology, Development and Neuroscience – see p. 203)

## MAJOR SUBJECTS

## MECHANISMS OF DISEASE: FROM PROCESS TO PATIENT

Course Organisers: Dr J. H. Xuereb (e-mail: jhx1000@cam.ac.uk) and Dr A. Ibrahim (e-mail: aeik2@cam.ac.uk)

**Lectures** will be held at 10.30 a.m. daily in the *Lecture Theatre, Ground Floor, Department of Pathology, Tennis Court Road*, unless otherwise indicated.

**Seminars and Case Studies** will be held in the same venue at 1.30 p.m. unless otherwise indicated.

DR J. H. XUERE B  
Introduction to course. 3 Oct.

MS I. KUHN  
Electronic literature searches\* (Seminar) 3 Oct., 4 Oct., 5 Oct.

DR J. H. XUERE B  
An introduction to dissertations \*\*\* (Seminar) 2 Nov.

PROF. M.-Q. DU  
How to assess a scientific paper (Seminar) 3 Nov.

**Infectious disease and Immunodeficiency**

DR J. H. XUERE B  
Introduction to course. Tu. 3 Oct.

MS I. KUHN  
Electronic literature searches.\* group 1 (Seminar) Tu. 3 Oct.

DR N. BROWN  
Sepsis and the host's response to infection. W. 4 Oct.

MS I. KUHN  
Electronic literature searches.\* group 2 (Seminar) W. 4 Oct.

DR M. FARRINGTON  
Pneumonia – racing against the escalator. Th. 5 Oct.

MS I. KUHN  
Electronic literature searches.\* group 3 (Seminar) Thu. 5 Oct

PROF. A. LEVER  
Microbial invasion of the central nervous system.  
(Lecture: 1.30–2.30pm) F. 6 Oct.

Molecular biology of human immunodeficiency virus.  
M. 9 Oct.

Pathogenesis of AIDS. (Lecture: 1.30–2.30pm) M. 9 Oct.

DR A. CARMICHAEL  
Immunological controls of HIV infection. Tu. 10 Oct.

DR M. FARRINGTON AND DR T. WREGHITT  
Infection in the immunocompromised host. (Case study)  
Tues. 10th Oct.

DR J. H. XUERE B  
Dissertations: writing up \*\*\* (Seminar) 6 Feb.

**Tumour Biology**  
*Note the early start to this course*

DR M. ARENDS  
Familial predisposition to cancer: colorectal cancer. M. 15 Jan.

DR J. H. XUERE B  
Hypertension and neurofibromatosis. (Case study) M. 15 Jan.

DR H. SIMPSON  
Thyroid cancer. (Lecture: 1.30–2.30pm) Tu. 16 Jan.

DR M. GURNELL  
Approach to the problem of an enlarged thyroid gland. (Case study: 10.30–12.30) W. 17 Jan.

PROF. C. CALDAS  
Molecular biology of breast cancer. Th. 18 Jan.

DR A. CLUROE, DR S. BARTER, DR J. BENSON, DR M. MOODY  
A lump in the breast: a multidisciplinary approach to cancer. (Case Study) Th. 18 Jan.

DR M. ARENDS  
Infection and cancer: molecular biology of cervical cancer. F. 19 Jan.

**Skin**  
*Note the early start to this course*  
Dissertation Presentations (students)  
M. 23–F. 27 Apr.

DR J. STERLING  
Normal and abnormal skin structure. M. 23 Apr.

Skin as a renewable organ. Tu. 24 Apr.

Skin as an organ of immunity. W. 25 Apr.

Disorders of the skin immune system. Th. 26 Apr.

DR N. BURROWS  
Ehlers-Danlos syndrome. (Case Study: 2:00–4:00pm) F. 27 Apr.

**The Circulation**

DR C. SHANAHAN  
Atherosclerosis. M. 30 Apr.

DR J. STERLING  
Bullous skin disease. (Case Study) M. 30 Apr.

PROF. M. BENNETT  
Pathobiology of intervention in coronary artery disease. (Lecture: 10.30am–11.30am) Tu. 1 May

Coronary artery disease. (Case Study: 11.45am–1.30pm) Tu. 1 May

\* Seminar Room 9, Ground Floor, The Clinical School, Addenbrooke's Hospital

\*\* Seminar Room, First Floor, Department of Pathology

\*\*\* Greaves Room, First Floor, Department of Pathology

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

<p>DR D. KUMARARATNE Mechanisms of immunity to mycobacteria in humans. W. 11 Oct. Immunodeficiency – molecular mechanisms I. Th. 12 Oct. Immunodeficiency – molecular mechanisms II. (Lecture: 1.30–2.30pm) Th. 12 Oct.</p> <p>DR J. H. XUEREB AIDS in mother and child. (<i>Case study: 10:30–12:30</i>) F. 13 Oct.</p> <p>PROF. A. LEVER HTLV–infection and pathogenesis. (Lecture: 1.30–2.30pm) F. 13 Oct.</p> <p>DR A. IBRAHIM Hereditary angioneurotic oedema. (<i>Case study:</i> <i>10.30–12.30</i>) M. 16 Oct.</p> <p>DR D. KUMARARATNE Vaccines against bacterial meningitis. Tu. 17 Oct.</p> <p>DR T. BAGLIN Disseminated intravascular coagulation.** (<i>Case study</i>) W. 18 Oct.</p> <p>PROF. A. MINSON The nature of prions. Th. 19 Oct.</p> <p>DR J. H. XUEREB Phenotypic spectrum of spongiform encephalopathy. F. 20 Oct.</p> <p><b>Autoimmune disease and immunological malignancy</b></p> <p>DR J. BRADLEY Vascular endothelium – physiology and pathophysiology. M. 23 Oct.</p> <p>DR A. EXLEY The mucosal immune system. (Lecture: 1.30–2.30pm). M. 23 Oct. Lung defence: insight from clinical cases. (<i>Case study:</i> <i>10.30–12.30</i>) Tu. 24 Oct.</p> <p>DR R. TOOZE W. 25 Oct.: Lymphoma: an immunological perspective I.</p> <p>DR R. TOOZE Lymphoma: an immunological perspective II. Th. 26 Oct.</p> <p>DR J. H. GASTON The role of HLA antigens in the pathogenesis of arthritis. F. 27 Oct. The pathogenesis of rheumatoid arthritis. (Lecture: 1.30–2.30pm) F. 27 Oct.</p> <p>DR J. H. XUEREB Polyarthritis. (<i>Case study</i>) M. 30 Oct.</p> <p>DR J. H. GASTON Infectious agents and arthritis: Lyme disease and reactive arthritis. Tu 31 Oct.</p> <p>DR J. H. XUEREB Acute monoarthritis. (<i>Case study</i>) Tu. 31 Oct.</p> <p>DR J. H. GASTON Cytokines in arthritis – potential therapeutic targets. W. 1 Nov.</p> <p>DR J. H. XUEREB The syndromes produced in renal injury. Th. 2 Nov. An introduction to dissertations.*** (<i>Seminar</i>) Th. 2 Nov.</p> <p>PROF. M.-Q. DU How to assess a scientific paper. (<i>Seminar</i>) F. 3 Nov.</p> <p>DR K. SMITH Systemic lupus erythematosus I. M. 6 Nov. Systemic lupus erythematosus II. (Lecture: 1.30–2.30pm) M. 6 Nov.</p> <p>DR J. H. XUEREB Inflammation in the CNS. Tu. 7 Nov.</p> <p>DR J. H. XUEREB Thurs. 9th Nov.: Aetiology and pathogenesis of demyelinating diseases. Clinico-anatomical correlation in multiple sclerosis. (<i>Case study</i>) Th. 9 Nov.</p> <p>DR B. COTTRELL Infection &amp; immunity in inflammatory bowel disease. F. 10 Nov. Inflammatory bowel disease. (<i>Case Study</i>) F. 10 Nov.</p>	<p>PROF. A. WARREN Leukaemia I: transcriptional regulation of haemopoiesis. M. 22 Jan. Leukaemia II: molecular pathology. Tu. 23 Jan.</p> <p>DR J. CRAIG Pathogenesis and management of leukaemia. (<i>Case Study: 2.00–4.00pm</i>) Tu. 23 Jan.</p> <p>DR A. WHITEHEAD Biology of neoplasms in children. W. 24 Jan.</p> <p>PROF. V. P. COLLINS Cerebral gliomas: the pathway and molecular biology. Th. 25 Jan.</p> <p>DR J. H. XUEREB Cerebral oedema and intracranial pressure. (<i>Case Study</i>) Th. 25 Jan.</p> <p>DR C. BACON Tumour immunology. F. 26 Jan.</p> <p>DR N. COLEMAN Metabolic effects of cancer. (<i>Case study</i>) F. 26 Jan.</p> <p><b>Transplantation</b></p> <p>DR C. TAYLOR Histocompatibility. M. 29 Jan.</p> <p>PROF. A. BRADLEY Scope and challenges in clinical organ transplantation. Tu. 30 Jan.</p> <p>DR E. BOLTON Immunobiology of transplantation. W. 31 Jan. Molecular basis &amp; consequences of immunosuppression. Th. 1 Feb.</p> <p>PROF. A. BRADLEY Transplant tolerance &amp; xenotransplantation. F. 2 Feb.</p> <p>DR A. CHAUDHRY Kidney graft for complications of Diabetes Mellitus. (<i>Case Study</i>) F. 2 Feb.</p> <p>DR S. CHANDRAN Neural repair and stem cells – I. M. 5 Feb. Neural repair and stem cells – II. Tu. 6 Feb.</p> <p>DR J. H. XUEREB Dissertations: writing up.*** (<i>Seminar</i>) Tu. 6 Feb.</p> <p><b>Gestational, Paediatric and Inherited Diseases</b></p> <p>DR S. CHARNOCK-JONES Placental vascular morphogenesis. W. 7 Feb.</p> <p>DR R. TREACY AND DR I. SIMONIC Diagnosis of genetic disease. (<i>Case Study</i>) W. 7 Feb.</p> <p>DR S. CHARNOCK-JONES Pathogenesis of pre-eclampsia. Th. 8 Feb. Gestational trophoblastic disease. F. 9 Feb.</p> <p>DR J. H. XUEREB Essay-based discussion.** (Supervision: 1.30–2.30pm) F. 9 Feb. Reading week. M. 12–F. 16 Feb.</p> <p>DR K. ONG Fetal and early infant development. M. 19 Feb.</p> <p>DR A. WHITEHEAD Pathophysiology of disease in the premature baby. Tu. 20 Feb.</p> <p>DR C. ACERINI Growth disorders of childhood. (Lecture: 1.30–2.30pm) Tu. 20 Feb.</p> <p>PROF. I. HUGHES Disorders of sex development. Th. 22 Feb.</p> <p>DR R. ILES Molecular and cell biology of cystic fibrosis. F. 23 Feb.</p> <p>DR D. O'DONOVAN Biology and pathology of muscular dystrophy. M. 26 Feb.</p> <p>DR E. REID Hereditary spastic paraplegia. Tu. 27 Feb.</p>	<p>DR J. H. XUEREB Infectious endocarditis. (<i>Case Study</i>) Tu. 1 May</p> <p>DR M. GODDARD Ischaemic cardiomyopathy. W. 2 May</p> <p>DR J. H. XUEREB Essay-based discussion.** (<i>Supervision</i>) W. 2 May</p>
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\* Seminar Room 9, Ground Floor, The Clinical School, Addenbrooke's Hospital

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EASTER 2007

**Endocrine and Metabolic Disease**

DR A. CHAUDHRY  
The kidney as an endocrine organ. M. 13 Nov.  
Pathophysiology of progressive renal disease. Tu. 14 Nov.

