

## NATURAL SCIENCES TRIPOS, PART II

MICHAELMAS 2010

LENT 2011

EASTER 2011

## ASTROPHYSICS

Course organiser: Prof. C. D. Mackay (email: [cdm@ast.cam.ac.uk](mailto:cdm@ast.cam.ac.uk))  
 Course website: <http://www.ast.cam.ac.uk/teaching/undergrad/partii/courseguide.php>

All lectures will be delivered in the *Raymond and Beverly Sackler Lecture Theatre, Hoyle Building, Institute of Astronomy* except \* which will be held in the *Centre for Mathematical Sciences meeting rooms (MR)* and † in the *Pippard Lecture Theatre at the Cavendish Laboratory (West Cambridge)*.

PROF. N. COOPER†  
 Advanced Quantum Physics. M. W. Th. F. 9  
 PROF. E. P. S. SHELLARD\*  
 Cosmology. M. W. F. 10 MR3  
 DR M. P. HOBSON  
 Theory of Relativity. M. W. F. 11  
 PROF. C. D. MACKAY  
 Topics in Astrophysics. Tu. Th. 11, F. 12  
 DR S. J. COWLEY\*  
 Computational Projects. Monday 11 October. 2–3.30,  
 MR2. (One lecture)

PROF. C. J. CLARKE  
 Astrophysical Fluid Dynamics. M. W. F. 9  
 DR D. TONG\*  
 Statistical Physics. M. W. F. 10 MR3  
 PROF. J. E. PRINGLE  
 Stellar Dynamics and Structure of Galaxies.  
 M. W. Th. 11  
 DR I. R. PARRY  
 Structure and Evolution of Stars. Tu. Th. 10,  
 F. 11

NST PART II  
BIOCHEMISTRY

Course Organiser: Dr N. M. Standart (email: [nms@mole.bio.cam.ac.uk](mailto:nms@mole.bio.cam.ac.uk))  
 Course Website: <http://www.bioc.cam.ac.uk/teaching/partii/index.html>

All lectures take place in the *Lecture Theatre of the Hopkins Building, Department of Biochemistry*, on M. Tu. W. Th. F., except Module C Branch 1, when some lectures will be in the *Department of Plant Sciences*. The course starts with an introductory lecture by PROF. G. I. EVAN at 9 a.m. on W. 6 October.

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

**Methods and Skills**

Tu. Th. 10.30  
 PROF. C. J. HOWE, DR D. NIETLISPACH, DR M. WELCH, DR T.  
 STEVENS, DR N. M. STANDART AND DR L. PELLEGRINI  
 (Eleven lectures, beginning 7 Oct.)

**Module A: Structural and Chemical Biology**

M. W. F. 10.30  
 PROF. E. D. LAUE, DR D. NIETLISPACH, DR D. OWEN, DR F.  
 HOLLFELDER, DR R. W. BROADHURST AND PROF. B.  
 LUISI  
 (Twenty-four lectures, beginning 8 Oct.)

**Module B: From Genome to Proteome**

M. W. F. 9  
 DR T. KRUDE, DR M. CHRISTOPHOROU, DR A. BANNISTER, DR  
 J. ULE, DR I. PALACIOS, DR N. M. STANDART, DR A. D.  
 J. SCADDEN AND PROF. C. J. HOWE  
 (Twenty-four lectures, beginning 8 Oct.)

**Module C: The Dynamic Cell**

Tu. Th. 9 except 21 Oct. when no lecture  
 PROF. P. DUPREE, DR A. P. JACKSON AND DR F. BUSS  
 (Twelve lectures, beginning 19 Oct.)

**Bioinformatics classes**

DR D. P. JUDGE AND DR T. STEVENS  
 2 to 5  
 21, 22, 25 Oct. in *Department of Genetics*  
 17, 25, 26 Nov. in *Department of Genetics*

**Methods and Skills**

Tu. Th. 9 and 10.30  
 DR J. L. GRIFFIN, PROF. K. M. BRINDLE, DR F.  
 HOLLFELDER AND PROF. P. DUPREE  
 (Ten lectures, beginning 25 Jan.)

**Module C continued**

**Branch 1: Bioenergy**  
 M. W. F. see detailed timetable for time and  
 venue  
 PROF. C. J. HOWE, DR J. HIBBERD, PROF. J. NAPIER,  
 PROF. P. DUPREE, DR F. HOLLFELDER,  
 PROF. S. G. OLIVER AND PROF. A. SMITH  
 (Twelve lectures, beginning 21 Jan.)

**Branch 2: Molecular Microbiology of Infectious Disease**

M. W. F. 10.30 except 14 Mar. no lecture and 16  
 Mar. when lecture at 10.30 and 12.  
 PROF. G. P. C. SALMOND, DR M. WELCH, DR D. M.  
 CARRINGTON AND DR M. K. HIGGINS  
 (Twelve lectures, beginning 18 Feb.)

**Module D: Signalling and Cancer**

M. W. F. 9 except 4 Feb. when lecture at 12.  
 PROF. G. I. EVAN, PROF. D. EASTON, PROF. K. M.  
 BRINDLE, PROF. S. JACKSON, DR E. A.  
 MISKA, PROF. A. G. SMITH, DR G. C.  
 BROWN, PROF. F. BALKWILL, DR D.  
 TUVESON, PROF. G. MURPHY, PROF. M. A.  
 STANLEY AND DR J. GRIGGS  
 (Twenty-four lectures, beginning 21 Jan.)

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## NATURAL SCIENCES TRIPOS, PART II (continued)

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## BIOLOGICAL AND BIOMEDICAL SCIENCES

Course Organiser: Dr Philip Oliver (email: p.oliver@gen.cam.ac.uk)  
 Course Website: 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. 177)
Genetics	(see p. 177)
Mechanisms of Disease*	(see p. 177)
Neuroscience	(see p. 179)
Pathology	(see p. 179)
Pharmacology	(see p. 179)
Physiology, Development and Neuroscience	(see p. 179)
Plant Sciences	(see p. 179)
Psychology	(see p. 179)
Zoology	(see p. 179)

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

Biology of Parasitism*	(see p. 181)
Biological Anthropology*	(Any of Papers BA1, BA2 or BA3 from Part IIB Biological Anthropology – see p. 181)
Education Studies*	(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. 181)
Genetics	(Any of Modules M2, M4, or M5 from NST Part II Genetics – see p. 181)
History of Medicine	(Either Paper 7 or Paper 8 from NST Part II History and Philosophy of Science – see p. 181)
History and Ethics of Medicine*	(see p. 182)
Neuroscience	(Module N6 from NST Part II Neuroscience – see p. 182)
Social and Political Sciences*	(Either Paper Soc 10, Paper Int 5 or Paper Int9 from Part II of the Social and Political Sciences Tripos – see p. 182)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

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## MAJOR SUBJECTS

## BIOCHEMISTRY

Course Organiser: Dr N. M. Standart (email nms@mole.bio.cam.ac.uk)  
 Course Website: <http://www.bioc.cam.ac.uk/teaching/partii/index.html>

The Biological and Biomedical Sciences (Major Subject Biochemistry) course consists of the lectures and classes in the Michaelmas and Lent terms from NST Part II Biochemistry (see p. 175)

## GENETICS

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

The Biological and Biomedical Sciences (Major Subject Genetics) course consists of a choice of four out of the five modules offered for NST Part II Genetics (see p. 184)  
 Minor Subjects consist of any one of modules M2, M4 or M5.  
 A detailed timetable for this course will be available in the Department of Genetics.

## MECHANISM OF DISEASE: FROM PROCESS TO PATIENT

Course organiser: Dr J. H. Xuereb (e-mail: [jhx1000@cam.ac.uk](mailto:jhx1000@cam.ac.uk))

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

Seminars and Case Studies will be held in the same venue at 2.00 p.m. unless otherwise indicated.

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

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

DR J. H. XUEREb

Introduction to course. Tu. 5 Oct.

PROF. A. H. WYLLIE.

Welcome by the Head of Department. (Starts at 3.00 p.m.) W. 6 Oct.

MS I. KUHN

Electronic literature searches.\* group 1 (seminar) Tu. 5 Oct.

Electronic literature searches.\* group 2 (seminar) F. 8 Oct.

Electronic literature searches.\* group 3 (seminar) M. 11 Oct.

DR J. H. XUEREb

An introduction to dissertations. (Seminar) (Starts at 1.30 p.m.) M. 18 Oct.

PROF. M-Q DU

How to assess a scientific paper. (Seminar) Tu. 19 Oct.

DR E. HOOK

Essay-based discussion.\*\* (Seminar) F. 26 Nov.

**Pathogen and Host Factors in Infectious Disease**

DR J. SULE

Pneumonia- racing against the escalator. W. 6 Oct.

DR JESSICA WHITE

The spectrum of disease due to mycobacterium tuberculosis. F. 8 Oct.

DR D. KUMARARATNE

Mechanism of immunity to mycobacteria in humans. M. 11 Oct.

PROF. A. MINSON

The nature of prions. Tu. 12 Oct.

DR J. H. XUEREb

Phenotypic spectrum of spongiform encephalopathy. (Lecture: 2.00–3.00pm) Tu. 12 Oct.

DR N. BROWN

Sepsis and the host's response to infection. W. 15 Oct.

DR TREVOR BAGLIN

Disseminated intravascular coagulation. (Case Study) W. 13 Oct.

DR B. KINGSTON

Malaria. Th. 14 Oct.

PROF. D. DUNNE

Schistosomiasis. (starts at 1.30–2.30pm) W. 6 Oct.

**Diseases of Immune System**

DR S. PURSEGLOVE

Infection and immunity in inflammatory bowel disease. M. 18 Oct.

DR S. PURSEGLOVE

Inflammatory bowel disease. (Case study 11:30–1.00pm) M. 18 Oct.

DR J. H. XUEREb

Writing up dissertations. (Seminar) Th. 3 Feb.

DR J. H. XUEREb

Essay-based discussion.\*\* (Seminar) F. 11 Feb.

DR J. H. XUEREb

Essay based discussion.\*\* (Seminar). F. 18 Apr.

**Endocrine and metabolic disease**

PROF. K. CHATTERJEE

Principles of nuclear hormone action. Tu. 18 Jan.

DR J. H. XUEREb

Clinico-anatomical correlation of pituitary adenoma. (Case study). Tu. 18 Jan.

PROF. K. CHATTERJEE

Nuclear receptors in human disease. W. 19 Jan.

PROF. K. CHATTERJEE

Cushing's syndrome. (Case study) W. 19 Jan.

DR A. CHAUDHRY

The kidney as endocrine organ. Th. 20 Jan.

DR D. SAVAGE

How insulin works and how it goes wrong. F. 21 Jan.

DR J. H. XUEREb

Fasting hypoglycaemia. (Case study) F. 21 Jan.

DR A. CHAUDHRY

Mechanism of renal damage in diabetes mellitus. M. 24 Jan.

DR A. CHAUDHRY

Pathophysiology of progressive renal disease. Tu. 25 Jan.

DR J. H. XUEREb

Renal Colic. (Case study) Tu. 25 Jan.

DR A. COLL

Understanding human obesity. W. 26 Jan.

DR J. BRADLEY

End-stage renal failure. (Case study) Tu. 25 Jan.

PROF. J. COMPSTON

Bone cell physiology. Th. 27 Jan.

PROF. J. COMPSTON

Pathology of metabolic bone disease F. 28 Jan.

DR J. H. XUEREb

Paget's disease. (Case study) F. 28 Jan.

PROF. V. P. COLLINS

Mitochondrial encephalomyopathies. M. 31 Jan.

DR J. H. XUEREb

Carcinoid syndrome. (Case study) M. 31 Jan.

DR D. O'DONOVAN

Peroxisomal disorders. Tu. 1 Feb.

DR J. H. XUEREb

Essay-based discussion and Review of Tripos format.\*\* (Seminar) M. 16 May.

**Transplantation**

PROF. A. BRADLEY

Clinical background to transplantation. M. 2 May

PROF. A. BRADLEY

Allograft rejection. (Lecture: 2.00–3.00pm) M. 2 May

DR C. TAYLOR

Histocompatibility. Tu. 3 May

PROF. A. BRADLEY

Immunosuppression (Lecture: 2.00–3.00pm) Tu. 3 May

PROF. A. BRADLEY

Xenotransplantation. W. 4 May

DR E. BOLTON

Transplantation tolerance. (Lecture: 2.00–3.00pm) W. 4 May

DR A. CHAUDHRY

Kidney graft for complications of diabetes mellitus. (Case study). Th. 5 May

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## NATURAL SCIENCES TRIPOS, PART II (continued)

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DR J. H. XUEREB  
Inflammation in the CNS. W. 20 Oct.

DR J. H. XUEREB  
Aetiology and pathogenesis of demyelinating diseases. Th. 21 Oct.

DR J. H. XUEREB  
Clinico-anatomical correlation in multiple sclerosis. (Case study: 10.30am–12.00pm) F. 22 Oct.

PROF. J. H. GASTON  
The role of HLA antigens in the pathogenesis of arthritis. (Lecture: 2.00–3.00pm) F. 22 Oct.

PROF. J. H. GASTON  
T Lymphocytes in joint inflammation. M. 25 Oct.

PROF. J. H. GASTON  
Cytokines in arthritis: potential therapeutic targets. Tu. 26 Oct.

DR J. H. XUEREB  
Polyarthritis. (Case study) Tu. 28 Oct.

PROF. J. H. GASTON  
Infectious agents and arthritis: Lyme disease and Reactive arthritis. Tu. 28 Oct.

DR J. H. XUEREB  
Acute monoarthritis. (Case study) F. 29 Oct.

DR M. CLATWORTHY  
Systemic lupus erythematosus I. F. 29 Oct.

DR M. CLATWORTHY  
Systemic lupus erythematosus II. M. 1 Nov.

DR M. GURNELL  
Autoimmunity in the thyroid gland. Tu. 19 Oct.

DR H. PARFREY  
Respiratory tract sensitivity. Tu. 2 Nov.

DR M. CLATWORTHY  
Polyarteritis and other microscopical arteritides. Th. 4 Nov.

DR J. H. XUEREB  
Glomerulonephritis (Case study). Th. 4 Nov.

DR R. TOOZE  
Lymphoma: an immunological perspective I. F. 5 Nov.

DR R. TOOZE  
Lymphoma: an immunological perspective II. (Lecture: 2.00–3.00pm) F. 5 Nov.

DR D. KUMARARATNE.  
Immunodeficiency-molecular mechanisms I. M. 8 Nov.

DR D. KUMARARATNE.  
Immunodeficiency: molecular mechanisms II. Tu. 9 Nov.

DR M. FARRINGTON  
Infection in the immunocompromised host. (Case study) Tu. 9 Nov.

DR D. KUMARARATNE.  
Immunodeficiency: molecular mechanisms III. W. 10 Nov.

**Diseases of the blood**

DR T. FOUKANELI  
Inherited haemolytic anaemias. Th. 11 Nov

DR J. H. XUEREB  
Megaloblastic anaemia. (Case study: 10–30am–12.00pm) F. 12 Nov.

DR A. WARREN  
Leukaemia I: transcriptional regulation of haemopoiesis. M. 15 Nov.

DR A. WARREN  
Leukaemia II: molecular pathology. Tu. 16 Nov.

DR J. CRAIG  
Pathogenesis and management of leukaemia. (Case study: 2.30–4.00pm) Tu. 16 Nov.

DR G. FOLLOWS  
Multiple myeloma. (Lecture: 2.00–3.00pm) Th. 11 Nov.

DR J. CRAIG  
Renal failure and myeloma. (Case study). W. 12 Nov.

**Pre-cancer and cancer**

DR J. WOODWARD  
Coeliac disease: malabsorption & malignancy. Th. 18 Nov.

DR J. WOODWARD  
Steatorrhoea. (Case study) Th. 18 Nov.

DR D. RASSL  
Lung cancer. F. 19 Nov.

DR R. RINTOUL  
Lambert-Eaton syndrome. (Case study) M. 29 Nov.

PROF. T. COX  
The Lysosome - a gateway to treatment. W. 2 Feb.

**Gestational, Paediatric and Inherited Diseases**

DR S. CHARNOCK-JONES  
Placental vascular morphogenesis. Th. 3 Feb.

DR S. CHARNOCK-JONES  
Pathogenesis of pre-eclampsia. F. 4 Feb.

DR S. CHARNOCK JONES  
Gestational trophoblastic disease. (Lecture: 2.00–3.00pm) F. 4 Feb.

DR K. ONG  
Fetal and early infant development. W. 9 Feb.

DR E. HOOK  
Pathophysiology of disease in the premature baby. Tu. 8 Feb.

PROF. I. HUGHES  
Disorders of sex development. Th. 10 Feb.

DR C. ACERINI  
Growth disorders of childhood. F. 11 Feb.

DR E. HOOK  
An abnormal mass in a neonate. (Case study) W. 9 Feb.

DR D. O'DONOVAN  
Biology and Pathology of muscular dystrophy. (Lecture: 2.00–3.00pm) M. 14 Feb.

DR R. ILES  
Molecular and cell biology of cystic fibrosis. Tu. 15 Feb.

**Cardiorespiratory disease**

DR J. RUDD  
Atherosclerosis. W. 16 Feb.

DR W. OUWEHAND  
Molecular and genetic mechanisms of artherothrombosis. (Lecture: 2.00–3.00pm) W. 16 Feb.

PROF. M. BENNETT  
Pathobiology of intervention in coronary artery Disease Th. 17 Feb.

PROF. M. BENNETT  
Coronary artery disease. (Case study: starts at 11.45am). Th. 17 Feb.

DR M. GODDARD  
Ischaemic cardiomyopathy. M. 22 Feb.

DR J. H. XUEREB  
Infectious endocarditis – Part I. (Case study) Th. 17 Feb.

DR M. GODDARD  
Pathophysiology of pulmonary microvasculature. Tu. 18 Feb.

DR J. H. XUEREB  
Infectious endocarditis – Part II. (Case study) (Starts at 12.00pm till 1.30pm) F. 15 Feb.

DR M. GRIFFITHS  
Chronic airways narrowing and alveolar wall destruction. M. 28 Feb.

DR J. H. XUEREB  
Restrictive lung disease. (Case study) M. 28 Feb.

**Disorders of the skin**

DR J. STERLING  
Normal and abnormal skin structure. Tu 1 Mar.

DR J. STERLING  
Skin as a renewable organ. (Lecture: 2.00–3.00pm) Tu 1 Mar.

DR N. BURROWS  
Ehlers-Danlos syndrome. (Case study: 10.30am–12.00pm). W. 2 Mar.

DR J. STERLING  
Skin as organ of immunity. Th. 3 Mar.

DR J. STERLING  
Disorders of the skin immune system. Th. 3 Mar.

DR J. STERLING  
Bullous skin disease. (Case study: 10.30am–12.00pm). M. 7 Mar.

## NATURAL SCIENCES TRIPOS, PART II (continued)

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DR M. ARENDS  
Familial predisposition to cancer: colorectal cancer. Tu. 23 Nov.

DR J. H. XUERE B  
Pancoast's syndrome. (Case study) Tu. 23 Nov.

DR E. CAMERON  
Helicobacter infection, ulceration and malignancy. W. 24 Nov.

DR E. CAMERON  
Reflux, Barrett's oesophagus and oesophageal carcinoma. (Case study) W. 24 Nov.

PROF. C. CALDAS  
Molecular biology of breast cancer. Th. 25 Nov.

DR A. CLUROE, DR S. BARTER, DR J. BENSON AND DR M. MOODY  
A lump in the breast: a multidisciplinary approach to cancer. (Case study) Th. 25 Nov.

DR M. ARENDS  
Infection and cancer: molecular biology of cervical cancer. F. 26 Nov.

DR H. SIMPSON  
Thyroid cancer. M. 22 Nov.

DR M. GURNELL  
Approach to the problem of an enlarged thyroid gland. (Case study) M. 22 Nov.

DR E. HOOK  
Biology of some childhood neoplasms. M. 29 Nov.

DR A. IBRAHIM  
Epigenetics in carcinogenesis. Tu. 30 Nov.

PROF. D. FEARON  
Tumor immunology. F. 3 Dec.

PROF. V. P. COLLINS  
Cerebral gliomas: the pathway and molecular biology. Tu. 2 Dec.

DR J. H. XUERE B  
Cerebral oedema and intracranial pressure. (Case study) Tu. 2 Dec.

**Neurodegeneration**  
DR J. H. XUERE B  
Alzheimer's disease. W. 9 Mar.

DR J. H. XUERE B  
Non-Alzheimer dementia: abnormalities of tau. (Starts at 11.30am till 12.30pm) Th. 10 Mar.

DR J. H. XUERE B  
Tau-related neurodegenerative disorders. F. 11 Mar.

DR J. ROWE  
Movement disorders. (Case study). F. 11 Mar.

**Hepatobiliary disease**  
DR M. HOARE  
Virological and immunological aspects of hepatotropic viruses. M. 14 Mar.

DR V. PHILLIPS  
Patterns and pathogenesis of liver disease –I (Starts at 12.00pm till 1.00pm) Tu. 15 Mar.

DR V. PHILLIPS  
Patterns and pathogenesis of liver disease –II W. 16 Mar.

DR W. GRIFFITHS  
Cirrhosis of the liver. (Case study) W. 16 Mar.

DR R. PRASEEDOM  
Surgical aspects of jaundice. (Case study) Th. 17 Mar.

## NEUROSCIENCE

Course organiser: Dr T. Bussey (email: [tjb1000@cam.ac.uk](mailto:tjb1000@cam.ac.uk))  
General enquiries: Paul Frost and Vicky Johnson (Room E4, Physiology), or: [pdn-part2-admin@lists.cam.ac.uk](mailto:pdn-part2-admin@lists.cam.ac.uk)  
Course Website: [www.pdn.cam.ac.uk/teaching/](http://www.pdn.cam.ac.uk/teaching/)

The Biological and Biomedical Sciences (Major Subject Neuroscience) course consists of any four of the eight modules offered for Part II Neuroscience. (see p. 189).

Detailed timetables will be posted in the Department.

## PATHOLOGY

Course Organiser: Dr A. Kelly (email: [apk23@cam.ac.uk](mailto:apk23@cam.ac.uk))  
Course Website: <http://www.path.cam.ac.uk/ugrad/third-year.html>

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 of NST Part II Pathology (see p. 191)  
(however, a combination of modules A and E is prohibited).

## PHARMACOLOGY

Course Organiser: Dr L. Heisler (email: [lkh30@cam.ac.uk](mailto:lkh30@cam.ac.uk))  
Course Website: [http://www.phar.cam.ac.uk/teaching/tea\\_part2.html](http://www.phar.cam.ac.uk/teaching/tea_part2.html)

The Biological and Biomedical Sciences (Major Subject Pharmacology) course consists of the same lectures as for NST Single Subject Pharmacology (see p. 192)

## PHYSIOLOGY, DEVELOPMENT AND NEUROSCIENCE

Course organiser: Dr S. Sage (email: [sos10@cam.ac.uk](mailto:sos10@cam.ac.uk))  
General enquiries: Paul Frost and Vicky Johnson (Room E4, Physiology), or: [pdn-part2-admin@lists.cam.ac.uk](mailto:pdn-part2-admin@lists.cam.ac.uk)  
Course Website: [www.pdn.cam.ac.uk/teaching/](http://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: P3, P4, P6, P7. Integrative Physiology: P1, P3, P7, P8. (see p. 193)

Detailed timetables will be posted in the Department

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

Course Organiser: Prof. H. Griffiths (email: hg230@cam.ac.uk)  
Course Website: [www.plantsci.cam.ac.uk/teaching/psii/index.html](http://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 modules from NST Part II Plant Sciences. Students can offer either Cellular Plant Sciences (modules M1, M4, L1 and L2), or Ecological Plant Sciences (modules M3 and either M1 or Zoology M3; and L2, Zoology. L2). (see pp. 199 and 201)

**PSYCHOLOGY**

Course Organiser: Dr L. Clark (e-mail lc260@cam.ac.uk)  
Course Website: [www.psychol.cam.ac.uk/pages/undgrad.html#Courseb](http://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 same lectures as for NST Part II Psychology (see p. 199)

**ZOOLOGY**

Course Organiser: Prof. A. Balmford, apb12@cam.ac.uk  
Course Website: <http://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 offers six Major Subjects, made up of modules offered in NST Part II Zoology (see p. 201) and some modules offered in NST Part II Plant Sciences (see p. 191) and NST Part II Genetics (see p. 184). The following combinations are available:

*Cells and Development:* Modules M6, M7 or M8 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, History and Future of Vegetation) and L2, L3

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**MINOR SUBJECTS****BIOLOGY OF PARASITISM**

Course Organiser: Dr S. Lloyd (email: ssl1000@hermes.cam.ac.uk)  
 Course Website: <http://www.bio.cam.ac.uk/sbs/facbiol/bbs/bop.html>

All lectures take place in *the Department of Pathology* on M. Tu. Th. 4 p.m.

Lecture 1. Overview of developments. Basic morphology and life cycles

Lectures 2–6. Adaptations for transmission. Structural and behavioural modifications including host recognition by free-living stages (trematodes, nematodes, arthropods).

Lectures 7–11. Epidemiology of fasciolosis, gastro-intestinal nematodes and ticks and their associated diseases (liver pathology, anaemia, disease transmission, including endemic stability of infections).

Lectures 12–14. Recognition of and development of *Plasmodium*, *Leishmania* and *Trypanosoma* in intermediate hosts.

Lecture 15, 16. Innate invertebrate immune responses to parasites.

Lectures 17–23. Zoonoses (variously *Taenia*, *Echinococcus*, *Toxocara*, *Cryptosporidium*, *Giardia*)

Lectures 24–26. Zoonoses (*Toxoplasma*, *Trichinella*).