DR J. BRADLEY  
End-stage renal failure. (*Case Study*) W. 15 Nov.

PROF. J. COMPSTON  
Bone cell physiology. Th. 16 Nov.

DR J. H. XUERE B  
Paget's Disease. (*Case Study*) Th. 16 Nov.

PROF. J. COMPSTON  
Pathology of metabolic bone disease. F. 17 Nov.

DR M. GURNELL  
Autoimmunity in the thyroid gland. M. 20 Nov.

PROF. S. O'RAHILLY  
Understanding human obesity. (Lecture 3:00-4:00pm)  
M. 20 Nov.

How insulin works and how it goes wrong. Tu. 21 Nov.

DR A. IBRAHIM  
Essay-based discussion.\*\* (Supervision: 1:30-2:30pm)  
Tu. 21 Nov.

DR A. CHAUDHRY  
W. 22 Nov.: Mechanisms of renal damage in diabetes  
mellitus.

DR J. H. XUERE B  
Fasting hypoglycaemia. (*Case Study*) W. 22 Nov.

PROF. K. CHATTERJEE  
Principles of nuclear hormone action. Th. 23 Nov.  
Nuclear receptors in human disease. F. 24 Nov.  
Cushing's syndrome. (*Case Study*) F. 24 Nov.

DR S. MIDDLETON  
Gastrointestinal hormones and peptides. M. 27 Nov.

DR J. H. XUERE B  
Clinico-anatomical correlation of pituitary adenoma.  
(*Case Study*) M. 27 Nov.

DR S. MIDDLETON  
Carcinoid syndrome. Tu. 28 Nov.

PROF. T. COX  
The lysosome – a gateway to treatment. W. 29 Nov.

DR D. O'DONOVAN  
Peroxisomal disorders. Th. 30 Nov.

PROF. V. P. COLLINS  
Mitochondrial encephalomyopathies. F. 1 Dec.

**Pathophysiology of some organ based systemic diseases**

**Brain**

DR J. H. XUERE B  
Alzheimer's disease: amyloid deposition in the  
brain. W. 28 Feb.

Alzheimer's disease and related disorders: tau  
pathology. Th. 1 Mar.

DR R. R. DAVIES  
Tau-related dementia syndromes. (*Case Study*)  
Th. 1 Mar.

DR J. H. XUERE B  
Parkinson's disease: mitochondrial dysfunction.  
F. 2 Mar.

Huntington's disease: protein misfolding & the  
ubiquitin-proteasome system. M. 5 Mar.

DR R. BARKER  
Movement disorders. (*Case Study*) M. 5 Mar.

**Hepatobiliary**

DR S. DAVIES  
Cirrhosis of the liver. Tu. 6 Mar.

DR S. DAVIES AND DR G. ALEXANDER  
Viral hepatitis. (*Case Study*) Tu. 6 Mar.

DR S. DAVIES  
Portal hypertension and liver failure. W. 7 Mar.

DR S. DAVIES AND DR R. PRASEEDOM  
Jaundice: pre- and post-hepatic. (*Case Study*)  
W. 7 Mar.

**Gastro-intestinal**

DR V. SAVE  
Coeliac disease: malabsorption & malignancy.  
Th. 8 Mar.

Steatorrhoea. (*Case Study*) Th. 8 Mar.

Pathophysiology of *Helicobacter* infection. F. 9  
Mar.

**Lung**

DR S. STEWART  
Respiratory tract hypersensitivity. M. 12 Mar.  
Irreversible airway narrowing & alveolar wall  
destruction. (Lecture: 1.30-2.30pm)  
M. 12 Mar.

DR M. GODDARD  
Pathophysiology of pulmonary  
microvasculature. Tu. 13 Mar.

DR R. ROSS RUSSELL  
Asthma and its consequences. (*Case study*)  
Tu. 13 Mar.

DR A. IBRAHIM  
Essay-based discussion.\*\* (Supervision:  
1.30-2.30pm) W. 14 Mar.

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MICHAELMAS 2006

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EASTER 2007

## MINOR SUBJECTS

## BIOLOGY OF PARASITISM

Course Organiser: Dr S. Lloyd (email: ssl1000@hermes.cam.ac.uk)

All lectures take place in the *Department of Pathology* on M. W. Th. 4 unless otherwise stated.

Lecture 1. Overview of developments. Basic morphology and life cycles  
 Lectures 2–8. Behavioural adaptations for transmission. Structural and behavioural modifications, recognition by free-living stages (trematodes, nematodes, arthropods), development in intermediate hosts  
 Lecture 9. Innate invertebrate responses to parasites (*Plasmodium* etc.)  
 Lectures 10–11. Season and hypobiosis of GI helminths of animals and man.  
 Lecture 12. Endemic stability and effects of inappropriate control.  
 Lectures 13–19. Zoonoses (*Taenia*, *Echinococcus*, *Trichinella*, *Toxocara*, *Giardia*, *Cryptosporidium*, *Fasciola* and fish-borne trematodes)  
 Lecture 20–22. Pathophysiology and pathology of parasites in gastrointestinal tract and liver including biochemical changes.  
 Lecture 23. Immune responses to arthropods  
 Lecture 24 Immune responses to gastrointestinal helminths

Lectures 25–29. Chemotherapy and resistance to acaricides, insecticides and anthelmintics  
 Lecture 30–32. Alternate methods of control, including bioinsecticides and biological control.

## HISTORY OF MEDICINE

Course Organiser: Dr N. Hopwood (e-mail: ndh12@cam.ac.uk)

Students can choose one of the following two papers, which form part of NST Part II History and Philosophy of Science  
 Paper 7: Medicine from Antiquity to the Enlightenment or Paper 8: Modern Medicine and Biomedical Sciences (see p. 197)

## HISTORY AND ETHICS OF MEDICINE

Course Organiser: Dr T. Lewens (e-mail: tml1000@cam.ac.uk).

Further information can be obtained at the Course Website: [www.hps.cam.ac.uk/studying/hem.html](http://www.hps.cam.ac.uk/studying/hem.html)

DR T. LEWENS, MR S. JOHN AND OTHERS  
 Medical Ethics. Tu. 4 (weeks 1–8)

The same continued. Tu. 4 (weeks 1–4)

PROF. J. FORRESTER, DR N. HOPWOOD AND DR E. LEONG  
 History of Medicine. M. 4 (weeks 1–8)

The same continued. M. 4 (weeks 1–4)

*Students taking courses organised by the Department of HPS should come to the Part II induction meeting on W. 4 Oct. at 11am in Seminar Room 2, Department of History and Philosophy of Science, Free School Lane. Discussion of the special needs of Part II students taking the BBS one-paper subjects in History of Medicine and History and Ethics of Medicine will be included in this meeting.*

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

CHEMISTRY (OPTION A AND OPTION B)  
PHYSICAL SCIENCES: HALF SUBJECT CHEMISTRYCourse Organiser: Dr J. H. Keeler (e-mail: jhk10@cam.ac.uk)  
Course Website: www-teach.ch.cam.ac.uk/All lectures will be given in the *Department of Chemistry, Lensfield Road*Students must register for the course in the *Department of Chemistry, Lensfield Road*, between 9 and 1 or 2 and 4 on Tu, 3 Oct.

A booklet containing details of the times of the lecture courses will be given out on registration. Others interested in the lecture courses can obtain a copy of this booklet on application to the Course Organiser. This information is also available from the website, www-teach.ch.cam.ac.uk

All students must attend an introductory talk concerning the practical course at 12 noon on W, 4 Oct. in the *Wolfson Lecture Theatre*.All lectures will be given in the *Department of Chemistry, Lensfield Road* unless otherwise statedEXPERIMENTAL AND THEORETICAL PHYSICS  
PHYSICAL SCIENCES: HALF SUBJECT EXPERIMENTAL AND THEORETICAL PHYSICSCourse Organiser: Dr N. R. Cooper (Michaelmas/Lent), Dr R. Padman (Easter) (e-mail: II-physics@phy.cam.ac.uk)  
Course Website: www.phy.cam.ac.uk/teaching/Students offering **Option A** must take the whole of **course H** in the Michaelmas Term and 2 of the lecture courses in the Lent and Easter Terms. They must in addition take **course K**, and a suitable selection from the material of **courses J** and **S**.Students offering **Option B** must take the whole of **course H** in the Michaelmas Term and either 3 or 4 of the lecture courses in the Lent and Easter Terms. In addition they must take a suitable selection from the material of **courses J** and **S**.The material of **course J** is examined at the start of the term following that in which each block, TP1 and TP2, is given.All students are recommended to attend the non-examinable **Course I**.The course will begin with a meeting on the first Wednesday of Full Term (4 Oct.) at 9.30 a.m. in the *Pippard Lecture Theatre*.

Students taking Part II Physical Sciences and Half Subject Experimental and Theoretical Physics will take the Advanced Quantum Physics course in the Michaelmas term and one of the Quantum Condensed Matter Physics, Astrophysics, Particle and Nuclear Physics, and Soft Condensed Matter and Biophysics courses in the Lent and Easter terms. Candidates also take three units of further work selected from: the Computational Physics course, pre-approved Vacation Work, experiment E1 or course TP1, experiment E2 or course TP2, a Literature Review, Physics in Action (two units), and Physics Education (two units). Neither of the courses TP1 and TP2 may be taken unless Mathematics was offered in Part IB of the Natural Sciences Tripos. A prior knowledge of Physics equivalent to the material covered in Part IB Physics will be assumed.