Lectures 27–31. Chemotherapy and resistance to insecticides and anthelmintics

Lecture 32–35. Alternate methods of control, including bioinsecticides and biological control

**BIOLOGICAL ANTHROPOLOGY**

Course Organiser: Dr T. Kivisild (email tk331@cam.ac.uk)  
 Course Website: <http://www.bio.cam.ac.uk/sbs/facbiol/bbs/BioAnthWeblink.pdf>

The Biological and Biomedical Sciences (Minor Subject Biological Anthropology) courses consist of any one of the following three papers, which form part of Part IIB Biological Anthropology: Paper BA1: The Human Animal, Paper BA2: The Human Journey, or Paper BA3: The Human Lifespan (see p. 216)

**EDUCATION STUDIES**

Course Organisers: Dr J. Whitehead (Psychology of Education, e-mail jmw3@cam.ac.uk), Dr I. Frowe (Philosophy of Education, email ilf21@cam.ac.uk), Dr R. Moore (Sociology of Education, rm233@cam.ac.uk), Dr P. Gardner (History of Education, email pwg1000@cam.ac.uk)

Further information can be obtained at <http://www.educ.cam.ac.uk/ugrad/edstud.html>

The Biological and Biomedical Sciences (Minor Subject Education) courses consist of any one 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. 238)

**GENETICS**

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

The Biological and Biomedical Sciences (Minor Subject Genetics) courses consist of any one of modules M2, M4 or M5 offered for NST Part II Genetics (see p. 184)

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

**HISTORY OF MEDICINE**

Course Organiser: Dr L. Kassell (email: ltk21@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. 185)

*Students taking the BBS one-paper subjects in History of Medicine should come to the Part II induction meeting on Wednesday 6 October at 11am in Seminar Room 2, Department of History and Philosophy of Science, Free School Lane.*

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

MICHAELMAS 2010

LENT 2011

EASTER 2011

**HISTORY AND ETHICS OF MEDICINE**

Course Organiser: Dr V. Heggie (email: [vh261@cam.ac.uk](mailto:vh261@cam.ac.uk)). Further information can be obtained at [www.hps.cam.ac.uk/students](http://www.hps.cam.ac.uk/students)

Lectures are held in *Mill Lane Lecture Room 4*.

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

The same continued. M. 4 (weeks 1–4)

DR L. KASSELL AND DR V. HEGGIE  
History of Medicine. M. 4 (weeks 1–8)

The same continued. Tu. 4 (weeks 1–4)

**NEUROSCIENCE**

Course organiser: Dr J. Rogers (email: [jhr11@cam.ac.uk](mailto:jhr11@cam.ac.uk))

General enquiries: Paul Frost and Vicky Johnson (Room E4, Physiology), or: [pdn-part2-admin@lists.cam.ac.uk](mailto:pdn-part2-admin@lists.cam.ac.uk)

Course Website: [www.pdn.cam.ac.uk/teaching/](http://www.pdn.cam.ac.uk/teaching/)

The Biological and Biomedical Sciences (Minor Subject Neuroscience) courses consist of module N6. (see p. 189)

Detailed timetables will be posted in the Department.

**SOCIAL AND POLITICAL SCIENCES**

Course Website: <http://www.sps.cam.ac.uk/current/undergraduate/index.html>

The Biological and Biomedical Sciences (Minor Subject Social and Political Sciences) courses consist of either of the following two papers, which form part of Social and Political Sciences Tripos Part II

Course Organiser: Dr D. Weinberg (email: [dtw23@cam.ac.uk](mailto:dtw23@cam.ac.uk))  
Paper Soc 10: Medicine, Body, and Society (see p. 124)

Course Organiser: Dr P. Mody (email: [pm10012@cam.ac.uk](mailto:pm10012@cam.ac.uk))  
Paper Int 5: Gender, Kinship, and Care (see p. 124)

Course Organiser: Prof. S. Golombok (email: [seg42@cam.ac.uk](mailto:seg42@cam.ac.uk))  
Paper Int 9: The Family (see p. 124)



## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

CHEMISTRY  
 PHYSICAL SCIENCES: HALF SUBJECT CHEMISTRY

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

All lectures will be given in the *Department of Chemistry, Lensfield Road*

Students must register for the course in the *Department of Chemistry, Lensfield Road*, between 0900 and 1300 or 1400 and 1600 on Tu. 5 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 1200 on W. 6 Oct. in the *Pfizer Lecture Theatre*.

EXPERIMENTAL AND THEORETICAL PHYSICS  
 PHYSICAL SCIENCES: HALF SUBJECT EXPERIMENTAL AND THEORETICAL PHYSICS

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

All students must take all four **Core courses** in the Michaelmas Term, three of the **Options courses** in the Lent and Easter Terms, and **Computational Physics**. They must in addition take three courses from **Physics Education, Theoretical Options** and **Other Further Work**.

There is a test (under exam conditions) of the material of the **Theoretical Options** 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 courses** Concepts in Physics and Current Research Work in the Cavendish Laboratory.

The course will begin with a meeting on the first Wednesday of Full Term (6 Oct.) at 9.30 a.m. in the *Pippard Lecture Theatre*.

Students taking Half Subject Experimental and Theoretical Physics as part of Part II Physical Sciences will take any two of the **Core courses** in the Michaelmas term and any one of the **Options courses** in the Lent and Easter terms. Candidates also take two units of further work selected from **Theoretical Options, Physics Education** and **Other Further Work**. A prior knowledge of Physics equivalent to the material covered in Part IB Physics A and Part IB Physics B will be assumed.

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

**Core Courses**

PROF. E. M. TERENTJEV  
 Thermal and Statistical Physics. (Eighteen lectures) Th.  
 10 (First two weeks only) Tu. F. 9  
 PROF. N. R. COOPER  
 Advanced Quantum Physics. M. W. Th. 9  
 DR H. P. HUGHES  
 Optics and Electrodynamics. M. W. 10  
 DR M. P. HOBSON  
 Relativity M. W. F. 11 *Sackler Lecture Theatre, IoA*

**Computational Physics****Non-examinable courses**

PROF. C. D. MACKAY  
 Topics in Astrophysics. Tu. Th. 11, F. 12 *Sackler Lecture Theatre, IoA*

**Theoretical Options**

PROF. W. J. STIRLING AND DR C. H. W. BARNES  
 Theoretical Physics TP1. M. W. 12 (Twelve lectures  
 beginning 11 Oct.); Tu. 2–4 (Four classes, 19 Oct., 2  
 Nov., 16 Nov., 30 Nov.)

**Options Courses**

DR M. GROSCHÉ  
 Quantum Condensed Matter Physics. Tu. Th.  
 10  
 PROF. C. J. CLARKE  
 Astrophysical Fluid Dynamics. M. W. F. 9  
*Sackler Lecture Theatre, IoA*  
 PROF. D. R. WARD AND DR C. G. LESTER  
 Particle and Nuclear Physics. M. W. 10  
 DR P. CICUTA  
 Soft Condensed Matter. T. Th. 9

DR J. S. RICHER AND OTHERS  
 Computational Physics. M. W. 12 (First eight  
 lectures)

PROF. P. B. LITTLEWOOD  
 Concepts in Physics. M. W. 12 (Eight lectures  
 beginning 21 Feb.)

THE STAFF OF THE CAVENDISH LABORATORY  
 Current Research Work in the Cavendish  
 Laboratory (not examinable). See Part  
 III Experimental and Theoretical Physics  
 (p. 202)

PROF. M. C. PAYNE AND PROF. R. J. NEEDS  
 Theoretical Physics TP2. Tu. Th. 12 (Twelve  
 lectures, beginning 27 Jan.); Tu. 2–4  
 (Four classes, 1 Feb., 15 Feb., 1 Mar., 15  
 Mar.)

**Options Courses (continued)**

DR M. GROSCHÉ  
 The same continued. Tu. W. F. 10 (First six  
 lectures)  
 PROF. D. R. WARD AND DR C. G. LESTER  
 The same continued. M. W. F. 9 (First six  
 lectures)  
 DR P. CICUTA  
 The same continued. M. 10. Tu. Th. 9 (First  
 six lectures)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

**Physics Education**DR L. JARDINE-WRIGHT AND OTHERS  
Physics Education.**Other Further Work**DR W. ALLISON AND OTHERS  
Experiment E1.DR F. M. GROSCHE AND OTHERS  
Research Review.DR D. F. BUSCHER  
Long Vacation ProjectDR L. JARDINE-WRIGHT AND OTHERS  
The same continued.DR W. ALLISON AND OTHERS  
Experiment E2.DR F. M. GROSCHE AND OTHERS  
The same continued.**GENETICS**Course Organisers: Dr C. Farr and Dr M. Segal (email: [partII.organisers@gen.cam.ac.uk](mailto:partII.organisers@gen.cam.ac.uk))  
Course Website: <http://www.gen.cam.ac.uk/undergrad/nst2genetics.html> (and link to course CamTools website)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.

**M1: Chromosomes, the Cell Cycle and Cancer**PROF. M. ASHBURNER, DR V. DRAVIAM, DR C. FARR, PROF. D. GLOVER, DR C. LINDON AND DR M. SEGAL  
(Twenty-four lectures, beginning 7 Oct.)**M2: Plant and Microbial Genetics**DR I. FURNER, DR A. GRANT, DR P. OLIVER, AND DR D. SUMMERS  
(Twenty-four lectures, beginning 7 Oct.)**M3: Developmental Genetics**DR J. AHRINGER, PROF. A. MARTINEZ-ARIAS, PROF. D. ST JOHNSTON, DR K. ROPER, DR B. SANSON AND PROF. F. WATT  
(Twelve lectures, beginning 15 Nov.)**M4: Human Genetics, Genomics and Systems Biology**PROF. M. ASHBURNER, DR C. FARR, DR R. LOOS, DR G. MICKLEM AND DR S. RUSSELL  
(Twelve lectures, beginning 15 Nov.)

Long Reading Weekend. 5 Nov. – 8 Nov.

**M5: Evolutionary Genetics**PROF. R. FOLEY, DR S. FROST, DR F. JIGGINS, DR T. KIVISILD, DR C. TYLER-SMITH, DR L. WEINERT AND DR J. WELCH  
(Twenty-four lectures, beginning 19 Jan.)**M3: Developmental Genetics**

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

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

The same continued. (Twelve lectures, beginning 7 Feb.)

Reading Week. 14 Feb. – 18 Feb.

Revision supervisions (Five group sessions, dates to be announced)

**GEOLOGICAL SCIENCES AND MINERAL SCIENCES**Course Website: <https://camtools.caret.cam.ac.uk/> and  
<http://www.esc.cam.ac.uk/teaching/geological-sciences> and  
<http://www.esc.cam.ac.uk/teaching/mineral-sciences>**Core C1 Geophysics**PROF. J. A. JACKSON, PROF. D. MCKENZIE AND A. N. OTHER  
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. TURCHYN AND DR S. GIBSON  
Convenor: Dr T. J. B. Holland  
Lectures. T. F. 2 *Harker Room*  
Practicals. T. F. 3–5 *Petrology Laboratory***Core C3 Sedimentology and Palaeontology**DR N. HOVIUS, DR K. MCNAMARA AND DR L. HARPER  
Convenor: Dr N. Hovius  
Lectures. W. F. 9 *Harker Room*  
Practicals. W. F. 10–12 *Palaeontology Laboratory***Option 6 Continental Tectonics and Mountains**PROF. J. A. JACKSON AND PROF. D. MCKENZIE  
Convenor: Prof. J. A. Jackson  
Lectures. Tu. Th. 2 *Tilley Room*  
Practicals. Tu. Th. 3–4.30 *Petrology Laboratory***Option 7 Oceanic and Continental Margins**PROF. R. S. WHITE AND DR J. MACLENNAN  
Convenor: Prof. R. S. White  
Lectures. W. F. 9 *Harker Room*  
Practicals. W. F. 10–11.30 *Petrology Laboratory***Option 8 Magmatic Processes**DR S. GIBSON, DR M. HOLNESS AND PROF. A. WOODS  
Convenor: Dr S. Gibson  
Lectures. M. W. 2 *Harker Room*  
Practicals. M. W. 3–4.30 *Palaeontology Laboratory*

The same continued. (Eight revision sessions)

The same continued. (Eight revision sessions)

The same continued. (Eight revision sessions)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

**Core C4 Mineralogy**

PROF. M. A. CARPENTER, DR I. FARNAN AND DR R. J. HARRISON

Convenor: Dr R. J. Harrison

Lectures. M. 9. W. 2 *Harker 2 room***Practicals.** M. 10–12, W. 3–5 *IB Mineralogy Laboratory***Core C5 Mineral Physics**

PROF. E. ARTACHO AND MR P. WELCHE

Convenor: Prof. E. Artacho

Lectures. W. 9, F. 9 *Harker 2 room***Practicals.** W. 10–12, F. 3–5 *IB Minerals Laboratory***Skills Course S1**

DR N. H. WOODCOCK

Convenor: Dr N. H. Woodcock *Harker Room and**Computer Room* (First two weeks) M. Tu. W. Th. F

12–1 M. Th. 2–5

**Field Course to Greece**

3–11 December or 7–15 December

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

**Option 9 Climate Change**

PROF. D. HODELL, DR A. PIOTROWSKI AND DR A. TURCHYN

Convenor: Prof. D. Hodell

Lectures. Tu. Th. 9 *Harker Room***Practicals.** Tu. Th. 10–11.30 *Petrology Laboratory***Option 10 Ancient Ecosystems**

DR N. J. BUTTERFIELD AND PROF. S. CONWAY MORRIS

Convenor: Dr N. J. Butterfield

Lectures. M. 9, F. 2 *Harker Room***Practicals.** M. 10–11.30, F. 3–4.30 *Palaeontology Lab***Option M4 Mechanical Behaviour and Minerals**

PROF. S. A. T. REDFERN AND DR R. HARRISON

Convenor: Prof. S. A. T. Redfern

Lectures. Tu. F. 2 *Harker 2 room***Practicals.** Tu. F. 3–4.30 *IB Minerals Laboratory***Option M5 Computational Methods in Crystal Physics**

PROF. E. ARTACHO AND OTHERS

Convenor: Prof. E. Artacho

Lectures. M. W. 9 *Harker 2 room***Practicals.** M. 10–11.30, W. 3–4.30 *IB Minerals Lab.***Option M6 Diffraction, Electron Microscopy and Microanalysis**

PROF. E. SALJE, DR J. LOUDON, PROF. M. T. DOVE AND DR C. M. PETRONE

Convenor: Prof. E. Salje

Lectures. Th. 2, F. 9 *Harker 2 room***Practicals.** Th. 3–4.30, F. 10–11.30 *IB Minerals Lab.*

The same continued. (Eight revision sessions)

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**

Course Organiser: Dr L. Kassell (email: ltk21@cam.ac.uk)

A detailed timetable and course handbook are available from the Department and at [www.hps.cam.ac.uk/timetable](http://www.hps.cam.ac.uk/timetable)*Dr Kassell would like to see all Part II students taking HPS on Wednesday 6 Oct. at 11 a.m. 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 sets of seminars: those associated with the papers they are taking plus, for Option A students, the seminars of one other source of their choice.*

Paper 1: DR E. ROBSON

Letters, Queries and Reports from Assyrian Scholars

(http://knp.prs.heacademy.ac.uk). Tu. 4 (weeks 1–4)

Paper 2: PROF. S. SCHAFFER, DR N. REEVES, DR P. FARA AND MR R. GASKELL

Sir John Pringle, *Six discourses delivered on the occasion of six annual assignments of Sir Godfrey Copley's Medal* (1783). W. 11 (weeks 1–4)

Paper 3: DR P. WHITE, MS S. INNES AND DR A. PEARN

Charles Darwin's correspondence ([www.darwinproject.ac.uk](http://www.darwinproject.ac.uk)). Tu. 12 (weeks 1–4)

Paper 4: DR T. LEWENS

Bas van Fraassen, *The Scientific Image* (1980). Th. 10 (weeks 1–4)

Paper 5: DR K. BROSNAN

Bruno Latour, *Science in Action* (1987). F. 10 (weeks 1–4)

Paper 6: PROF. J. FORRESTER

Michel Foucault, *Psychiatric Power* (1973–4). W. 2 (weeks 1–4)

Paper 7: DR L. KASSELL AND DR K. EKHOLM

Helkiah Crooke, *Microcosmographia* (1615), Book 4. Th. 3 (weeks 1–4)

Paper 8: DR N. HOPWOOD, DR S. AL-GAILANI AND DR V. HEGGIE

'Drama of Life Before Birth' (*Life*, 1965). Tu. 2 (weeks 1–4)

Paper 9: PROF. H. CHANG

O. Neurath and others, 'The scientific conception of the world: Vienna Circle' (1929). M. 10 (weeks 1–4)

**Dissertation Seminars**

Tu. W. 4 (weeks 3–6)

*It is essential that students attend at least two of these seminars.*

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

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

Course Organisers: Dr L. Taub (email: lct1001@cam.ac.uk) (Michaelmas & Easter Terms) and Dr E. Robson (email: er264@cam.ac.uk) (Lent Term)

DR E. ROBSON

Primary Source. Tu. 4 (weeks 1–4)

DR E. ROBSON

Patronage and Science in the Middle East. Th. 12 (weeks 1–8)

PROF. L. TAUB

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

PROF. L. TAUB AND DR C. EAGLETON

Instruments, Books and Collections. F. 11 (weeks 7–8),  
with an additional two-hour lecture on Friday 3  
December at 11am

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

Course Organiser: Prof. S. Schaffer (email: sjs16@cam.ac.uk)

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

Primary Source. W. 11 (weeks 1–4)

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

Natural Philosophy and Exact Sciences. Tu. 3 (weeks 1–8); W. 11 (weeks 5–8)

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

Course Organisers: Prof. J. Secord (email: jas1010@cam.ac.uk) (Michaelmas Term) and Dr N. Reeves (nr218@cam.ac.uk) (Lent & Easter Terms)

DR P. WHITE, MS S. INNES AND DR A. PEARN

Primary Source. Tu. 12 (weeks 1–4)

PROF. J. SECORD

Science, Industry and Empire: An Introduction. F. 11 (weeks 1–4)

PROF. S. SCHAFFER AND DR C. RAMALINGAM

Laboratories and Disciplines. W. 10 (weeks 1–8)

DR M. KEENE AND DR S. QURESHI

Evolution. M. 2 (weeks 5–8)

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

Course Organisers: Dr T. Lewens (email: tml1000@cam.ac.uk) and Prof. H. Chang (email: hc372@cam.ac.uk)

DR T. LEWENS

Primary Source. Th. 10 (weeks 1–4)

DR K. BROSNAN

Causation, Explanation and Law. M. 11 (weeks 1–8)  
(*Mill Lane Lecture Room 4*)

DR T. LEWENS

Induction and the Sciences. W. 12 (weeks 1–4) (*Mill Lane Lecture Room 4*)

PROF. H. CHANG

Scientific Realism. Th. 10 (weeks 5–8)

**(Paper 5) Science in Society**

Course Organiser: Dr K. Brosnan (email: kb407@cam.ac.uk)

DR K. BROSNAN

Primary Source. F. 10 (weeks 1–4)

DR A. BOSTANCI

Sociology of Scientific Knowledge. M. 3 (weeks 1–8)

PROF. J. SECORD

Science Communication. F. 10 (weeks 5–8)

DR R. PRINCE

Science, Medicine and Society in Africa. Tu. 4 (weeks 5–8)

DR S. MALIK

Arabic Science. M. 2 (weeks 1–4)

DR S. KUSUKAWA

Nature in the Renaissance, 1450–1630. M. 2 (weeks 5–8)

DR A. CUNNINGHAM

Sects and Nature. W. 11 (weeks 1–4)

DR A. CUNNINGHAM

Quicksilver: A Social History of Mercury. W. 11 (weeks 5–8)

PROF. SIR GEOFFREY LLOYD

Greek and Chinese Science (*two-hour lecture-discussion sessions: no supervisions*). F. 2 (weeks 7–8)

PROF. N. JARDINE AND OTHERS

Natural Histories. M. 11 (weeks 1–8)

DR L. KASSELL AND DR J. RAMPLING

Occult Philosophies. Th. 3 (weeks 1–8)

DR C. EAGLETON

Instruments, Models and Tools. F. 11 (weeks 5–8)

DR S. QURESHI

Science and Empire. Tu. 11 (weeks 1–8)

DR P. WHITE

The Experimental Novel. M. 10 (weeks 1–4)

DR E. ROBSON

Empire, Science and Biblical Archaeology. M. 10 (weeks 5–8)

DR M. KEENE

Science For All. Th. 10 (weeks 1–4)

DR K. BROSNAN

Philosophy of Biology. Tu. 10 (weeks 1–8)

PROF. H. CHANG

Philosophy of Chemistry. Th. 11 (weeks 1–4)

PROF. H. CHANG AND DR J. BUTTERFIELD

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

PROF. H. CHANG

The Language of Scientific Theories. W. 12 (weeks 1–4)

DR E. ROBSON

The Material Culture of Mathematics. Th. 12 (weeks 1–8)

DR P. FARA, DR S. QURESHI, DR E. ROBSON AND DR L. ROCHA

Science and Gender. Tu. 2 (weeks 5–8)

DR R. PRINCE

The same continued. M. 3 (weeks 1–4)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

**(Paper 6) History and Philosophy of Mind**

Course Organiser: Prof. J. Forrester (email: jpf11@cam.ac.uk)

PROF. J. FORRESTER

Primary Source. W. 2 (weeks 1–4)

PROF. J. FORRESTER

Freud, Psychoanalysis and the Twentieth Century. Th. 11 (weeks 1–8); W. 2 (weeks 5–8)

PROF. T. CRANE

Meaning and Mental Representation. Tu. 12 (weeks 5–8)

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

Course Organiser: Dr L. Kassell (email: ltk21@cam.ac.uk)

DR L. KASSELL AND DR K. EKHOLM

Primary Source. Th. 3 (weeks 1–4)

DR L. KASSELL, DR E. BRENNER, DR N. KAOUKJI, DR J. RAMPLING AND DR K. EKHOLM

Medicine and Society, 1100–1700. F. 12 (weeks 1–8)

MR P. JONES

Medicine and Communication, 1375–1640. Th. 3 (weeks 5–7), with an additional lecture on Thursday 2 December at 3pm

**(Paper 8) Modern Medicine and Biomedical Sciences**

Course Organiser: Dr N. Hopwood (email: ndh12@cam.ac.uk)

DR N. HOPWOOD, DR S. AL-GAILANI AND DR V. HEGGIE  
Primary Source. Tu. 2 (weeks 1–4)DR N. HOPWOOD, DR V. HEGGIE AND DR S. AL-GAILANI  
Making Modern Medicine.

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

DR N. HOPWOOD AND DR V. HEGGIE

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: Dr M. Frasca-Spada (email: mfs10@cam.ac.uk)

PROF. H. CHANG

Primary Source. M. 10 (weeks 1–4)

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

Ideologies of Science. Tu. 10 (weeks 1–8); M. 10 (weeks 5–8)

DR M. FRASCA-SPADA AND DR S. JOHN

Sources of Knowledge: Locke, Berkeley and Hume. F. 2 (weeks 1–8)

DR A. AHMED

Personal Identity and Consciousness. F. 10 (weeks 1–8) (*Mill Lane Lecture Room 4*)

PROF. G. BERRIOS

History of Psychopathology and Psychiatry. W. 2 (weeks 1–4)

DR L. BRADDOCK

Philosophical Approaches to Psychoanalysis. W. 2 (weeks 5–8)

DR L. KASSELL, DR E. BRENNER, DR N. KAOUKJI,  
DR J. RAMPLING AND DR K. EKHOLM

The same continued. F. 12 (weeks 1–8)

DR R. FLEMMING AND DR D. LEITH

Medicine and Society in Greco-Roman Antiquity.

Th. 2 (weeks 1–8)

DR E. ROBSON

Mesopotamian Medicine. Tu. 2 (weeks 1–4)

DR N. HOPWOOD AND DR S. AL-GAILANI  
Reproductive Technologies. M. 12 (weeks 1–8)

DR V. HEGGIE

Extreme Physiology. Tu. 12 (weeks 1–4)

DR A. NATHOO

History and Politics of Global Health. Tu. 12 (weeks 5–8)

DR M. FRASCA-SPADA, PROF. N. JARDINE AND DR  
A. BREITNEBACH

Sources of Knowledge: Kant. W. 10 (weeks 1–6, 8); W. 12 (week 6)

PROF. N. JARDINE AND DR C. CHIMISSO

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

DR P. FARA

People and Pictures. F. 11 (weeks 1–4)

Attention is drawn to courses announced by other authorities. Students are particularly advised to attend relevant courses in the Faculties of Classics, History, Philosophy, and Politics, Psychology, Sociology and International Studies.

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## MATERIALS SCIENCE

Course Organiser: Prof. S. M. Best (email: PartII@msm.cam.ac.uk)  
 Course Website: www.msm.cam.ac.uk/teaching/  
 A detailed timetable is available on the Department website.

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

DR J. A. ELLIOTT

**C1** Introduction to Materials Modelling (Nine lectures)

DR E. R. WALLACH

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

DR K. M. KNOWLES

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

PROF. P. A. MIDGLEY

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

PROF. H. K. D. BHADESHIA

**C6** Crystallography. (Nine lectures)

DR K. M. KNOWLES

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

DR C. RAE

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

PROF. T. W. CLYNE

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

Details available from the Department website.

**Visit to Industry**

Details available from the Department website.

**Examples Classes**

Timetable available on the Department website.

**Practical Work**

Details available from the Department website.

**Management or Language Options**

Details available from the Department website.

PROF. M. G. BLAMIRE

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

PROF. A. L. GREER

**C7** Kinetics. (Nine lectures)

DR J. A. LITTLE

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

DR P. E. J. RIVERA

**C9** Alloys (Nine lectures)

PROF. A. H. WINDLE

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

PROF. S. M. BEST

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

PROF. W. J. CLEGG

**C13** Ceramics. (Nine lectures)

PROF. R. E. CAMERON

**C14** Polymer Processing. (Six lectures)**Speakers from Industry**

Details available from the Department website.