Lectures are given at the *Cavendish Laboratory (West Cambridge)*, in the *Pippard Lecture Theatre* unless otherwise stated.**Course H**

PROF. R. J. NEEDS

Thermal and Statistical Physics. Tu, Th. 10

PROF. D. A. RITCHIE

Advanced Quantum Physics. M, W, F. 9

DR N. R. COOPER

Relativity, Electrodynamics and Light. M, W, F. 10  
(First twenty lectures)

DR R. PADMAN AND OTHERS

Computational Physics. Tu, Th. 9 (First eight lectures)  
Classes weekdays 2–5 (5 Oct.–29 Nov.). Students  
attend one day per week**Course I****Course J**

PROF. E. TEREZJEV AND DR C. H. W. BARNES

Theoretical Physics TP1. Tu, Th. 12–1 (Twelve lectures  
beginning 10 Oct.); Tu, 2–4 (Four classes, 17 Oct., 31  
Oct., 14 Nov., 28 Nov.)**Course K**

PROF. P. B. LITTLEWOOD

Quantum Condensed Matter Physics. M, 10 W, 9

PROF. S. F. GULL AND PROF. A. N. LASENBY

Astrophysics. Tu, F. 9

PROF. D. R. WARD AND DR C. LESTER

Particle and Nuclear Physics. W, F. 10

PROF. A. M. DONALD

Soft Condensed Matter and Biophysics. M, Th. 9

PROF. P. B. LITTLEWOOD

The same continued. (First six lectures)

PROF. S. F. GULL AND PROF. A. N. LASENBY

The same continued. (First six lectures)

PROF. D. R. WARD AND DR C. LESTER

The same continued. (First six lectures)

PROF. A. M. DONALD

The same continued. (First six lectures)

DR M. P. HOBSON

Concepts in Physics. Tu, Th. 10 (Ten lectures  
beginning 8 Feb.)

THE STAFF OF THE CAVENDISH LABORATORY

Current Research Work in the Cavendish  
Laboratory (not examinable). See Part III  
Experimental and Theoretical Physics  
(p. 209)

DR N. R. COOPER AND DR T. DUKE

Theoretical Physics TP2. Tu, Th. 12–1  
(Twelve lectures, beginning 23 Jan.); Tu,  
2–4 (Four classes, 30 Jan., 13 Feb., 27  
Feb., 13 Mar.)

PROF. J. A. C. BLAND AND PROF. R. E. HILLS

Physics in Action. F. 11.30 *Mott Seminar Room*  
**Group Project Work.** F. 2–4 *Ryle Seminar*  
*Room*



## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

**Course S**

DR R. J. BUTCHER AND OTHERS  
Experiment E1. Registration W. 9.30 (4 Oct.)  
PROF. J. CARTER AND OTHERS  
Research Review.  
DR L. JARDINE-WRIGHT AND OTHERS  
Physics Education.

DR R. J. BUTCHER AND OTHERS  
Experiment E2. Registration W. 2.30 (17 Jan.)  
PROF. J. CARTER AND OTHERS  
The same continued.  
DR L. JARDINE-WRIGHT AND OTHERS  
The same continued.

PROF. J. CARTER AND OTHERS  
The same continued.  
DR L. JARDINE-WRIGHT AND OTHERS  
The same continued.

**GENETICS**  
**BIOLOGICAL AND BIOMEDICAL SCIENCES: MAJOR AND MINOR SUBJECT GENETICS**

Course Organisers: Dr M. Segal and Dr C. Farr (email: [partII.organisers@gen.cam.ac.uk](mailto:partII.organisers@gen.cam.ac.uk))  
Course Website: [www.gen.cam.ac.uk/](http://www.gen.cam.ac.uk/)

All lectures take place in the *Part II Lecture Room (G6)*, Department of Genetics, on M. Tu. W. Th. F.,  
unless otherwise stated

A detailed timetable for this course will be available in the Department of Genetics.

The Biological and Biomedical Sciences (Major Subject Genetics) course consists of a choice of four out of the five modules outlined below. Minor Subjects consist of any of modules M2, M4 or M5.

**M1: Chromosomes, the Cell Cycle & Cancer**

PROF. M. ASHBURNER, DR C. FARR, DR J. RAFF AND DR M. SEGAL  
(Twenty-four lectures, beginning 5 Oct.)

**M2: Plant and Microbial Genetics**

DR D. SUMMERS, DR P. OLIVER, DR J. ARCHER AND DR I. FURNER  
(Twenty-four lectures, beginning 5 Oct.)

**M3: Developmental Genetics**

PROF. A. MARTINEZ-ARIAS, PROF. D. ST JOHNSTON AND DR J.  
AHRINGER  
(Twelve lectures, beginning 7 Nov.)

**M4: Human Genetics, Genomics & Systems Biology**

DR D. MACDONALD, DR C. FARR, DR S. RUSSELL AND DR G.  
MICKLEM  
(Twelve lectures, beginning 7 Nov.)

**Long Reading Weekend.** Dates to be announced.

**M3: Developmental Genetics**

The same continued. (Twelve lectures,  
beginning 18 Jan.)

**M4: Human Genetics, Genomics & Systems Biology**

The same continued. (Twelve lectures,  
beginning 19 Feb.)

**M5: Evolutionary Genetics**

DR F. BALLOUX, DR L. HANDLEY AND DR D.  
MACDONALD  
(Twenty-four lectures, beginning 18 Jan.)

**Reading Week.** Dates to be announced.

**Revisions seminars** (Five sessions, dates to be  
announced)

**GEOLOGICAL SCIENCES AND MINERAL SCIENCES**  
**PHYSICAL SCIENCES: HALF SUBJECT GEOLOGICAL SCIENCES AND MINERAL SCIENCES**

Course Website: <http://www.esc.cam.ac.uk/new/v10/teaching/geology/ii-iii/courses.html>  
<http://camtools.caret.cam.ac.uk/>

Students offering Option A (leading to the three year degree – Part IIA) must take two core courses in the Michaelmas Term and two options in the Lent and Easter Terms. They must in addition attend the Skills course S1 in the Michaelmas Term.

Students offering Option B (leading to Part IIB and to the four year degree – Part III) must take two core courses in the Michaelmas Term and three options in the Lent and Easter Terms. They must in addition attend the Skills course S1 in the Michaelmas Term.

Students offering Physical Sciences: Half Subject Geological Sciences should consult with the Department over the courses they will take.

**Core C1 Geophysics**

PROF. J. A. JACKSON, DR F. TILMANN AND PROF. D. P. MCKENZIE  
Convenor: Prof. J. A. Jackson  
Lectures. Tu. Th. 9 *Harker Room*  
**Practicals.** Tu. Th. 10–12 *Petrology Laboratory*

**Core C2 Petrology and Geochemistry**

DR T. J. B. HOLLAND, DR A. GALY AND DR S. GIBSON  
Convenor: Dr T. J. B. Holland  
Lectures. M. F. 9 *Harker Room*  
**Practicals.** M. F. 10–12 *Petrology Laboratory*

**Core C3 Sedimentology and Palaeontology**

DR N. HOVIUS AND DR E. HARPER  
Convenor: Dr N. Hovius  
Lectures. W. 9, F. 12 *Harker Room*  
**Practicals.** W. 10–12, F. 2–4 *Palaeontology/Petrology Laboratories*

**Option 6 Continental Tectonics and Mountains**

PROF. J. A. JACKSON, ET AL  
Convenor: Dr J. A. Jackson  
Lectures. Tu. Th. 9 *Tilley Room*  
**Practicals.** Tu. 10–11.30, Th. 10–11.30  
*Petrology Laboratory*

The same continued. (Eight revision sessions)

**Option 7 Oceanic and Continental Margins**

PROF. R. S. WHITE, ET AL  
Convenor: Prof. R. S. White  
Lectures. W. F. 9 *Harker Room*  
**Practicals.** W. F. 10–11.30 *Petrology Laboratory*

The same continued. (Eight revision sessions)

**Option 8 Metamorphic and Igneous Processes**

DR S. GIBSON, DR M. HOLNESS AND DR A. GALY  
Convenor: Prof. M. J. Bickle  
Lectures. M. Th. 2 *Harker Room*  
**Practicals.** M. Th. 3–4.30 *Petrology Laboratory*

The same continued. (Eight revision sessions)



## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

**Core C4 Mineralogy**

DR M. WELCH, PROF. M. A. CARPENTER AND DR R. J. HARRISON  
 Convenor: Prof. M. A. Carpenter  
 Lectures. Tu. W. 2 *Harker 2*  
**Practicals.** W. Th. 3-4.30 *IB Mineralogy Laboratory*

**Core C5 Mineral Physics**

PROF. M. T. DOVE, AND MR P. WELCHE  
 Convenor: Dr M. T. Dove  
 Lectures. W. 9, F. 2 *Harker 2*  
**Practicals.** W. 10-11.30, F. 3-4.30 *IB Minerals Laboratory*

**Skills Course S1**

DR N. H. WOODCOCK  
 Convenor: Dr N. H. Woodcock  
 M. Th. 2-5 *Harker Room and Computer Room* (first three weeks)

**Field Course to Greece 1-9 Dec. 2006**

PROF. J. A. JACKSON AND DR N. HOVIUS

**Option M6 Diffraction, Electron Microscopy and Microanalysis**

DR M. WELCH, PROF. M. T. DOVE AND DR R. J. HARRISON, DR C. HAYWARD AND DR G. BROMILEY  
 Convenor: Dr R. J. Harrison  
 Lectures. M. F. 9 *Harker 2*  
**Practicals.** M. F. 10-11.30 *IB Minerals Laboratory*

**Option 9 Quaternary Oceans and Climate Change**

PROF. H. ELDERFIELD, DR A. PIOTROWSKI AND DR L. SKINNER  
 Convenor: Prof. H. Elderfield  
 Lectures. M. 9, W. 2 *Harker Room*  
**Practicals.** M. 10-11.30, W. 3-4.30 *Petrology Laboratory*

**Option 10 Ancient Ecosystems**

DR N. J. BUTTERFIELD AND A. N. OTHER  
 Convenor: Dr N. J. Butterfield  
 Lectures. Tu. F. 2 *Harker Room*  
**Practicals.** Tu. F. 3-4.30 *Palaeontology Laboratory*

**Option M4 Properties of Crustal Materials**

DR M. WELCH, PROF. M. A. CARPENTER AND DR M. DARAKTCHIEV  
 Convenor: Prof. M. A. Carpenter  
 Lectures. Tu. F. 2 *Harker 2*  
**Practicals.** Tu. F. 3-4.30 *IB Minerals Laboratory*

**Option M5 Computational Methods in Crystal Physics**

PROF. E. ARTACHO DR P. D. HAYNES AND DR K. TRACHENKO  
 Convenor: Prof. E. Artacho  
 Lectures. M. 9, W. 2 *Harker 2*  
**Practicals.** M. 10-11.30, W. 3-4.30 *IB Harker 2*

The same continued. (Eight revision sessions)

The same continued. (Eight revision sessions)

The same continued. (Eight revision sessions)

The same continued. (Eight revision sessions)

## HISTORY AND PHILOSOPHY OF SCIENCE

A detailed timetable and course handbook are available from the Department and on the web at [www.hps.cam.ac.uk/timetable](http://www.hps.cam.ac.uk/timetable)

*Prof. Kusch and Dr Hopwood would like to see all Part II students taking HPS on W. 4 Oct. at 11am in Seminar Room 2, Department of History and Philosophy of Science. All classes and seminars will be held in the History and Philosophy of Science Seminar Rooms, Free School Lane unless otherwise stated.*

**Primary Source Seminars**

*It is essential that students attend four seminars, three from the papers they are taking and one other.*