**Visit to Industry**

Details available from the Department website.

**Examples Classes**

Timetable available on the Department website.

**Practical Work and Literature Review**

Details available from the Department website.

**Management or Language Options**

Details available from the Department website.

DR J. A. LITTLE

**C17** Heat and Mass Transfer. (Six lectures)

PROF. S. M. BEST

**C18** Biomaterials. (Six lectures)**Examples Classes**

Timetable available on the Department website.

**Project**

Details available from the Department website.

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## NEUROSCIENCE

Course Organiser: Dr J. H. Rogers (email: jhr11@cam.ac.uk)  
 Course Website: www.bio.cam.ac.uk/teaching/neuroscience

The course consists of a series of workshops, lectures and seminars around a framework of modules.  
 Detailed timetables will be posted in the Department.

**Module N1: Developmental Neurobiology**

M. 9, Th. 9, F. 10

Organisers: Prof. R. J. Keynes (rjk10@cam.ac.uk)

Venue: Hodgkin Huxley Seminar Room

PROF. M. BATE

Neurogenesis and patterning (Six lectures: 7–18 Oct.)

DR G. M. W. COOK

Axon guidance (Four lectures: 21–28 Oct.)

DR M. LANDGRAF

Synapse formation (Three lectures: 29 Oct.–4 Nov.)

DR A. TOLKOVSKY

Neurotrophic factors (Two lectures: 5–8 Nov.)

DR R. LIVESEY

Development of cerebral cortex (Three lectures: 11–15 Nov.)

DR S. EGLÉN

Topographic map formation and tuning (Three lectures: 18–22 Nov.)

PROF. E. B. KEVERNE

Genetics and evolution of brain development (Three lectures: 25–29 Nov.)

and Journal Clubs, Tu. 2–4 pm:

DR M. LANDGRAF (9 Nov.)

DR A. TOLKOVSKY (16 Nov.)

**Module N2: Molecular Neuroscience**

(Molecular and Cellular Pharmacology)

M. 10, W. 9, F. 9

Organiser: Prof. J. Morton (ajm41@cam.ac.uk)

Venue: Pharmacology Lecture Theatre

DR R. D. MURRELL-LAGNADO

Voltage-gated ion channels (Five lectures: 8–18 Oct.)

DR B. BILLUPS

Glutamatergic transmission (Five lectures: 20–29 Oct.)

M. W. F. 9

DR H. L. RODERICK

Calcium Signalling and the Heart (Five lectures: 1–10 Nov.)

DR S. B. HLADKY

Cys-Loop Family of Ligand-gated Ion Channels (Three lectures: 12–17 Nov.)

PROF. J. M. EDWARDSON

Synaptic Mechanisms (Six lectures: 19 Nov.–1 Dec.) 24 Nov. W. 10

**Module N5: Neural Degeneration and Regeneration**

M. 9, W. 9, Th. 9

Organiser: Prof. R. Keynes (rjk10@cam.ac.uk)

Venue: TBA

DR J. MORTON

Neurodegenerative diseases (Four lectures: 20–27 Jan.)

DR R. TASKER

Damage to neurons: Ischaemia, excitotoxicity, and stroke (Four lectures: 31 Jan.–7 Feb.)

DR P. DE VRIES

Molecular genetics of neuropsychiatric disorders (Two lectures: 9–10 Feb.)

PROF. J. FAWCETT

Spinal cord injury and regeneration of axons (Four lectures: 14 Feb.–21 Feb.)

DR W. PHILLIPS

Parkinson's disease and neural grafting (Four lectures: 23 Feb.–2 Mar.)

DR J. BETSCHINGER

Neural stem cells and adult neurogenesis (Three lectures: 3 Mar.–9 Mar.)

PROF. R. FRANKLIN

Glial degeneration and repair (Three lectures: 10 Mar.–16 Mar.)

**Module N6: Central Mechanisms of Sensation and Behaviour**

Tu. 9, Tu. 11, Th. 10

Organiser: Prof. R. H. S. Carpenter (rhsc1@cam.ac.uk)

Venue: Hodgkin Huxley Seminar Room

PROF. R. D. PATTERSON

Central processing of auditory information (Four lectures: 25 Jan.–1 Feb.)

DR D. J. TOLHURST

Higher processing of visual information (Three lectures: 1–8 Feb.)

DR M. LENGYEL

The computational neuroscience of learning and memory (Four lectures: 8–15 Feb.)

PROF. S. LAUGHLIN

Neural mechanisms of sensory and motor integration (Four lectures: 17–22 Feb.)

PROF. W. SCHULTZ

Neurobiology of reward (Four lectures: 1–8 Mar.)

PROF. A. C. ROBERTS

Neural basis of emotion, and its regulation (Four lectures: 8–10 Mar.)

PROF. W. SCHULTZ

NeuroDebate (One workshop: F. Mar. 11, 2–4 pm)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

**Module N3: Control of Action**

Tu. 9, Tu. 11, F. 11

Organiser: Dr S. A. Edgley (sae1000@cam.ac.uk)

Venue: Hodgkin Huxley Seminar Room

PROF. R. H. S. CARPENTER

Oculomotor Control (Six lectures: 5, 8, 12, 15 and 19 Oct.)

DR S. A. EDGLEY

Cerebellum (Six lectures: 19, 22, 29 Oct. 23 and 26 Nov.)

PROF. R. N. LEMON

Corticospinal system (Four lectures: 26 Oct. and 2 Nov.)

DR H. MATHEWS

Long latency reflexes (Four lectures: 5, 12 and 16 Nov.)

PROF. J. C. ROTHWELL

Basal ganglia (Four lectures: 9 and 30 Nov.)

**Module N4: Sensory Transduction**

M. 12, W. 10, Th. 10

Organiser: Dr H. R. Matthews (hrm1@cam.ac.uk)

Venue: Anatomy Lecture Theatre/Hodgkin Huxley Seminar Room

DR H. R. MATTHEWS

Vertebrate phototransduction (Five lectures: 7–18 Oct.)

PROF. R. HARDIE

Invertebrate phototransduction (Four lectures: 20–27 Oct.)

DR B. HEDWIG

Insect hearing (Two lectures: 28 Oct.–1 Nov.)

DR H. R. MATTHEWS

Muscle spindles (Two lectures: 3–4 Nov.)

PROF. P. MCNAUGHTON

Pain (Four lectures: 8–15 Nov.)

DR H. R. MATTHEWS

Olfactory transduction (Three lectures: 17–22 Nov.)

PROF. A. C. CRAWFORD

Peripheral auditory system (Four lectures: 24 Nov.–1 Dec.)

**Module N7: Local Circuits and Neural Networks**

M. 11, W. 10, F. 9

Organiser: Dr D. J. Parker (djp27@cam.ac.uk)

Venue: Bryan Matthews Room

DR D. J. PARKER

Principles of network function/spinal cord networks (Four lectures: 19–26 Jan.)

DR S. JONES

Local circuits in midbrain dopaminergic nuclei (Four lectures: 28 Jan.–7 Feb.)

DR D. BURDAKOV

Hypothalamic networks (Three lectures: 9–14 Feb.)

PROF. S. LAUGHLIN

The design of neural circuits (Four lectures: 16–23 Feb.)

DR B. HEDWIG

Local circuit mechanisms in invertebrate model systems (Three lectures: 28 Feb.–4 Mar.)

PROF. O. PAULSEN

Hippocampal networks (Three lectures: 7–11 Mar.)

DR H. P. C. ROBINSON

Cortical networks (Three lectures: 14–18 Mar.)

**Module N8: Learning, Memory and Cognition**

M. 10, Tu. 10, F. 10

Organiser: Dr T. Bussey (tjb1000@cam.ac.uk)

Venue: Lecture Theatre 1

DR T. BUSSEY AND DR L. SAKSIDA

Memory, Amnesia, Animal and Computational Models (Six lectures: 18–31 Jan.)

DR A. MILTON

Mechanisms of Cellular-level Consolidation and Reconsolidation (Three lectures: 1–7 Feb.)

DR T. BUSSEY

Emotional Memory (Two lectures: 8–11 Feb.)

DR T. BUSSEY, DR L. SAKSIDA AND DR B. J.

MCCABE

Learning and Memory in Simple Systems (Four lectures: 14–21 Feb.)

DR A. MILTON, DR J. SIMONS AND DR L. CLARK  
Higher Cognitive Functions (Nine lectures: 22 Feb.–14 Mar.)



## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

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

Course Organiser: Dr A Kelly (email: apk23@cam.ac.uk )  
 Course Website: www.path.cam.ac.uk/

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

## Introductory lecture

All options. W 3 (One lecture, 6 Oct.) *It is important that all students attend the introductory lecture*

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

Option Organiser: Prof. N. Affara (email: na@mole.bio.cam.ac.uk) Tel. 33700

PROF. A. WYLLIE, DR H. LAMAN, DR P. D'AVINO, DR P. JONES, PROF. C. WATSON, DR W. KHALED, DR J. CAMPBELL, DR J. STINGL AND PROF. R. PEDERSEN

## Part I: Cell and Tissue Biology.

DR I. FURNER, DR C. SARGENT, DR S. BLOTT, PROF. D. GRIFFIN, PROF. N. AFFARA, DR A. BANNISTER AND DR J. CONSTANCIA

## Part II: Genome Organisation and its Regulation.

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

Option Organiser: Prof. J. Kaufman (email: jfk31@cam.ac.uk) Tel: 32092/66423

PROF. J. TROWSDALE, DR A. KELLY, DR P. LEHNER, DR C. BRYANT, PROF. A. C. COOKE, DR M. CLARK, PROF. K. G. C. SMITH, PROF. D. T. FEARON, DR N. HOLMES, PROF. J. KAUFMAN, PROF. G. GRIFFITHS, DR B. A. BLACKLAWS, DR J. BONAME AND PROF. C. RUDD

**Option C: Microbiology and Parasitology** M. W. F. 9

Option Organiser: Dr I. B. Kingston (email: ibk1000@cam.ac.uk) Tel: 33330

PROF. V. KORONAKIS, PROF. C. HUGHES, DR G. FRASER, DR L. EVANS, DR D. HUMPHREYS, DR R. HAYWARD AND DR I. B. KINGSTONE

## Bacterial Disease and Pathogenicity.

DR N. BROWN AND PROF. A. M. LEVER

## Fungal Infections.

PROF. C. HUGHES

## Experimental Strategy/data presentations

DR G. FRASER AND PROF. C. HUGHES

**Journal Research Seminars****Option D: Virology** M. W. F. 5

Option Organiser: Dr H. Browne (email: hb100@mole.bio.cam.ac.uk) Tel: 36919

DR T. D. K. BROWN, DR S. WYNNE, DR P. DIGARD, DR J. GRAY, DR I. BRIERLEY, DR S. EFSTATHIOU, PROF. J. SINCLAIR, DR C. CRUMP, DR B. A. BLACKLAWS AND DR J. BONAME

**Option E: Dynamics of Infectious Diseases** Tu. Th. 9, Th. 10

*Venue: Lecture Theatre 2, Department of Veterinary Medicine, Madingley Road*

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

DR I. BROWN, DR T. FOOKS, DR A. GRANT, DR D. KING, DR J. MCCAULEY, PROF. D. MASKELL, DR T. J. MCKINLEY, DR O. RESTIF, DR C. RUSSELL, DR L. TILEY AND DR J. WOOD

DR P. EDWARDS, PROF. M.-Q. DU, PROF. V. P. COLLINS, DR A. BANNISTER, DR H. LAMAN, DR R. HESKETH, DR S. TURNER, PROF. C. WATSON AND DR P. D'AVINO,

## Part III: The Molecular Biology of Cancer.

PROF. D. RUBINSZTEIN, DR A. RICHARDS, DR A. MURRELL AND DR J. CONSTANCIA

## Part IV: Mendelian and non-mendelian inheritance in disease.

DR N. HOLMES, DR P. MASTROENI, DR F. COLLUCI, DR D. B. PALMER, PROF. A. GREEN, DR H. SCHNEIDER, PROF. A. C. COOKE, DR M. CLARK, PROF. H. GASTON AND PROF. J. KAUFMAN

DR I. B. KINGSTON, DR J. AJOKA, DR D. BLAKE, DR C. FITZSIMMONS, PROF. D. DUNNE AND PROF. M. FIELD

## Major Protozoal Diseases.

DR I. B. KINGSTON, DR E. MICHAEL AND PROF. M. FIELD

## Major Helminth Diseases.

DR I. B. KINGSTON, PROF. M. FIELD AND DR J. W. AJOKA

**Journal Research Seminars**

DR G. TURNER, DR P. BORROW, DR S. EFSTATHIOU, PROF. A. C. MINSON, DR P. DIGARD, DR T. D. K. BROWN, DR J. C. STERLING, DR H. BROWNE, PROF. G. K. DARBY, DR P. GOON, PROF. R. FOUCHIER, DR C. CRUMP, DR A. CONLAN, DR I. BRIERLEY AND PROF. D. SMITH

DR S. FROST, DR R. CLIFTON-HADLEY, DR M. J. CORKE, DR A. DAVISON, DR T. DREW, DR H. FIELD, DR A. GRANT, DR S. GUBBINS, PROF. J. HEENEY, DR G. HEWINSON, PROF. R. FOUCHIER, PROF. T. HUMPHREY, DR R. KAO, DR P. MELLOR, DR P. MASTROENI, DR O. PYBUS, DR O. RESTIF, PROF. J. SLATER, DR K. SMITH AND DR L. TILEY

DR M. HURLES, DR P. ELLIS, DR C. SARGENT AND PROF. J. KAUFMAN

## Part V: Genome evolution and disease.

DR N. HOLMES AND PROF. J. KAUFMAN

DR E. MICHAEL  
Epidemiology.  
DR H. DE KONING  
Parasite Chemotherapy.

**Project Seminars** Dates to be confirmed

DR T. D. K. BROWN, DR P. DIGARD, AND DR S. EFSTATHIOU

DR R. BUJDOSO, DR D. GREEN, DR A. THACKERY, DR L. TILEY AND DR J. WOOD

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## PHARMACOLOGY

Course Organiser: Dr Lora K. Heisler: email [lk30@medschl.cam.ac.uk](mailto:lk30@medschl.cam.ac.uk)  
 Course Website: [www.phar.cam.ac.uk/teaching/tea\\_part2.html](http://www.phar.cam.ac.uk/teaching/tea_part2.html)

The introductory session for students will be at 9 a.m., Wednesday, 6 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*, unless otherwise indicated.

**Systems Pharmacology**

DR L. J. MACVINISH

Pharmacology of Transporting Epithelia. (Four lectures, 7–14 Oct.) M. Tu. Th. 9

TECH TALK – Molecular Biology (7 Oct. Th. 2)

DR L. J. MACVINISH

Study Skills (8 Oct. F. 10)

DR L. K. HEISLER

Neurocircuitry Regulating Satiety. (Four lectures, 13, 15, 19, 21 Oct.) W. F. 10. Tu. Th. 9

TECH TALK – Protein Expression and Detection (14 Oct. Th. 2)

DR M. A. BARRAND

Drug Delivery at the Blood Brain Barrier. (Three lectures, 18–22 Oct.) M. 9, W. F. 10

TECH TALK – Protein Purification and Biophysics (21 Oct. Th. 2)

DR T-P. FAN

Pharmacology of Inflammation and Angiogenesis (Six lectures, 26 Oct.–11 Nov.) Tu. Th. 9

DR H. VENTER

Drug Targets in Bacterial Iron Acquisition Systems (Two lectures, 26, 28 Oct.) Tu. Th. 10

TECH TALK – Protein Reconstitution and Structural Analysis (28 Oct. Th. 2)

DR Z. SARNYAI

Pharmacology of Psychiatric Disorders (Six lectures, 2, 3, 4, 5, 9, 11 Nov.) Tu. W. Th. F. 10

TECH TALK – Imaging (Part I) (4 Nov. Th. 4)

TECH TALK – Imaging (Part II) (11 Nov. Th. 2)

PROF. V. K. K. CHATTERJEE

Drugs, Receptors and DNA. (Two lectures, 15, 16 Nov.) M. T. 9

TECH TALK – siRNA and Transgenics (18 Nov. Th. 2)

DR C. LANGMEAD

Drug Discovery (Two lectures, 23, 25 Nov.) T. 10. Th. 9

TECH TALK – Behavioural Techniques (25 Nov. Th. 2)

**Molecular and Cellular Pharmacology**

DR R. D. MURRELL-LAGNADO

Voltage-gated Ion channels. (Five lectures, 8–18 Oct.) M. 10, W. F. 9

DR B. J. BILLUPS

Glutamatergic Transmission. (Five lectures, 20–29 Oct.) M. W. F. 9

DR H. L. RODERICK

Calcium Signalling. (Five lectures, 1–10 Nov.) M. 10, W. F. 9

DR S. B. HLADKY

Cys-Loop Family of Ligand-gated Ion Channels. (Three lectures, 12–17 Nov.) M. 10, W. F. 9

PROF. J. M. EDWARDSON

Synaptic Mechanisms (Six lectures, 19–29 Nov.–1 Dec.) M. 10, 24 Nov. W. 10, 1 Dec. W. 9, F. 9

DR F. GRIBBLE

Pancreatic Islet and Gut Hormones. (Three Lectures, 20–27 Jan.) Th. M. 9

DR C. R. HILEY

Cardiovascular Pharmacology (Six lectures, 31 Jan.–11 Feb.) M. W. F. 9

DR D. I. BURDAKOV

Sleep and Appetite. (Four lectures, 1–10 Feb.) Tu. Th. 9. T. Th. 10

A. J. MORTON

Neurodegenerative Diseases. (Six lectures, 15 Feb.–3 Mar.) Tu. Th. 9

PROF. D. M. F. COOPER

G proteins and G-protein Coupled Receptors, Signalling by Cyclic AMP. (Seven lectures, 19 Jan.–4 Feb.) W. F. W. F. 9, M. W. F. 10

PROF. P. A. MCNAUGHTON

Nociception. (Four lectures, 8–14 Feb.) M. Tu. Th. 9, F. 10

DR H. W. VAN VEEN

Molecular Aspects of Multidrug Transport. (Five lectures, 16–25 Feb.) W. F. M. W. F. 9

PROF. R. F. IRVINE

Inositide Signalling. (Five lectures, 28 Feb. 2–9 Mar.) M. W. F. 9

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

EASTER 2011

## PHYSIOLOGY, DEVELOPMENT AND NEUROSCIENCE

Course Organiser: Dr R. J. Adams (email: rja46@cam.ac.uk)  
 Course Website: www.pdn.cam.ac.uk/teaching/

The course consists of a series of workshops, lectures and seminars around a framework of modules.  
 Detailed timetables will be posted in the Department.

**Module N1: Developmental Neurobiology**

M. 9, Th. 9, F. 10

Module Organisers: Prof. R. J. Keynes (rjk10@cam.ac.uk)

Venue: Hodgkin Huxley Seminar Room

PROF. M. BATE

Neurogenesis and patterning (Six lectures)

DR G. M. W. COOK

Axon guidance (Four lectures)

DR M. LANDGRAF

Synapse formation (Three lectures)

DR A. TOLKOVSKY

Neurotrophic factors (Two lectures)

DR M. LANDGRAF

Journal Club (One journal club)

DR R. LIVESEY

Development of cerebral cortex (Three lectures)

DR A. TOLKOVSKY

Journal Club (One journal club)

DR S. EGLEN

Topographic map formation and tuning (Three lectures)

PROF. E. B. KEVERNE

Genetics and evolution of brain development (Three lectures)

**Module N2: Molecular Neuroscience**

M. 10, W. 9, F. 9

Module Organiser: Dr L. Heisler (lkh30@cam.ac.uk)

Venue: Pharmacology Lecture Theatre

DR R. D. MURRELL-LAGNADO

Voltage-gated ion channels (Five lectures)

DR S. CHAWLA

Regulation of gene transcription (Two lectures)

DR B. BILLUPS

Glutamatergic transmission (Five lectures)

DR S. B. HLADKY

Cys-loop family of ligand-gated ion channels (Three lectures)

DR H. L. RODERICK

Ca<sup>2+</sup> signalling and the heart (Five lectures)

PROF. J. M. EDWARDSON

Synaptic mechanisms (Six lectures)

**Module N5: Neural Degeneration and Regeneration**

M. 9, W. 9, Th. 9

Module Organiser: Prof. R. Keynes (rjk10@cam.ac.uk)

Venue: TBA

DR J. MORTON

Neurodegenerative diseases (Four lectures)

DR R. TASKER

Damage to neurons: Ischaemia, excitotoxicity, and stroke (Four lectures)

DR P. DE VRIES

Molecular genetics of neuropsychiatric disorders (Two lectures)

PROF. J. FAWCETT

Spinal cord injury and regeneration of axons (Four lectures)

DR W. PHILLIPS

Parkinson's disease and neural grafting (Four lectures)

DR J. BETSCHINGER

Neural stem cells and adult neurogenesis (Three lectures)

PROF. R. FRANKLIN

Glial degeneration and repair (Three lectures)

**Module N6: Central Mechanisms of Sensation and Behaviour**

Tu. 9, Tu. 11, Th. 10

Module Organiser: Prof. R. H. S. Carpenter (rhsc1@cam.ac.uk)

Venue: Hodgkin Huxley Seminar Room

PROF. R. D. PATTERSON

Central processing of auditory information (Four lectures)

DR D. J. TOLHURST

Higher processing of visual information (Three lectures)

DR M. LENGVEL

The computational neuroscience of learning and memory (Four lectures)

PROF. S. LAUGHLIN

Neural mechanisms of sensory and motor integration (Four lectures)

PROF. W. SCHULTZ

Neurobiology of reward (Four lectures)

PROF. A. C. ROBERTS

Neural basis of emotion, and its regulation (Four lectures)

PROF. W. SCHULTZ

NeuroDebate (One workshop)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

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**Module N3: Control of Action**

Tu. 9, Tu. 11, F. 11

Module Organiser: Dr S. A. Edgley (sae1000@cam.ac.uk)

Venue: Hodgkin Huxley Seminar Room

PROF. R. H. S. CARPENTER

Oculomotor Control (Six lectures)

DR S. A. EDGLEY

Cerebellum (Four lectures)

DR H. R. MATTHEWS

Long latency reflexes (Four lectures)

PROF. R. N. LEMON

Corticospinal system (Four lectures)

PROF. R. H. S. CARPENTER

Introduction to oculomotor control (One lecture)

PROF. J. C. ROTHWELL

Basal ganglia (Four lectures)

**Module N4: Sensory Transduction**

M. 12, W. 10, Th. 10

Module Organiser: Dr H. R. Matthews (hrm1@cam.ac.uk)

Venue: Anatomy Lecture Theatre/Hodgkin Huxley Seminar Room

DR H. R. MATTHEWS

Vertebrate phototransduction (Five lectures)

PROF. R. HARDIE

Invertebrate phototransduction (Four lectures)

DR H. R. MATTHEWS

Vertebrate phototransduction workshop (One workshop)

DR B. HEDWIG

Insect hearing (Two lectures)

PROF. R. HARDIE

Invertebrate phototransduction workshop (One workshop)

DR H. R. MATTHEWS

Muscle spindles (Two lectures)

DR B. HEDWIG

Insect hearing workshop (One workshop)

PROF. P. MCNAUGHTON

Pain (Four lectures)

DR H. R. MATTHEWS

Muscle spindles workshop (One workshop)

DR H. R. MATTHEWS

Olfactory transduction (Three lectures)

PROF. P. MCNAUGHTON

Pain workshop (One workshop)

PROF. A. C. CRAWFORD

Peripheral auditory system (Four lectures)

DR H. R. MATTHEWS

Olfactory transduction workshop (One workshop)

PROF. A. C. CRAWFORD

Peripheral auditory system workshop (One workshop)

**Module N7: Local Circuits and Neural Networks**

M. 11, W. 10, F. 9

Module Organiser: Dr D. J. Parker (djp27@cam.ac.uk)

Venue: Bryan Matthews Room

DR D. J. PARKER

Principles of network function/spinal cord networks (Four lectures)

DR S. JONES

Local circuits in midbrain dopaminergic nuclei (Four lectures)

DR D. BURDAKOV

Hypothalamic networks (Three lectures)

PROF. S. LAUGHLIN

Design of neural circuits (Four lectures)

DR B. HEDWIG

Local circuit mechanisms in invertebrate model (Three lectures)

PROF. O. PAULSEN

Hippocampal networks (Three lectures)

DR H. P. C. ROBINSON

Cortical networks (Three lectures)

**Module N8: Learning, Memory and Cognition**

M. 10, Tu. 10, F. 10

Module Organiser: Dr T. Bussey (tjb1000@cam.ac.uk)

Venue: Lecture Theatre 1

DR T. BUSSEY AND DR L. SAKSIDA

Memory, Amnesia, Animal and Computational Models (Six lectures)

DR A. MILTON

Mechanisms of Cellular-level Consolidation and Reconsolidation (Three lectures)

DR T. BUSSEY

Emotional Memory (Two lectures)

DR T. BUSSEY, DR L. SAKSIDA AND DR B. J.