- Paper 1: DR L. TAUB  
 Plutarch's *Dialogue on the Face of the Moon*. F. 4 (weeks 1-4)
- Paper 2: DR P. FARA, MR R. GASKELL, PROF. S. SCHAFFER AND DR F. WILLMOTH  
 Fontenelle (tr. Behn) *A Discovery of New Worlds* (1688). Tu. 5 (weeks 1-4)
- Paper 3: DR P. WHITE AND OTHERS  
 Charles Darwin, *Origin of Species* (1859). M. 4 (weeks 1-4)
- Paper 4: MR S. JOHN  
 Bas van Fraassen, *The Scientific Image* (1981), chapter 2. W. 4 (weeks 1-4)
- Paper 5: MS A. COHEN AND PROF. M. KUSCH  
 Peter Winch, *The Idea of a Social Science and its Relation to Philosophy* (second edition, 1990). Tu. 4 (weeks 1-4)
- Paper 6: PROF. J. FORRESTER  
 Sigmund Freud, 'From the history of an infantile neurosis' (1914/18) in *Standard Edition of the Complete Psychological Works of Sigmund Freud* (1955), vol. XVII, pp. 3-122. W. 2 (weeks 1-4)
- Paper 7: DR E. LEONG  
 Thomas Brugis, *The Marrow of Physick* (London, 1640, 1648 and 1669). F. 12 (weeks 1-4)
- Paper 8: DR T. BUKLIJAS AND DR N. HOPWOOD  
 The Visible Human Project. Tu. 2 (weeks 1-4)
- Paper 9: PROF. N. JARDINE AND MR N. TOSH  
 C.P. Snow, *The Two Cultures and the Scientific Revolution* (1959) and F.R. Leavis, *Two Cultures? The Significance of C.P. Snow* (1962). Th. 12 (weeks 1-4)

**Dissertation Seminar**

W. F. 4 (weeks 1-4)  
*It is essential that students attend at least two of these seminars.*

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

**(Paper 1) Classical Traditions in the Sciences**

Course Organisers: e-mail: (Lent and Easter Terms), Dr L. Taub, e-mail: lct1001@cam.ac.uk (Michaelmas and Easter Terms), Dr L. Totelin (Michaelmas and Lent Terms)

DR L. TAUB

Primary Source. F. 4 (weeks 1–4)

PROF. N. JARDINE, PROF. R. MCKITTERICK, DR S. KUSUKAWA, DR L. TAUB AND DR L. TOTELIN

Introduction. F. 11 (weeks 1–4)  
(*Essential. No supervisions.*)

DR L. TAUB AND DR C. EAGLETON

Instruments, Books and Collections. F. 11 (weeks 5–8)

DR L. TAUB

Ancient Mediterranean Science. Tu. 11 (weeks 1–8)

DR A. CUNNINGHAM

Sects and Nature. M. 3 (weeks 1–4)

DR S. KUSUKAWA

Picturing the Book of Nature in the Renaissance. M. 3 (weeks 5–8)

**(Paper 2) Natural Philosophies: Renaissance to Enlightenment**

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

DR P. FARA, MR R. GASKELL, PROF. S. SCHAFFER AND DR F. WILLMOTH

Primary Source. Tu. 5 (weeks 1–4)

DR P. FARA, MR R. GASKELL, MR S. MANDELBROTE AND PROF. S. SCHAFFER

Natural Philosophy and Exact Sciences. W. 10 (weeks 1–8)

PROF. N. JARDINE, DR P. WHITE AND DR E. SPARY

Natural Histories. W. 11 (weeks 1–8)

**(Paper 3) Science, Industry and Empire**

Course Organisers: Prof. S. Schaffer, e-mail: sjs16@cam.ac.uk (Michaelmas Term) and Prof. J. Secord, e-mail: jas1010@cam.ac.uk (Lent and Easter Terms)

DR P. WHITE AND OTHERS

Primary Source. M. 4 (weeks 1–4)

DR R. NOAKES, DR K. PRICE AND PROF. S. SCHAFFER  
Workshop of the World: British Physical Sciences.

M. 2 (weeks 1–8)

DR N. HOPWOOD, PROF. N. JARDINE AND PROF. S. SCHAFFER

Laboratories and Disciplines: German Sciences. Tu. 12 (weeks 1–8)

**(Paper 4) Metaphysics, Epistemology and the Sciences**

Course Organiser: Prof. P. Lipton, e-mail: pl112@cam.ac.uk

MR S. JOHN

Primary Source. W. 4 (weeks 1–4)

PROF. P. LIPTON

Explanation, Causation and Law. W. 12 (weeks 1–8)

PROF. M. KUSCH

Naming and Necessity. M. 11 (weeks 1–8)

MR N. TOSH

Pragmatism and Truth. F. 4 (weeks 5–8)

**(Paper 5) Science and Technology Studies**

Course Organiser: Prof. M. Kusch, e-mail: mphk2@cam.ac.uk

MS A. COHEN AND PROF. M. KUSCH

Primary Source. Tu. 4 (weeks 1–4)

PROF. M. KUSCH

Philosophy of the Social Sciences. F. 2 (weeks 1–8)

PROF. S. SCHAFFER

Sociology of Scientific Knowledge. F. 10 (weeks 1–8)

DR N. HOPWOOD AND OTHERS

Reproductive Technologies. Th. 10 (weeks 1–8)

DR A. IMHAUSEN

Science in Ancient Egypt and Mesopotamia.  
F. 9 (weeks 5–8)

DR J. STEDALL

Classical Traditions in Mathematics. W. 9 (weeks 5–8)

PROF. SIR GEOFFREY LLOYD

Greek and Chinese Science. M. 3 (weeks 1–4)

DR N. EL-BIZRI

Arabic Science. M. 3 (weeks 5–8)

DR C. CULLEN

Science and Cross-Cultural Encounter in  
China: From Matteo Ricci to the  
Macartney Embassy. F. 10 (weeks 5–8)DR P. FARA, MR R. GASKELL, MR S. MANDELBROTE,  
AND PROF. S. SCHAFFER

The same continued. F. 10 (weeks 1–4)

DR C. EAGLETON

Instruments, Models and Tools. F. 4 (weeks 1–4)

DR E. LEONG

The History of the Book. Th. 10 (weeks 1–8)

PROF. J. SECORD AND OTHERS

Life on Earth: Natural History and Biological  
Sciences. M. 10 (weeks 1–8)

PROF. S. SCHAFFER AND DR R. ANDERSON

Instruments and Exhibitions. Tu. 11 (weeks 5–8)

PROF. J. SECORD AND OTHERS

Science as Public Culture. W. 10 (weeks 1–8)

PROF. J. FORRESTER

Thinking in Cases. Tu. 10 (weeks 1–4)

PROF. P. LIPTON

Induction. W. 12 (weeks 1–8) (*Mill Lane  
Lecture Rooms*)

DR T. LEWENS

Philosophy of Biology. Th. 11 (weeks 5–8)

MR S. JOHN

Science, Democracy, Risk. Tu. 10 (weeks 5–8)

DR J. BUTTERFIELD

Philosophy of Physics. Tu. 11 (weeks 1–4)

MS A. BREITENBACH AND MR S. JOHN

Environmental Ethics and Science Policy.  
M. 2 (weeks 1–4)

MS A. COHEN

Theory and Practice in the Social Sciences.  
M. 2 (weeks 5–8)

PROF. J. SECORD

Science Communication. F. 3 (weeks 1–4)

DR T. LEWENS

Bioethics. F. 3 (weeks 5–8)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

**(Paper 6) History and Philosophy of Mind**Course Organiser: Prof. J. Forrester, e-mail:  
jpf11@cam.ac.uk

PROF. J. FORRESTER

Primary Source. W. 2 (weeks 1–4)

PROF. M. KUSCH

Rule Following. M. 10 (weeks 1–8)

PROF. J. FORRESTER

Freud, Psychoanalysis and the Twentieth Century.

Th. 11 (weeks 1–8); W. 2 (weeks 5–8)

**(Paper 7) Medicine from Antiquity to the Enlightenment**

Course Organiser: Dr E. Leong

DR E. LEONG

Primary Source. F. 12 (weeks 1–4)

DR E. LEONG

Themes in the History of Early Medicine. Th. 3 (weeks  
1–4)

MR P. JONES

Medicine and Communication, 1375–1640. Th. 3  
(weeks 5–8)PROF. SIR GEOFFREY LLOYD, DR C. SALAZAR AND DR L.  
TOTELINMedicine and Society in Greco-Roman Antiquity.  
F. 12 (weeks 5–8)**(Paper 8) Modern Medicine and Biomedical Sciences**Course Organiser: Dr N. Hopwood, e-mail:  
ndh12@cam.ac.uk

DR T. BUKLIJAS AND DR N. HOPWOOD

Primary Source. Tu. 2 (weeks 1–4)

DR N. HOPWOOD, DR T. BUKLIJAS AND DR S. WILMOT

Making Modern Medicine. M. 12 (weeks 1–5); Tu. 2  
(weeks 5–6); Th. 2 (weeks 1–5)

DR N. HOPWOOD AND MS A. NATHOO

Medicine in the Twentieth Century. M. 12 (weeks 6–8);  
Tu. 2 (weeks 7–8); Th. 2 (weeks 6–8)**(Paper 9) Images of the Sciences**Course Organiser: Prof. N. Jardine, e-mail:  
nj103@cam.ac.uk

PROF. N. JARDINE AND MR N. TOSH

Primary Source. Th. 12 (weeks 1–4)

PROF. N. JARDINE, PROF. J. FORRESTER AND DR T. LEWENS

Ideologies of Science. Tu. 10 (weeks 1–8)

PROF. M. KUSCH

Marxism and the Sciences. Tu. 3 (weeks 1–8)

DR M. FRASCA-SPADA

Sources of Knowledge: Hume and Kant. Th. 12  
(weeks 5–8)

MR M. SPREKAV

Thought and Computation. W. 11 (weeks 5–8)

PROF. P. LIPTON

Topics in the Philosophy of Mind. F. 11  
(weeks 1–8) (*Mill Lane Lecture Rooms*)

DR G. BERRIOS

History of Psychopathology and Psychiatry.

W. 2 (weeks 1–4)

DR D. THOM

Eugenics and Psychology in the UK,

1869–1971. W. 2 (weeks 5–8)

DR E. LEONG, DR R. RALLEY, DR A. RANKIN, DR C.

RIDER AND DR M. SATCHELL

Medicine and Society in Europe, 1250–1800.

Th. 2 (weeks 1–8); F. 2 (weeks 1–8)

DR M. WORTHINGTON

Mesopotamian Medicine. Tu. 2 (weeks 2–5)

PROF. SIR GEOFFREY LLOYD, DR C. SALAZAR AND

DR L. TOTELIN

The same continued. F. 12 (weeks 1–8)

DR A. MAYER

History of Sexuality. M. 12 (weeks 1–4)

PROF. J. FORRESTER

History of Psychiatry. M. 12 (weeks 5–8)

MS A. NATHOO

Medicine and the Media. Tu. 12 (weeks 1–4)

DR N. HOPWOOD

Embryo Images. Tu. 12 (weeks 5–8)

PROF. N. JARDINE, PROF. J. FORRESTER AND DR T.