MCCABE

Learning and Memory in Simple Systems (Four lectures)

DR A. MILTON, DR J. SIMONS AND DR L. CLARK

Higher Cognitive Functions (Nine lectures)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

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**Module P1: Cellular Physiology**

M. 11, Tu. 10, W. 9

Module Organiser: Dr C. J. Schwiening (cjs30@cam.ac.uk)

Venue: Hodgkin Huxley Seminar Room

DR V. L. LEW

Cellular calcium (Two lectures)

MR A. HARPER AND DR S. O. SAGE

Calcium signalling (Five lectures)

PROF. C. L-H. HUANG

Voltage gated calcium channels (One lecture)

DR M. J. MASON

Patch clamping (One lecture)

TBA

Molecular techniques (One lecture)

PROF. R. C. THOMAS

Cellular pH (Three lectures)

DR C. J. SCHWIENING

pH (Two lectures)

PROF. C.L-H. HUANG

Excitation-contraction coupling (Two lectures)

DR M. J. MASON

Fluorescence measurements of Ca<sup>2+</sup> (Two lectures)

DR D. J. PARKER

Synaptic and metaplasticity (Three lectures)

DR J. FRASER

Cellular modelling (Two lectures)

**Module P6: Development: Cell Differentiation and Organogenesis**

M. 2, Tu. 2, W. 2, F. 2

Module Organisers: Dr H. Skaer (hs17@cam.ac.uk) and Dr N. Brown (nb117@mole.bio.cam.ac.uk)

(Interdepartmental Course with Zoology)

Venue: Zoology Part II Lecture Theatre/Hodgkin Huxley Seminar Room

DR N. BROWN AND DR H. SKAER

Introduction: setting out the questions (One lecture)

PROF. A. SURANI

Stem cells, germ cells and sex determination (Four lectures)

DR N. BROWN AND DR H. SKAER

Introduction to P6 Journal Clubs (One lecture)

PROF. A. SURANI

Journal Club: Stem cells, germ cells and sex determination (One journal club)

DR E. PEDDINI AND DR J. PINES

Growth control and cancer (Four lectures)

DR C. V. H. BAKER

Neural crest, cranial placodes and cell migration (Four lectures)

DR E. PEDDINI AND DR J. PINES

Journal Club: Growth control and cancer (One journal club)

DR N. BROWN, DR K. ROEPER AND DR H. SKAER

Epithelial polarity and tubulogenesis (Four lectures)

DR C. V. H. BAKER

Journal Club: Neural crest, cranial placodes and cell migration (One journal club)

DR N. BROWN, DR K. ROEPER AND DR H. SKAER

Journal Club: Epithelial polarity and tubulogenesis (One journal club)

DR E. RAWLINS AND DR B. DENHOLM

Development of internal organs (Four lectures)

DR E. RAWLINS AND DR B. DENHOLM

Journal Club: Development of internal organs (One journal club)

DR M. AKAM AND DR M. LOGAN

Limb development (Three lectures)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

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**Module P2: Pluripotency and Differentiation**

M. 2, Tu. 11, F. 9

Module Organiser: Prof. G. Burton (gjb2@cam.ac.uk)  
and Prof. M. Zernicka-Goetz (mzg@mole.bio.cam.ac.uk)

Venue: Bryan Matthews Room

PROF. M. ZERNICKA-GOETZ, DR S. MORRIS

Cell lineage divergence in mouse (One lecture)

PROF. M. ZERNICKA-GOETZ, DR S. MORRIS

Epiblast/primitive endoderm separation (One lecture)

PROF. M. ZERNICKA-GOETZ, DR S. MORRIS

Epiblast to egg-cylinder (One lecture)

PROF. M. ZERNICKA-GOETZ, DR S. MORRIS

Journal Club (One journal club)

DR J. NICHOLLS

Embryonic stem cells (Two lectures)

PROF. R. PEDERSEN

Comparison of mouse and human embryonic stem cells  
(Two lectures)

PROF. R. PEDERSEN

Journal club (One journal club)

PROF. W. REIK, DR M. HEMBERGER

Epigenetics and cell lineage segregation (Two lectures)

DR E. WATSON

Folate and trophoblast differentiation (One lecture)

DR A. SHARKEY

Implantation (Two lectures)

PROF. G. BURTON, PROF. A. MOFFETT

Interactive session; Trophoblast mediated  
complications of pregnancy (One lecture)

PROF. A. MOFFETT

Trophoblast and the maternal immune system (Two  
lectures)

DR A. SHARKEY

Journal club (One journal club)

DR F. COLUCCI

Origin of uterine natural Killer cells (One lecture)

PROF. G. BURTON

Oxygen and spiral artery conversion (Two lectures)

**Module P7: Genomics and the Future of  
Medicine**

M. 10, Th. 2, F. 10

Module Organiser: Prof. A. Ferguson-Smith  
(afsmith@mole.bio.cam.ac.uk)

Venue: Bryan Matthews Room

PROF. A. FERGUSON-SMITH

Introduction to genomic science (One lecture)

PROF. A. FERGUSON-SMITH

Background to genomic science (One lecture)

PROF. A. FERGUSON-SMITH

The evolution and application of genomic  
technology (One lecture)

L. RAYMOND

Medical genetics (One lecture)

PROF. A. FERGUSON-SMITH

Current genomics technology. Deep  
sequencing/arrays/CGH (One lecture)

PROF. A. FERGUSON-SMITH

Principles of genome association studies –  
methodology (One lecture)

PROF. A. FERGUSON-SMITH

Genome association studies – application to  
disease (One lecture)

DR L. VALLIER

Regeneration and stem cells (Two lectures)

PROF. S. BRAY AND PROF. M. H. JOHNSON

Risk and uncertainty (One lecture)

DR J. BRENTON

Genomics and cancer (Two lectures)

DR F. WARDLE

Journal Club I – Functional and medical  
genomics (One lecture)

DR J. CHAN

Gene and cell replacement therapy (Two  
lectures)

A. HENDRICK

Drug discovery and therapeutics in the  
biotech industry (Two lectures)

PROF. A. FERGUSON-SMITH

Journal Club II – Stem cells and regenerative  
medicine (One lecture)

DR F. WARDLE

Future genome science and society (Two  
lectures)

PROF. A. FERGUSON-SMITH

Review session I (One lecture)

PROF. A. FERGUSON-SMITH

Review session II – preparing for exams (One  
lecture)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

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**Module P3: Fetal and Placental Physiology**

M. 12, Th. 10, F. 12

Module Organiser: Dr D. A. Giussani (dag26@cam.ac.uk)

Venue: Hodgkin Huxley Seminar Room

PROF. G. BURTON

Placental development and function (Three lectures)

DR S. K. L. ELLINGTON

Early development: effects of oxygen and glucose (Three lectures)

PROF. A. L. FOWDEN

Growth and metabolism of the fetus (Four lectures)

DR M. CONSTANCIA

Role of epigenetics and imprinting in fetoplacental development (Two lectures)

DR J. K. JELLYMAN

Development of fetal organs: heart/lungs/kidney (Three lectures)

DR D. A. GIUSSANI

Cardiovascular function (Three lectures)

DR E. J. CAMM

Development of fetal organs: brain (One lecture)

DR A. J. FORHEAD

Development of fetal organs: thyroid (One lecture)

PROF. A. L. FOWDEN

Development of fetal organs: adrenal (One lecture)

DR A. J. FORHEAD

Fetal maturation in preparation for birth (One lecture)

DR D. A. GIUSSANI

Mechanisms of parturition (One lecture)

DR D. A. GIUSSANI

Fetal and postnatal breathing (One lecture)

DR S. E. OZANNE AND DR A. J. FORHEAD

Intrauterine programming of adult pathophysiology (Two lectures)

**Module P4: Development: Patterning the Embryo**

M. 11, Tu. 12, W. 2, F. 11

Module Organiser: Dr R. J. Adams (rja46@cam.ac.uk)  
(Interdepartmental Course with Zoology)Venue: Anatomy Lecture Theatre/Austin Building  
Lecture Theatre

DR R. WHITE AND DR H. SKAER

Introduction: setting up the problems (One lecture)

DR H. SKAER AND PROF. A. BRAND

How cells become different from one another (Four lectures)

DR R. WHITE AND DR H. SKAER

Introduction to journal club (One journal club)

DR H. SKAER AND PROF. A. BRAND

Journal club (One journal club)

DR I. PALACIOS AND DR R. KEYNES

Model organisms and experimental approaches (One lecture)

DR H. SKAER AND PROF. A. BRAND

Journal club (One journal club)

DR I. PALACIOS, DR H. BAYLIS AND PROF. M. ZERNICKA-GOETZ

Egg polarity and body axes (Six lectures)

DR I. PALACIOS, DR H. BAYLIS AND PROF. M. ZERNICKA-GOETZ

Journal club (One journal club)

DR B. SANSON AND DR S. MORRIS

Gastrulation (Six lectures)

DR B. SANSON AND DR S. MORRIS

Journal club (One journal club)

PROF. R. KEYNES, DR M. AKAM AND DR B. SANSON

Dividing up the embryo (segmentation) and segment identity (Six lectures)

PROF. R. KEYNES, DR M. AKAM AND DR B. SANSON

Journal club (One journal club)

**Module P8: Systems and Clinical Physiology**

M. 11, W. 11, F. 11

Module Organiser: Dr S. O. Sage (sos10@cam.ac.uk)

Venue: Hodgkin Huxley Seminar Room

DR S. O. SAGE

Introduction and Renal autoregulation (Two lectures)

DR R. J. BARNES

Cardiovascular system in exercise (Four lectures)

PROF. J. COMPSTON

Bone physiology (Two lectures)

DR J. BRADLEY

Chronic renal failure (Two lectures)

DR I. SABIR

Cardiac arrhythmia (Two lectures)

DR N. W. MORRELL

Pulmonary circulation (Two lectures)

DR A. MURRAY

Genetics and energetics of heart failure (Two lectures)

PROF. D. B. DUNGER

Diabetes mellitus (Two lectures)

DR G. S. H. YEO

Genetics of obesity (Three lectures)

DR J. ROCHFORD

Adipogenesis and lipodystrophy (Two lectures)

DR J. FIRTH

Acute renal failure (Two lectures)

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

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**Module P9: Cell Assembly and Interactions**

M. 4, W. 4, Th. 2, F. 4

Module Organisers: Dr H. A. Baylis (hab28@cam.ac.uk)  
and Dr R. White (rw108@cam.ac.uk)

(Interdepartmental Course with Zoology)

Venue: Zoology Part II Lecture Theatre/Basement  
Seminar Room

DR H. BAYLIS AND DR R. WHITE

Introduction (One lecture)

DR K. ROEPER AND DR B. SANSON

Cytoskeleton and movement (Three lectures)

DR H. BAYLIS AND DR R. WHITE

Introduction to journal clubs (One journal club) *Joint  
with P4*

DR K. ROEPER AND DR B. SANSON

Cytoskeleton and movement (Three lectures)

DR M. ROBINSON AND PROF. P. LUZIO

Intracellular membrane traffic (Six lectures)

DR K. ROEPER AND DR B. SANSON

Cytoskeleton and movement (One journal club)

DR M. ROBINSON AND PROF. P. LUZIO

Intracellular membrane traffic (One journal club)

DR H. BAYLIS

Cell signaling. G-proteins and second messengers (Four  
lectures)

DR J-P. VINCENT

Vesicular trafficking and intercellular signalling (Two  
lectures)

DR H. BAYLIS

Cell signaling. G-proteins and second messengers (One  
journal club)

DR R. WHITE

Nuclear architecture (Two lectures)

DR H. SKAER

Extracellular matrix, adhesion and junctions (Five  
lectures)

DR R. WHITE

Nuclear architecture (One journal club)

DR H. BAYLIS AND DR R. WHITE

Integrative finale (One lecture)

**Neuroscience workshops: Experimental Approaches in Brain Research**

W. 3, Th. 3

Module Organiser: Prof. A. C. Roberts (acr4@cam.ac.  
uk)

Venue: Bryan Matthews Room

DR D. J. PARKER

Understanding neuronal networks: current progress  
and future promises

PROF. A. BRAND

Cell biological approaches to the study of neurons

DR G. M. W. COOK

Experimental approaches to axon guidance

PROF. A. C. ROBERTS

Behavioural neuroscience: only as good as its  
behavioural test**Neuroscience workshops: Experimental Approaches in Brain Research**

Tu. 3, W. 3

Module Organiser: Prof. A. C. Roberts (acr4@  
cam.ac.uk)

Venue: Bryan Matthews Room

DR J. DALLEY

Discovering endophenotypes: the connection  
between genes and neuropsychiatric  
syndromes.

PROF. W. SCHULTZ

Designing behavioural neurophysiological  
studies

DR J. PEELLE

Functional Magnetic Resonance Imaging  
(fMRI): uses and abuses

PROF. O. PAULSEN

Shedding light on brain function:  
Optogenetics and beyond



## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

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

Course Organiser: Dr Julian Hibberd (email: [jmh65@cam.ac.uk](mailto:jmh65@cam.ac.uk))  
 Module Organisers appear below. E-mail: [firstname.surname@plantsci.cam.ac.uk](mailto:firstname.surname@plantsci.cam.ac.uk) unless otherwise specified  
 Course Website: [www.plantsci.cam.ac.uk/teaching/psii/](http://www.plantsci.cam.ac.uk/teaching/psii/)

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, M2, L1 and L2), or Ecological Plant Sciences (modules M3, Zoology M3; and L2, Zoology L2).

**Module M1: Plant Signalling Networks**

Module organiser: Dr Alex Webb  
 DR J. M. DAVIES, DR D. E. HANKE AND DR A. A. R. WEBB  
 M. W. F. 12 (Twenty-four lectures, 8 Oct.–1 Dec.)

**Module M2: Microbes and Organelle Evolution**

Module organiser: Dr Janneke Balk  
 DR J. BALK, PROF. H. GRIFFITHS, PROF. A. SMITH, DR K. JOHNSTONE AND DR A. N. OTHER  
 M. W. F. 10 (Twenty-four lectures, 8 Oct.–1 Dec.)