LEWENS

The same continued. W. 11 (weeks 1–4)

DR M. FRASCA-SPADA

The same continued. Th. 12 (weeks 1–4)

DR P. FARA

People and Pictures. Tu. 3 (weeks 1–4)

PROF. N. JARDINE AND DR C. CHIMISSO

Histories of Science and their Uses. Th. 3  
(weeks 1–8)

Attention is drawn to courses announced by other authorities. Students are particularly advised to attend other relevant courses in the Faculties of History, Philosophy, and Social and Political Sciences.

DR N. WRIGHT

Latin for Beginners M. T. Th. F. 5

DR P. BURSILL-HALL

Topics in the History of Mathematics. M. W. F. 4 *CMS*  
*Room 9*

DR M. BRAVO AND OTHERS

Cultures of the field (times to be announced)

PROF. E. J. CRAIG

Causality from Descartes to Hume. [Philosophy]

DR J. MARENBO

Medieval Logic

DR N. WRIGHT

The same continued.

DR S. SIVASUNDARAM

Science and Nature in 19thC British Empire,  
F. 11 (weeks 1–4) [History Faculty].

DR N. WRIGHT

The same continued.

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

MATERIALS SCIENCE AND METALLURGY  
PHYSICAL SCIENCES: HALF SUBJECT MATERIALS SCIENCE AND METALLURGYCourse Organiser: Dr S. M. Best (e-mail: PartII@msm.cam.ac.uk)  
Course Website: www.msm.cam.ac.uk/teaching/PtIIAB/

A detailed timetable is available on the Department course website, as above.

Students offering Physical Sciences: Half Subject Materials Science and Metallurgy should consult with the Department over the courses they will take.

All lectures will be given in the *Seminar Room (T001)*

DR R. V. KUMAR

**C1** Phase Equilibria. (Six lectures)

DR K. M. KNOWLES

**C3** Mathematical Methods. (Six lectures)

DR P. A. MIDGLEY

**C4** Tensor Properties. (Twelve lectures)

DR C. RAE

**C6** Crystallography. (Nine lectures)

DR J. A. LITTLE

**C8** Chemical Stability. (Ten lectures)

PROF. A. H. WINDLE

**C10** Structure and Properties of Polymers. (Nine lectures)

DR W. J. CLEGG

**C13** Ceramics. (Nine lectures)

PROF. T. W. CLYNE

**C16** Composite Materials. (Twelve lectures)**Speakers from Industry**

(Tu. 11, 24 Oct. and Tu. 11, 21 Nov.)

**Visit to Industry**

Half day (29 Nov.)

**Examples Classes**

Timetable available on the Department website.

**Practical Classes**

M. Tu. W. 2-5 (Two sessions to be chosen each week)

**Management and Language Options**

Details available from the Department website.

DR P. D. BRISTOWE

**C5** Physical Properties. (Twelve lectures)

PROF. A. L. GREER

**C7** Kinetics. (Nine lectures)

DR J. A. LITTLE

**C9** Alloys. (Nine lectures)

DR S. M. BEST

**C11** Surfaces and Interfaces. (Six lectures)

DR K. M. KNOWLES

**C12** Plasticity and Deformation Processing.  
(Nine lectures)

DR R. E. CAMERON

**C14** Polymer Processing. (Six lectures)

DR C. RAE

**C15** Fracture, Fatigue and Deformation.  
(Twelve lectures)

DR R. V. KUMAR

**C17** Heat and Mass Transfer. (Six lectures)**Speakers from Industry**

(Th. 11, 1 Feb. and Tu. 11, 27 Feb.)

**Visit to Industry**

Half day (20 Feb.)

**Examples Classes**

Timetable available on the Department website.

**Projects**Design project.  
Techniques project.**Management and Language Options**

Details available from the Department website.

DR E. R. WALLACH

**C2** Selection of Materials. (Six lectures)

DR S. M. BEST

**C18** Biomaterials. (Six lectures)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

## NEUROSCIENCE

Course Organiser: Prof. S. B. Laughlin (e-mail: s.laughlin@zoo.cam.ac.uk)  
 Course Website: www.bio.cam.ac.uk/teaching/neuroscience/index.html

All lectures will be held in *Lecture Room 2 Austin Building*, unless otherwise stated

**Module 1: Development Neurobiology.** M. Th. 9

PROF. M. BATE  
 Early Development of the Nervous System. (Six lectures,  
 5–23 Oct.)  
 DR G. COOK  
 Axonal Growth & Guidance. (Four lectures, 26 Oct.–6 Nov.)  
 DR J. H. ROGERS  
 Development of Connections. (Four lectures, 9–27 Nov.)

READING WEEK (13–17 Nov.)

**Module 2: Cellular and Molecular Neurobiology.** W. F. 9,  
in the Lecture Theatre, Department of Pharmacology

DR R. D. MURRELL-LAGNADO  
 Voltage-Sensitive Ion Channels (Four lectures, 6–18 Oct.)  
 DR S. CHAWLA  
 Calcium channels. (Two lectures, 20–25 Oct.)  
 DR P. RICHARDSON  
 G-Protein coupled receptors. (Four lectures, 27 Oct.–8 Nov.)  
 DR S. B. HLADKY  
 Ligand-gated Ion Channels (Four lectures, 10, 22, 24, 29  
 Nov.)

READING WEEK (13–17 Nov.)

**Module 3: Control of Action.** W. F. 10, unless otherwise stated

DR B. HEDWIG  
 Synaptic, Cellular and Network Properties. (Four  
 lectures, 4–13 Oct.)  
*Note the early start of this course.*  
 DR D. PARKER  
 Network Mechanisms in the Control of Movement.  
 (Three lectures, 18–25 Oct.)  
 PROF. D. WOLPERT  
 Human sensorimotor control. (Three lectures, 1, 3 Nov.,  
 6 Nov. (M. 10))  
 DR P. EVANS  
 Modulating a System. (Four lectures, 22, 24, 29 Nov. 1  
 Dec.)

READING WEEK (13–17 Nov.)

**Module 4: Sensory Systems.** Tu. 9, Th. 10

DR H. MATTHEWS  
 Photoreceptors. Venue to be announced. (Four lectures,  
 5–17 Oct.)  
 PROF. E. B. KEVERNE  
 Olfactory Receptors. (Two lectures, 19, 24 Oct.)  
 PROF. J. MOLLON  
 Visual Processing of Spatial Contrast and of Colour.  
 (Four lectures, 26, 31 Oct., 2, 7 Nov.)  
 DR H. CADIOU  
 Pain. Venue to be announced. (Four lectures 9, 21–28  
 Nov.)

READING WEEK (13–17 Nov.)

PROF. E. B. KEVERNE  
 Genetics and evolution of brain development.  
 (Three lectures, 15–22 Jan.)  
*Note the early start of this course.*  
 DR R. TASKER  
 Ischaemia, Excitotoxicity, and Stroke. (Three  
 lectures, 25, 29 Jan., 1 Feb.)  
 DR M-G. SPILLANTINI  
 Neural Degeneration. (Three lectures, 5–12 Feb.)  
 DR R. BARKER  
 Regeneration and grafting of neurons (Four  
 lectures, 15, 26 Feb., 1, 5 Mar.)  
 PROF. R. FRANKLIN  
 Glial Degeneration and Repair. (Three lectures,  
 8–15 Mar.)

READING WEEK (19–23 Feb.)

PROF. D. COOPER  
 cAMP Signalling. (Four lectures, 17–26 Jan.)  
*Note the early start of this course.*  
 PROF. C. W. TAYLOR  
 Calcium Signalling. (Three lectures, 31 Jan.–7 Feb.)  
 DR B. MCCABE  
 Synaptic Plasticity. (Three lectures, 9–16 Feb.)  
 DR J. M. EDWARDSON  
 Mechanisms of Exocytosis (Four lectures, 28  
 Feb., 2–9 Mar.)  
 DR S. CHAWLA  
 Regulation of Gene Transcription. (Two  
 lectures, 14–16 Mar.)

READING WEEK (19–23 Feb.)

DR M. HASTINGS  
 Neural Control of Circadian Rhythms. (Four  
 lectures, 17–26 Jan.)  
*Note the early start of this course.*  
 DR S. EDGLEY  
 Cerebellum. (Four lectures, 2, 7 Feb (M. 12) and  
 14 Feb.)  
 DR S. WALKER  
 Neural Decisions. (Three lectures, 28 Feb. 2, 7  
 Mar.)  
 DR S. JONES  
 Basal Ganglia. (Three lectures, 9 Mar., (M. 12)  
 and 14 Mar.)

READING WEEK (19–23 Feb.)

DR B. HEDWIG  
 Auditory Mechanisms. (Four lectures, 16–25 Jan.)  
*Note the early start of this course.*  
 PROF. S. B. LAUGHLIN  
 Electric Sense and Motor Vision. (Four  
 lectures, 30 Jan. 1–8 Feb.)  
 DR J. ALCANTARA  
 Anatomy and physiology of the peripheral  
 auditory system (Two lectures, 13, 15 Feb.)  
 DR J. ALCANTARA  
 Auditory Processing in the Cochlea. (Six  
 lectures, 27 Feb., 1–15 Mar.)

READING WEEK (19–23 Feb.)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

**Module 5: Learning, Memory and Cognition.** M. Tu. 10  
 DR B. J. MCCABE  
 Cellular Mechanisms of Learning and Memory. (Four lectures, 9–17 Oct.)  
 DR T. J. BUSSEY  
 Conditioning and Associative Learning. (Four lectures, 23–31 Oct.)  
 DR S. FORWOOD  
 Computational Neuroscience I: Conditioning and Associative Learning. (Two lectures, 6, 7 Nov.)  
 DR Z. SARNYAI  
 Stress and the Brain: Effects of the Environment on Behaviour and Cognition. (Four lectures, 20–28 Nov.)

READING WEEK (13–17 Nov.)

LECTURER TBA  
 Brain Mechanisms of Memory and Cognition. (Six lectures, 15, 22, 29 Jan., 5, 12, 26 Feb)  
 Physiology Main Lecture Theatre  
*Note the early start of this course.*  
 DR R. A. MCCARTHY  
 Cognitive Neuropsychology. (Eight lectures, 16, 23 30 Jan., 6, 13, 27 Feb., 6, 13 Mar.)  
 Physiology Main Lecture Theatre  
 DR S. FORWOOD  
 Computational Neuroscience II: Memory and Cognition. (Two lectures, 5, 12 Mar.)

READING WEEK (19–23 Feb.)

## PATHOLOGY

## BIOLOGICAL AND BIOMEDICAL SCIENCES: MAJOR SUBJECT PATHOLOGY

Course Organiser: Dr I. Brierley (e-mail: [ib103@mole.bio.cam.ac.uk](mailto:ib103@mole.bio.cam.ac.uk))  
 Course Website: [www.path.cam.ac.uk/](http://www.path.cam.ac.uk/)

All lectures will be given in the *Department of Pathology* unless otherwise stated.

The Biological and Biomedical Sciences (Major Subject Pathology) course consists of a choice of two out of the five modules outlined below (however a combination of modules A and E is prohibited).

**Introductory lecture**

All options. W. 3 (One lecture, 4 Oct.) *It is important that all students attend the introductory lecture*

**Option A: Cellular and Genetic Pathology** Tu. Th. S. 9

Option Organiser: Dr N. Affara (e-mail: [na106@cam.ac.uk](mailto:na106@cam.ac.uk)) Tel: 33700)  
 DR I. FURNER, DR D. GRIFFIN, DR S. BLOTT, PROF. N. AFFARA, DR C. SARGENT, DR D. RUBINSZTEIN, DR D. R. SARGAN, DR J. AJIOKA, DR D. MACDONALD, DR M. HURLES, DR P. ELLIS AND DR A. SHARKEY  
*N.B. Some lectures are held at 11.30 or 12 noon*  
 Part I: Genes, Genomes and Disease.  
 PROF. N. AFFARA, DR I. FURNER, DR D. GRIFFIN, DR C. SARGENT, DR S. BLOTT, DR D. R. SARGAIN, DR J. AJIOKA, DR D. RUBINSZTEIN, DR D. MACDONALD AND DR M. HURLES  
 Part II: Molecular Genetics and Pathology of Reproduction.  
 PROF. N. AFFARA, DR P. ELLIS AND DR A. SHARKEY

**Option B: Immunology** Tu. Th. 5, S. 10.15

Option Organiser: Dr N. Holmes (e-mail: [nh106@cam.ac.uk](mailto:nh106@cam.ac.uk)) Tel: 33871)  
 PROF. J. TROWSDALE, DR A. KELLY, DR P. LEHNER, DR C. KIRTON, DR C. BRYANT, DR H. REYBURN, PROF. A. COOKE, DR M. CLARK, DR L. MARTENSEN-BOPP, DR K. G. C. SMITH, PROF. D. T. FEARON AND DR N. HOLMES

**Option C: Microbial and Parasitic Disease** M. W. F. 9

Option Organiser: Dr I. B. Kingston (e-mail: [ibk1000@cam.ac.uk](mailto:ibk1000@cam.ac.uk)) Tel: 33330)  
 DR R. HAYWARD, PROF. V. KORONAKIS AND DR G. FRASER  
 Bacterial Disease and Pathogenicity.  
 DR D. BROWN, DR V. KORONAKIS AND DR P. MASTROENI  
 Combating Bacterial Disease.  
 DR N. BROWN AND PROF. A. M. LEVER  
 Fungal Infections.

DR G. FRASER AND DR R. D. HAYWARD  
**Journal Research Seminars**

**Option D: Virology** M. W. F. 5

Option Organiser: Dr T. D. K. Brown (e-mail: [tdkb@mole.bio.cam.ac.uk](mailto:tdkb@mole.bio.cam.ac.uk)) Tel: 36917)  
 DR T. D. K. BROWN, DR S. WYNNE, DR P. DIGARD, DR J. GRAY, DR I. BRIERLEY, DR S. EFSTATHIOU, DR J. SINCLAIR AND DR C. CRUMP

DR A. PHILPOT, DR P. EDWARDS, PROF. A. H. WYLLIE, PROF. M.-Q. DU, PROF. V. P. COLLINS, DR A. BANNISTER, DR P. JONES AND PROF. M. A. STANLEY  
 Part III: Defects in Cellular Growth and Differentiation: Cancer  
 DR A. PHILPOT, DR P. A. W. EDWARDS, DR R. HESKETH, DR A. VENKITARAMAN, PROF. A. H. WYLLIE, DR A. BANNISTER, PROF. P. COLLINS, PROF. M.-Q. DU, PROF. M. STANLEY, PROF. C. FFRENCH-CONSTANT, DR G. MURPHEY AND DR P. JONES

DR N. HOLMES, DR B. A. BLACKLAWS, DR J. BONAME, DR P. MASTROENI, DR H. REYBURN, DR D. B. PALMER, DR A. GREEN, DR F. RANDOW, PROF. A. COOKE AND DR A. MOFFETT

DR I. B. KINGSTON, DR J. AJIOKA, DR M. SHIRLEY, DR C. PEACOCK AND DR M. FIELD  
 Major Protozoal Diseases.  
 DR Q. BICKLE, DR K. HOFFMAN, DR I. B. KINGSTON, DR E. MICHAEL AND DR M. FIELD  
 Major Helminth Diseases.

**Journal Research Seminars (10–1)**

DR G. TURNER, DR B. A. BLACKLAWS, DR J. BONAME, DR P. BORROW, PROF. A. M. L. LEVER, DR S. EFSTATHIOU, PROF. A. C. MINSON, DR P. DIGARD, DR T. D. K. BROWN, DR J. C. STERLING, DR H. BROWNE, DR P. D. MINOR, DR G. K. DARBY, DR J. AJIOKA AND DR H. LAMAN

DR C. PRINT AND DR S. CHARNOCK-JONES  
 Part IV: Angiogenesis.  
 PROF. C. FFRENCH-CONSTANT  
 Part V: Neurodevelopmental Biology and Genetic Disease.

DR M. CLARK AND PROF. J. S. H. GASTON

DR M. BOOTH  
 Epidemiology.  
 DR I. B. KINGSTON AND DR H. DE KONING  
 Parasite Vaccines and Chemotherapy.

**Project Seminars** Dates to be confirmed

PROF. A. M. LEVER, DR P. DIGARD AND DR S. EFSTATHIOU

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

**Option E: Dynamics of Infectious Disease** Tu. Th. 9, Th. 10  
*Venue: Rm. FW26 William Gates Computer Laboratory Building*

Option Organiser: Dr L. S. Tiley (e-mail:  
 lst21@cam.ac.uk) Tel: 39554

DR J. WOOD, DR J. DALY, DR J. MCCAULEY, DR I. BROWN, DR A.  
 GRANT, PROF. T. HUMPHREY, DR P. MASTROENI, PROF.  
 J. SLATER, DR B. BLACKLAWS, DR M. BOOTH, DR O.  
 PYBUS, DR O. RESTIF AND DR L. TILEY.

DR M. BAYLISS, DR M. BOOTH, DR T. DREW, DR A.  
 DAVIDSON, DR K. SMITH, DR H. FIELD, DR S.  
 GORDON, DR R. CLIFTON-HADLEY AND DR  
 T. GOODCHILD, DR G. INNOCENT, DR L.  
 TILEY, DR P. MELLOR, PROF. D. MASKELL,  
 DR S. RYDER AND DR D. SARGAN



## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

**PHARMACOLOGY**  
**BIOLOGICAL AND BIOMEDICAL SCIENCES: MAJOR SUBJECT PHARMACOLOGY**

Course Organiser: Dr R. D. Murrell-Lagnado (e-mail: rdm1003@cam.ac.uk)  
 Course Website: www.phar.cam.ac.uk/teaching/tea\_part2.html

The introductory session for students will be at 9 a.m., W. 4 Oct. in the *Lecture Theatre, Department of Pharmacology*. It is expected to last all morning with a break for coffee.

Lectures will be given in the *Lecture Theatre, Department of Pharmacology*

**Pharmacology of Integrated Systems**

- DR C. R. HILEY  
 Cardiovascular Pharmacology. (Eight lectures, 5–23 Oct.) M. Tu. Th. 9
- DR J. A. KOENIG  
 Study Skills (One lecture, 5 Oct. 2)
- DR Z. SARNYAI  
 Pharmacology of Psychiatric Disorders. (Eight lectures, 24 Oct.–9 Nov.) M. Tu. Th. 9
- DR T. P. FAN  
 Pharmacology of Inflammation and Angiogenesis. (Six lectures, 26 Oct.–14 Nov.) Tu. Th. 11
- DR S. B. HLADKY  
 The Blood-brain Barrier. (Two lectures, 30 Oct–1 Nov.) M. W. 10
- DR L. J. MACVINISH  
 Pharmacology of Cystic Fibrosis and the Lung Epithelium. (Four lectures, 13–20 Nov.) M. Tu. Th. 9
- PROF. M. J. WARING AND PROF. V. K. K. CHATTERJEE  
 Drugs, Receptors and DNA (Six lectures 15 Nov. W. 9; 17 Nov. F. 9; 21 Nov. Tu. 9; 23 Nov. Th. 9; 27 Nov. M. 9; 28 Nov. Tu. 9)
- DR F. H. MARSHALL  
 Drug Discovery. (Three lectures, 16–23 Nov. Tu. Th. 11)

**Molecular and Cellular Pharmacology**

- DR R. D. MURRELL-LAGNADO  
 Voltage-sensitive Ion Channels. (Four lectures, 6–18 Oct.) W. F. 9
- DR H. W. VAN VEEN  
 Carriers and Pumps as Targets for Drug Development. (Four lectures, 6–13 Oct.) M. W. F. 10
- DR J. M. YOUNG  
 Analysis of Drug-Receptor Interactions. (Five lectures, 16 Oct.–25 Oct. M. W. 10; 27 Oct. F. 10)
- DR R. D. MURRELL-LAGNADO  
 Inward-rectifying Potassium Channels. (One lecture, 20 Oct. F. 10)
- DR S. CHAWLA  
 Calcium Channels. (Two lectures, 20–25 Oct.) W. F. 9
- DR S. B. HLADKY  
 Ligand-gated Ion Channels. (Four lectures, 10, 22, 24, 29 Nov.) W. F. 9
- DR A. GENAZZANI  
 Excitatory Amino Acids. (Two lectures, 13–15 Nov.) M. W. 10
- PROF. C. W. TAYLOR  
 G-protein Signalling Pathways. (Four lectures, 17, 22, 24 and 27 Nov.) M. W. F. 10
- DR P. J. RICHARDSON  
 Genomics of Neuronal Systems (Two lectures, 29 Nov.–1 Dec.) W. F. 10

- DR R. M. HENDERSON  
 Cholesterol, Diabetes and Obesity. (Seven lectures, 18 Jan.–1 Feb.) M. Tu. Th. 9
- DR D. BURDAKOV  
 Hypothalamic Mechanisms. (Four lectures, 5–12 Feb.) M. Tu. Th. 9
- DR M. A. BARRAND AND DR H. W. VAN VEEN  
 Resistance to Antibacterial, Antiparasitic and Anticancer Agents. (Six lectures, 15–27 Feb.) M. Tu. Th. 9

- PROF. D. COOPER  
 cAMP Signalling. (Four lectures, 17–26 Jan.) W. F. 9
- PROF. C. W. TAYLOR  
 Calcium Signalling. (Three lectures, 31 Jan–7 Feb.) W. F. 9
- DR B. MCABE  
 Synaptic Plasticity. (Three lectures, 9–16 Feb.) W. F. 9
- PROF. R. F. IRVINE  
 Phosphoinositide Messengers. (Four lectures, 9–16 Feb.) M. W. F. 10
- DR L. RODERICK  
 Cellular Signalling. (Two lectures, 13 and 15 Feb.) Tu. Th. 10
- DR J. M. EDWARDSON  
 Mechanisms of Exocytosis. (Four lectures, 28 Feb.–9 Mar.) W. F. 9
- DR M. A. BARRAND  
 Water Channels. (Two lectures). 5, 8 Mar. 9
- DR J. M. EDWARDSON  
 Mechanisms of Endocytosis. (Two lectures, 12–13 Mar.) M. T. 9
- DR S. CHAWLA  
 Regulation of Gene Transcription. (Two lectures, 14–16 Mar.) W. F. 9

**NATURAL SCIENCES TRIPOS, PART II (continued)**

MICHAELMAS 2006

LENT 2007

EASTER 2007

**PHYSIOLOGY, DEVELOPMENT AND NEUROSCIENCE****BIOLOGICAL AND BIOMEDICAL SCIENCES:  
MAJOR AND MINOR SUBJECTS PHYSIOLOGY, DEVELOPMENT AND NEUROSCIENCE**

Course Organiser: Dr S. O. Sage (e-mail: sos10@cus.cam.ac.uk)  
 Course Website: www.pdn.cam.ac.uk/teaching/

The Biological and Biomedical Sciences (Major Subject Physiology, Development, and Neuroscience) course consists of a series of workshops, lectures and seminars around a framework of modules. The combinations offered are: Development and Reproductive Biology: M1, M4, M10, M11. Integrative Physiology: M2, M3, M10, M13. Neuroscience: M7, M8, M12, M14. Minor Subjects consist of either of modules M7 or M14.

Detailed timetables will be posted in the Department.

**Module 1: Developmental Neurobiology** M. Th. 9, F. 10  
 Module organiser: Dr J. H. Rogers (jhr11@cam.ac.uk)

**Module 2: Early Development and Assisted Reproductive Technologies** M. 2-4, Tu. 11, F. 9  
 Module organiser: Prof. M. H. Johnson (mhj21@cam.ac.uk)

**Module 3: Fetal and Placental Physiology** M. F. 12, Th. 10  
 Module organiser: Dr A. J. Forhead (ajf1005@cam.ac.uk)

**Module 4: Making a Vertebrate** M. 10, Tu. 12, W. 9  
 Module organiser: Drs R. J. Adams (rja46@cam.ac.uk) & N. Brown (nb117@mole.bio.cam.ac.uk)

**Module 5: Sex, Gender and Sexuality** M. 11, Tu. W. 10  
 Module organiser: Prof. M. H. Johnson (mhj21@cam.ac.uk)

**Module 6: Cellular Physiology** M. 11, Tu. W. 10  
 Module organiser: Dr C. J. Schwiening (cjs30@cam.ac.uk)

**Module 7: Motor Systems** Tu. 12; F. 9, 11  
 Module organiser: Drs S. A. Edgley (sae1000@cam.ac.uk) & R. H. S. Carpenter (rhsc1@cam.ac.uk)

**Module 8: Sensory Transduction** M. 12, Tu. 9, Th. 10  
 Module organiser: Dr H. R. Matthews (hrm1@cam.ac.uk)

**Module 9: Development Biology** M. W. F. 5  
 Module Organiser: Dr Pat Simpson (pas49@cam.ac.uk)

**Module 10: Genomics and the Future of Medicine** Th. 2-5  
 Module organisers: Drs A. Ferguson-Smith (afsmith@mole.bio.cam.ac.uk) and R. White (rw108@mole.bio.cam.ac.uk)

**Module 11: Neural Degeneration and Regeneration** M. W. Th. 9  
 Module organiser: Dr J. H. Rogers (jhr11@cam.ac.uk)

**Module 12: Brain Function and Dysfunction** M. 12, 2-4, W. 10, F. 10  
 Module organiser: Dr S. Jones (sj251@cam.ac.uk)

**Module 13: Systems and Clinical Physiology** M. W. F. 11  
 Module organiser: Dr S. O. Sage (sos10@cam.ac.uk)

**Module 14: Central Mechanisms of Sensation** Tu. 9, 11, Th. 10  
 Module organiser: Dr D. J. Tolhurst (djt12@cam.ac.uk)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

## PLANT SCIENCES

## BIOLOGICAL AND BIOMEDICAL SCIENCES: MAJOR SUBJECT PLANT SCIENCES

Course Organiser: Prof. Howard Griffiths (e-mail: hg230@cam.ac.uk)

Module Organisers appear below. E-mail: firstname.surname@plantsci.cam.ac.uk unless otherwise specified.

Course Website: www.plantsci.cam.ac.uk/teaching/psii/index.html

All lectures take place in *the Tom ap Rees Lecture Theatre, Department of Plant Sciences* unless otherwise stated

The Biological and Biomedical Sciences (Major Subject Plant Sciences) course consists of lectures from the modules below. Students can offer either Cellular Plant Sciences (modules M1, M4, L1 and L4), or Ecological Plant Sciences (modules M3 and either M1 or Zoology M3; and L2, Zoology L2).

**Module M1: Frontiers in Plant-Microbe Interactions**

Module organiser: Dr John Carr

DR J. P. CARR, DR K. JOHNSTONE AND DR A. KLECZKOWSKI  
M. W. F. 12 (Twenty-four lectures, beginning 6 Oct.)**Module M2: Plant Metabolism**

Module organiser: Dr Alison Smith

DR J. M. HIBBERD, DR A. G. SMITH, PROF. J. NAPIER, DR P.  
DUPREE AND PROF. J. C. GRAY  
M. W. F. 10 (Twenty-four lectures, beginning 6 Oct.)**Module M3: Dynamics, History and Future of Vegetation**

Module organiser: Prof. Howard Griffiths

PROF. H. GRIFFITHS, DR E. V. J. TANNER, DR D. A. COOMES  
AND DR O. RACKHAM  
M. 9 Tu. 10 (Twenty-four lectures, beginning 6 Oct.)**Module M4: Plant Signalling Networks**

Module organiser: Dr Alex Webb

DR J. M. DAVIES, DR A. A. R. WEBB AND DR D. E. HANKE  
Tu. W. Th. 9 (Twenty-four lectures, beginning 5 Oct.)**Module L1: Development of Plants and Fungi**

Module organiser: Dr David Hanke

DR J. HASELOFF AND DR D. E. HANKE  
M. W. F. 9 (Twenty-four lectures, beginning 19  
Jan.)**Module L2: Plant Responses to the Environment**

Module organiser: Dr Ed Tanner

PROF. H. GRIFFITHS, DR J. M. HIBBERD AND  
DR D. A. COOMES  
M. W. F. 10 (Twenty-four lectures, beginning  
19 Jan.)**Module L3: Plant Genes and Organelles**

Module organiser: Prof. John Gray

DR A. SMITH, DR C. HOWE, PROF. JOHN GRAY, DR  
K. LILLEY AND DR P. DUPREE  
Tu. Th. 9 W. 11 (Twenty-four lectures,  
beginning 18 Jan.)**Module L4: Frontiers in Microbial Physiology and Ecology**

Module organiser: Dr Keith Johnstone

DR K. JOHNSTONE, DR A. TUNNAcliffe, DR M.  
CROFT, DR J. BALK AND PROF. H. GRIFFITHS  
M. W. F. 12 (Twenty-four lectures, beginning  
19 Jan.)

The modules below may also be offered in Part II Plant Sciences (Part II Zoology modules):

**M3 Population Biology***Interdepartmental Module*

Module organiser: Dr A. Manica

DR A. MANICA, DR D. NUSSEY, DR K. ISVARAN, DR D. SMITH,  
DR D. COOMES, DR W. AMOS, AND DR R. JOHNSTONE  
M. W. F. 5 (Twenty-four lectures, beginning 6 Oct.)**M2 Aquatic Ecology**

Module organiser: Dr D. Aldridge

DR D. ALDRIDGE, DR M. BROOKE, DR R. BARNES AND PROF.  
A. CLARKE  
M. W. F. 11 (Twenty-four lectures, beginning 6 Oct.)**L2 Conservation Biology***Interdepartmental Module*

Module organiser: Dr A. Balmford

DR M. BROOKE, DR I. HODGE, DR W. AMOS, DR D.  
COOMES, DR R. GREEN, DR E. TANNER, DR  
J. O'SULLIVAN AND DR A. BALMFORD  
M. W. F. 4 (Twenty-four lectures, beginning 19  
Jan.)All lectures to take place in the *Main Lecture  
Theatre*.**L3 Behavioural Ecology***Department of Zoology*

Module organiser: Dr R. A. Johnstone

PROF. N. B. DAVIES, DR R. JOHNSTONE, DR R.  
KILNER, PROF. T. H. CLUTTON-BROCK AND  
DR W. FOSTERTu. Th. Sa. 10 (Twenty-four lectures,  
beginning 18 Jan.)All lectures to take place in the *Main Lecture  
Theatre*.

The following non-examined module is compulsory in Part II Plant Sciences:

**Statistics for Part II Biologists**

DR B. J. MCCABE

(2 Oct.) M. 9 and 2, M. Tu. W. Th. F. 2 (Ten lectures,  
2–12 Oct.) *Large Lecture Theatre, Department of  
Plant Sciences**Please note early start of course.***Practical work**(Ten classes) M. W. F. 10–12 or 3–5 (2, 4, 6 Oct.); M. W. F.  
3–5 (9, 11, 13, 16 Oct.) *The Titan Teaching Rooms,  
New Museums Site**Please note early start of course*

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

## PSYCHOLOGY

## BIOLOGICAL AND BIOMEDICAL SCIENCES: MAJOR SUBJECT PSYCHOLOGY

Course Organiser: Dr K. C. Plaisted (e-mail: kcp1000@cam.ac.uk)  
 Course Website: www.psychol.cam.ac.uk/pages/undgrad.html#Courseb

Lectures will be held in the *Lecture Theatre, Department of Experimental Psychology* unless otherwise stated

The Biological and Biomedical Sciences (Major Subject Psychology) course consists of the lectures below.

## PROF. T. W. ROBBINS

General Introduction. W. 5 (One lecture, 4 Oct.)

## DR M. R. F. AITKEN

Statistics. W. 2, Th. 3 (Six lectures, 11–26 Oct.)

Practical Classes. F. 2–4 (Three classes, 13, 20, 27 Oct.),

*Physiology Lecture Theatre 3*

Advanced Statistics. W. 2, Th. 3 (Four lectures, 15–23 Nov.)

Practical Classes. F. 2–4 (Two classes, 17, 24 Nov.)

*Physiology Lecture Theatre 3*

## PROF. M. P. HAGGARD

Measurement Theory and Qualitative Methods. Tu. 5  
 (Four meetings, 7–28 Nov.)

## PROF. B. C. J. MOORE

Hearing. Tu. 9 (Eight lectures, beginning 10 Oct.), W. 9  
 (Eight lectures, beginning 11 Oct.)

## PROF. J. D. MOLLON

Vision. F. 9 (Eight lectures, beginning 6 Oct.)

## DR G. J. DIGIROLAMO

Attention and Control. M. 12 (Eight lectures, beginning  
 9 Oct.)

## DR G. J. DAVIS

Visual Cognition. M. 9 (Eight lectures, beginning 9 Oct.)

## PROF. N. J. MACKINTOSH

Intelligence. F. 12 (Eight lectures, beginning 6 Oct.)

## PROF. B. J. EVERITT AND PROF. T. W. ROBBINS

Brain Mechanisms of Motivation. M. W. 10 (Fourteen  
 lectures, 9–11 Oct, 23 Oct–29 Nov.)

## PROF. A. DICKINSON

Comparative Psychology of Learning and Motivation.  
 Tu. Th. 12 (Sixteen lectures, beginning 10 Oct.)

## DR J. RUSSELL

Cognitive and Social Development. F. 10 (Eight lectures,  
 beginning 6 Oct.)

## PROF. S. BARON-COHEN

Abnormal Psychology. Th. 9 (Eight lectures, beginning  
 12 Oct.)

## DR E. WEISBLATT

Trauma, Development and Psychiatry. Th. 5 (Four  
 meetings, 2–23 Nov.)

## DR L. BROSAN

Clinical Aspects of Abnormal Psychology. W. 5 (Four  
 lectures, 8–29 Nov.)

## PROF. M. P. HAGGARD

Specialised Issues in Data Analysis and  
 Interpretation. Tu. 9 (Four lectures,  
 20 Feb.–13 Mar.)

## PROF. J. D. MOLLON

Writing a Project Report. F. 2 (One class, 2 Feb.)

## DR G. J. DIGIROLAMO

Experimental Design. F. 2 (One class, 9 Feb.)

## PROF. J. D. MOLLON

Vision. M. 9 (Eight lectures, 15 Jan.–5 Feb.,  
 19 Feb.–12 Mar.)

## DR J. I. ALCÁNTARA

Speech Perception. W. 9 (Four lectures,  
 17 Jan.–7 Feb.)

## DR M. MIOZZO

Language, Mind and Brain. F. 12 (Eight  
 lectures, 19 Jan.–9 Feb., 23 Feb.–16 Mar.)

## DR I. P. L. MCLAREN

Learning, Memory and Cognition. Th. F. 9  
 (Fourteen lectures, 18 Jan.–9 Feb., 22 Feb.  
 –9 Mar.)

## DR I. P. L. MCLAREN

Connectionism. Tu. 12 (Seven lectures,  
 16 Jan.–6 Feb., 20 Feb.–6 Mar.)

## DR F. PULVERMÜLLER

Neurophysiology of Language Processing in the  
 Brain. Tu. 5 (Four lectures, 16 Jan.–6 Feb.)

## DR J. LEE AND DR R. COOLS

Brain Mechanisms of Cognition and Memory.  
 M. 10 (Six lectures, 15 Jan.–5 Feb., 19–26  
 Feb.) *Physiology Main Lecture Theatre*

## DR R. A. MCCARTHY

Cognitive Neuropsychology. Tu. 10 (Eight  
 lectures, 16 Jan.–6 Feb., 20 Feb.–13 Mar.)  
*Physiology Main Lecture Theatre*

## DR K. C. PLAISTED

Developmental Disorders. Th. 12 (Eight  
 lectures, 18 Jan.–8 Feb., 22 Feb.–15 Mar.)

## PROF. B. J. EVERITT

Abnormal Psychology: Biological Perspectives.  
 W. 10 (Six lectures, 24 Jan.–7 Feb.,  
 21 Feb.–7 Mar.)

## DR J. RUSSELL

Language Acquisition. F. 10 (Eight lectures,  
 19 Jan.–9 Feb., 23 Feb.–16 Mar.)

## DR P. FLETCHER

Cognitive Neuropsychiatry. Tu. 5 (Four  
 lectures, 20 Feb.–13 Mar.)

## DR J. STEVENSON-HINDE AND COLLEAGUES

Temperament and Attachment. M. Th. 5  
 (Eight lectures, 15 Jan.–8 Feb.)

Attention is drawn to lectures organised by the Faculty of Social and Political Sciences for the Paper Psy 1 (Social Psychology) given for Parts IIA and IIB of the Social and Political Sciences Tripos, W. 12, Th. 10 throughout the Michaelmas and Lent Terms

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2006

LENT 2007

EASTER 2007

## ZOOLOGY

## BIOLOGICAL AND BIOMEDICAL SCIENCES: MAJOR SUBJECT ZOOLOGY

Course Organiser: Dr N. Mundy (e-mail: nim21@cam.ac.uk)  
 Course Website: www.zoo.cam.ac.uk/degree/2zoology/index.html

Lectures will be given in the *Department of Zoology* unless otherwise stated

The Biological and Biomedical Sciences (Major Subject Zoology) course can be made up from any of the following options:

**Cells and Development: Modules M6, M7 and a choice of two modules from L5, L6 or L7**

**Behaviour: Modules M4, M5, L2 and L3.**

**Vertebrate Biology: Two modules chosen from M1, M3 or M5, and L1 and L3.**

**Ecology and Conservation: Two modules from M2, M3 or M5 and L2 and L3**

**Ecology and Genetics: Two modules chosen from M2, M3 or M5, and two chosen from L2, L3 or the Genetics module M5 (Evolutionary Genetics)**

**Ecology and Plant Sciences: Two modules from M2 and M3, or Plant Sciences M3 (Dynamics and History and Future of Vegetation) and L2, L3**

**M1 Topics in Vertebrate Evolution**

Module organiser: Prof. J. A. Clack

PROF. J. CLACK, DR G. WALKER, DR H. BLOM, DR A. R.  
 MILNER, DR L. NOË, DR S. E. EVANS, DR M. WILKINSON,  
 DR E. RAYFIELD, DR P. BARRETT AND DR A. C. MILNER  
 M. W. F. 10 (Twenty-four lectures, beginning 6 Oct.)

**M2 Aquatic Ecology**

Module organiser: Dr D. Aldridge

DR D. ALDRIDGE, DR M. BROOKE, DR R. BARNES AND PROF.  
 A. CLARKE  
 M. W. F. 11 (Twenty-four lectures, beginning 6 Oct.)

**M3 Population Biology**

Module organiser: Dr A. Manica

DR A. MANICA, DR D. NUSSEY, DR K. ISVARAN, DR D. SMITH,  
 DR D. COOMES, DR W. AMOS, AND DR R. JOHNSTONE  
 M. W. F. 5 (Twenty-four lectures, beginning 6 Oct.)

**M4 Neural Mechanisms of Behaviour**

Module organiser: Dr B. Hedwig

PROF. S. LAUGHLIN, PROF. M. BURROWS, DR B. HEDWIG, DR B.  
 MCCABE, PROF. E. B. KEVERNE AND PROF. C. M. BATE  
 Tu. Th. Sa. 11 (Twenty-four lectures, beginning 5 Oct.)

**M5 Behaviour**

Module organiser: Prof. E. B. Keverne

PROF. P. BATESON, DR B. MCCABE, PROF. E. B. KEVERNE, DR N.  
 EMERY AND DR N. MUNDY  
 Tu. Th. 9, Sa. 10 (Twenty-four lectures, beginning 5 Oct.)

**M6 Cell Dynamics and Communication**

Module organiser: Dr H. Skaer

DR J. RAFF, PROF. M. ROBINSON, PROF. P. LUZIO, DR J. VINCENT,  
 PROF. P. SIMPSON, DR H. BAYLIS AND DR H. SKAER.  
 M. W. F. 4 (Twenty-four lectures, beginning 6 Oct.)

**M7 Control of Cell Growth and Genome Stability**

Module organiser: Prof. S. P. Jackson

DR J. PINES, PROF. S. P. JACKSON, DR J. RAFF, DR M. JACKMAN,  
 DR S. DRAYTON, DR T. KRUDE, DR A. MEIER AND DR T.  
 LITTLEWOOD  
 M. W. F. 9 (Twenty-four lectures, beginning 6 Oct.)

**L1 Mammalian Evolution and Faunal History**

Module organiser: Dr R. C. Preece

DR T. KEMP, DR A. E. FRIDAY, DR R. ASHER, DR E.  
 M. WESTON AND DR R. C. PREECE  
 M. W. F. 10 (Twenty-four lectures, beginning  
 19 Jan.)

**L2 Conservation Biology**

Module organiser: Dr A. Balmford

DR M. BROOKE, DR I. HODGE, DR W. AMOS, DR D.  
 COOMES, DR R. GREEN, DR E. TANNER, DR  
 J. O'SULLIVAN AND DR A. BALMFORD  
 M. W. F. 4 (Twenty-four lectures, beginning 19  
 Jan.)

All lectures to take place in the *Main Lecture  
 Theatre.*

**L3 Behavioural Ecology**

Module organiser: Dr R. A. Johnstone

PROF. N. B. DAVIES, DR R. JOHNSTONE, DR R.  
 KILNER, PROF. T. H. CLUTTON-BROCK AND  
 DR W. FOSTER

Tu. Th. Sa. 10 (Twenty-four lectures,  
 beginning 18 Jan.)

All lectures to take place in the *Main Lecture  
 Theatre.*

**L5 Genes, Genomes and Animal Evolution**

Module organiser: Prof. M. Akam

PROF. M. AKAM, DR W. AMOS, DR A. FRIDAY, DR M.  
 TELFORD AND DR N. MUNDY

M. W. F. 11 (Twenty-four lectures, beginning  
 19 Jan.)

**L6 Developmental Biology**

Module organiser: Prof. P. Simpson

DR I. PALACIOS, DR H. SKAER, DR H. BAYLIS, PROF.  
 P. SIMPSON, DR A. GOULD,  
 DR H. STANDLEY AND DR S. SHIMELD

M. W. F. 5 (Twenty-four lectures, beginning 22  
 Jan.)

**Please note the late start of the course****L7 Control of Gene Expression**

Module organiser: Dr T. Krude

DR T. KRUDE, DR A. KIRMIZIS, DR A. BANNISTER,  
 DR P. HURD, DR J. DOWNES, DR D.  
 SCADDEN, DR H. BAYLIS, PROF. C. SMITH,  
 DR I. PALACIOS AND DR N. STANDART

M. W. F. 9 (Twenty-four lectures, beginning 19  
 Jan.)

First nine lectures in the *Department of  
 Zoology*; the following fifteen lectures  
 take place in the *Department of  
 Biochemistry*

**Human Biology**

Module organiser: Prof. T. H. Clutton-Brock

PROF. T. H. CLUTTON-BROCK, PROF. E. B.  
 KEVERNE, DR A. FRIDAY, DR M. BROOKE,  
 DR B. MCCABE, DR R. JOHNSTONE AND  
 DR N. MUNDY

M. W. F. 10 (Seven lectures, beginning 27 Apr.)