**Module M3: Dynamics, History and Phylogeny of Vegetation**

Module organiser: Prof. Howard Griffiths  
 PROF. H. GRIFFITHS, DR D. A. COOMES, DR J. HARRISON, DR B. J. GLOVER, DR E. V. J. TANNER AND PROF. O. RACKHAM  
 M. W. F. 9 (Twenty-four lectures, 8 Oct.–1 Dec.)

**Module L1: Development of Plants**

Module organiser: Dr David Hanke  
 DR J. HASELOFF, DR D. E. HANKE AND DR B. J. GLOVER  
 M. W. F. 9 (Twenty-four lectures, 21 Jan.–16 Mar.)

**Module L2: Plant in a Changing Environment**

Module organiser: Dr Edmund Tanner  
 DR E. V. J. TANNER, PROF. H. GRIFFITHS, DR D. PURVES AND DR P. CAREY  
 M. W. F. 10 (Twenty-four lectures, 21 Jan.–16 Mar.)

**Module L3: Frontiers in Plant Metabolism**

Module organiser: Prof. Alison Smith  
 DR J. M. HIBBERD, PROF. A. SMITH, PROF. J. NAPIER AND DR A. N. OTHER  
 M. W. F. 11 (Twenty-four lectures, 21 Jan.–16 Mar.)

**Module L4: The Genetic and Epigenetic Aspects of the Plant Nuclear Genome**

Module organiser: Prof. Sir David Baulcombe  
 PROF. SIR D. C. BAULCOMBE, DR I. HENDERSON, DR I. FURNER AND DR A. N. OTHER  
 M. W. F. 12 (Twenty-four lectures, 21 Jan.–16 Mar.)

The modules below may also be offered in Part II Plant Sciences (Part II Zoology modules). All lectures to take place in the Zoology Main Lecture Theatre.

**Aquatic Ecology***Interdepartmental Module*

Module organiser: Dr D. Aldridge  
 DR M. BROOKE, DR D. ALDRIDGE, DR R. BARNES, DR D. BARNES AND PROF. A. CLARKE  
 M. W. F. 11 (Twenty-four lectures, beginning 8 Oct.)

**Population Biology***Interdepartmental Module*

Module organiser: Dr A. Manica  
 DR A. MANICA, DR C. RUSSELL, PROF. D. SMITH, DR D. COOMES, PROF. W. AMOS AND DR R. JOHNSTONE  
 M. W. F. 2 (Twenty-four lectures, beginning 8 Oct.)

**Conservation Biology***Interdepartmental Module*

Module organiser: Prof. A. Balmford  
 DR M. BROOKE, DR A. ROGERS, DR I. HODGE, PROF. W. AMOS, PROF. W. SUTHERLAND, PROF. R. GREEN, DR D. COOMES, DR S. SMITH AND PROF. A. BALMFORD  
 M. W. F. 4 (Twenty-four lectures, beginning 21 Jan.)

**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. A. FOSTER  
 Tu. Th. Sa. 10 (Twenty-four lectures, beginning 20 Jan.)

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

**Statistics for Part II Biologists**

DR B. J. MCCABE  
 (4 Oct.) M. 9 and 2, M. Tu. W. Th. F. 2 (Ten lectures, 4–14 Oct.) *Main Lecture Theatre, Department of Zoology*  
 Please note early start of course.

*Practical work*

(Ten classes) M. W. F. 10–12 or 3–5 (4, 6, 8 Oct.); M. W. F. 3–5 (11, 13, 15, 17 Oct.) *The Titan Teaching Rooms, New Museums Site*  
 Please note early start of course

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

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## PSYCHOLOGY

Course Organiser: Dr L. Clark (email: lc260@cam.ac.uk)

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

PROF. T. W. ROBBINS

General Introduction. Th. 5 (One lecture, 7 Oct.)

DR M. R. F. AITKEN

Statistics. Th. F. 2 (Six lectures, 14–29 Oct.)

Practical Classes. M. 2–4 (Three classes, 18 Oct.–1 Nov.),  
*Titan Teaching Rooms*

Analysis of Variance. Th. F. 2 (Four lectures, 18–26 Nov.)

Practical Classes. M. 2–4 (Two classes, 22, 29 Nov.), *Titan Teaching Rooms***Module A1: Sensory Psychology**

PROF. J. D. MOLLON

Vision W. 9 (Eight lectures, 13 Oct.–1 Dec.)

PROF. B. C. J. MOORE

Hearing Th., 9, F. 10 (Ten lectures, 28 Oct.–3 Dec.) M.  
9 (One lecture, 29 Nov.) Tu. 10 (One lecture, 30  
Nov.)**Module A2: Comparative Psychology of Learning and Cognition**

PROF. N. S. CLAYTON

Comparative Psychology M. 12, W. 10 (Eleven lectures,  
11 Oct.–17 Nov.)

PROF. A. DICKINSON

Comparative Psychology M. Th. 12 (Nine lectures, 14  
Oct.–29 Nov.)

DR L. M. SAKSIDA

Connectionist Models W. 10, Th. 12 (Four lectures, 24  
Nov.–2 Dec.)**Module B1: Motivation and Psychopathology**

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

Brain Mechanisms of Motivation M. 10, W. 11  
(Fourteen lectures, 11 Oct.–10 Nov., 22 Nov.–1  
Dec.)**Module C1: Developmental Psychology**

DR J. RUSSELL

Cognitive Development Th. 10, F. 12 (Sixteen lectures,  
14 Oct.–3 Dec.)**Module C2: Psychology of Individual Differences**

PROF. S. BARON-COHEN

Atypical Psychology: Neurocognitive Perspectives Tu.  
12 (Eight lectures, 12 Oct.–30 Nov.)

DR L. CLARK

Personality M. 11 (Four lectures, 11 Oct.–1 Nov.)

PROF. J. D. MOLLON

Genetics of individual differences M. 11 (Four lectures,  
8–29 Nov.)

PROF. M. P. HAGGARD

Data Analysis and Interpretation. Th. 2 (Two  
classes, 20, 27 Jan.)

PROF. J. D. MOLLON

Writing a Research Project. Th. 2 (One class, 3  
Feb.)

PROF. M. P. HAGGARD

Qualitative Methods and their Application.  
Th. 2 (Four classes, 10, 24 Feb., 10, 17  
Mar.)

DR M. R. F. AITKEN

Experimental Design. Th. 2–4 (One class, 3  
Mar.)

PROF. T. W. ROBBINS ET AL

Conceptual and Historical Issues in  
Psychology F. 2 (Seven lectures, 21  
Jan.–11 Feb., 25 Feb.–11 Mar.)**Module A1: Sensory Psychology**

PROF. J. D. MOLLON

Vision F. 11 (Four lectures, 21 Jan.–11 Feb.)

**Module A3: Cognitive Psychology**

DR M. R. F. AITKEN

Learning and Cognition M. 11 (Four lectures,  
17 Jan.–7 Feb.)

DR A. WOOLGAR

Visual Cognition M. 12 (Eight lectures, 17  
Jan.–7 Feb., 21 Feb.–14 Mar.)

DR J. S. SIMONS

Human Memory W. 11 (Four lectures, 19  
Jan.–9 Feb.)

DR M. R. F. AITKEN AND DR L. CLARK

Judgment and Decisions M. W. 11 (Eight  
lectures, 21 Feb.–16 Mar.)**Module B1: Motivation and Psychopathology**

PROF. B. J. EVERITT

Abnormal Psychology: Biological  
Perspectives W. 10 (Six lectures, 26 Jan.–9  
Feb., 23 Feb.–9 Mar.)

DR P. FLETCHER

Cognitive Neuropsychiatry Th. 5 (Four  
lectures, 20 Jan.–10 Feb.)**Module B2: Memory and Higher Functions**

DR T. J. BUSSEY ET AL.

M. Tu. F. 10 (Twenty-four lectures, 18  
Jan.–14 Mar.) *Physiology Main Lecture  
Theatre***Module B3: Language**

DR J. I. ALCANTARA

Speech Perception W. Th. 9 (Six lectures, 19  
Jan.–10 Feb.)

PROF. L. K. TYLER ET AL

Perception to Meaning W. 9 (Six lectures, 2, 9  
Feb., 23 Feb.–16 Mar.)

DR M. MIOZZO

Language Production Tu. 12, Th. 9 (Twelve  
lectures, 18 Jan.–8 Feb., 22 Feb.–17 Mar.)**Modules B1, B2 and B3**

DR T. J. BUSSEY AND DR L. M. SAKSIDA

Additional Seminars Tu. 2–4 (Eight seminars,  
18 Jan.–9 Feb., 22 Feb.–15 Mar.)**Module C1: Developmental Psychology**

DR K. C. PLAISTED

Atypical Development F. 12 (Eight lectures,  
21 Jan.–11 Feb., 25 Feb.–18 Mar.)**Module C2: Psychology of Individual Differences**

PROF. N. J. MACKINTOSH

Intelligence Th. 12 (Eight lectures, 20 Jan.–10  
Feb., 24 Feb.–17 Mar.)

Attention is drawn to lectures organised by the Faculty of Politics, Psychology, Sociology and International Studies for the Paper Psy 1 (Social Psychology) given for Parts IIA and IIB of the Social and Political Sciences Tripos, Tu. 2 and W. 12 throughout the Michaelmas Term; and M. 2 and W. 12 throughout the Lent Term.

## NATURAL SCIENCES TRIPOS, PART II (continued)

MICHAELMAS 2010

LENT 2011

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## ZOOLOGY

Course Organiser: Prof. A. Balmford (email: apb12@cam.ac.uk)  
 Course Website: www.zoo.cam.ac.uk/degree/2zoology/index.html

All lectures take place in *the Department of Zoology, Part II Lecture Theatre*, unless otherwise stated

**M1 Topics in Vertebrate Evolution**

Module organiser: Dr R. Benson  
 DR R. SANSOM, DR Z. JOHANSON, DR M. FRIEDMAN, DR M. RUTA, PROF. S. E. EVANS, DR D. M. UNWIN, DR S. PIERCE, DR P. UPCHURCH AND DR R. BENSON  
 M. W. F. 10 (Twenty-four lectures, beginning 8 Oct.)

**M2 Aquatic Ecology**

Module organiser: Dr D. Aldridge  
 DR M. BROOKE, DR D. ALDRIDGE, DR R. BARNES, DR D. BARNES AND PROF. A. CLARKE  
 M. W. F. 11 (Twenty-four lectures, beginning 8 Oct.)

**M3 Population Biology**

Module organiser: Dr A. Manica  
 DR A. MANICA, DR C. RUSSELL, PROF. D. SMITH, DR D. COOMES, PROF. W. AMOS AND DR R. JOHNSTONE  
 M. W. F. 2 (Twenty-four lectures, beginning 8 Oct.)

**M4 Neural Mechanisms of Behaviour**

Module organiser: Dr B. Hedwig  
 DR S. ROGERS, PROF. S. LAUGHLIN, DR B. HEDWIG, DR B. MCCABE, PROF. E. B. KEVERNE, DR M. LANDGRAF AND DR F. EVERS  
 Tu. Th. Sa. 11 (Twenty-four lectures, beginning 7 Oct.)

**M5 Behaviour**

Module organiser: Dr R. Kilner  
 DR R. KILNER, DR N. MUNDY, DR C. JIGGINS, DR M. STEVENS, DR B. MCCABE AND DR M. BELL  
 Tu. Th. 9, Sa. 10 (Twenty-four lectures, beginning 7 Oct.)

**M6 Cell Assembly and Interactions**

(Interdepartmental course with PDN)

Module organisers: Dr H. Baylis and Dr N. Brown  
 DR H. BAYLIS, DR N. BROWN, DR R. ADAMS, PROF. M. ROBINSON, PROF. P. LUZIO, DR J-P. VINCENT AND PROF. H. SKAER  
 M. W. F. 4 (Twenty-four lectures plus six journal clubs beginning 8 Oct.)

**M7 From Genome to Proteome**

Module organiser: Dr T. Krude  
 DR T. KRUDE, DR M. CHRISTOPHOROU, DR A. BANNISTER, DR J. ULE, DR I. PALACIOS, DR N. STANDART, DR D. SCADDEN AND PROF. C. HOWE  
 M. W. F. 9 (Twenty-four lectures, beginning 8 Oct.)  
 First nine lectures in the *Department of Zoology*; the following fifteen lectures take place in the *Department of Biochemistry*

**M8 Development: Patterning an Embryo**

(Interdepartmental course with PDN)

Module organisers: Prof. H. Skaer and Dr R. Adams  
 DR R. WHITE, DR N. BROWN, PROF. P. SIMPSON, PROF. H. SKAER, DR R. ADAMS, DR B. SANSON, DR I. PALACIOS, DR H. BAYLIS, DR M. ZERNICKA-GOETZ, PROF. J. SMITH AND PROF. R. KEYNES  
 M. 11, Tu. 12, F. 11 (Twenty-four lectures plus six journal clubs beginning 8 Oct.)

**L1 Mammalian Evolution and Faunal History**

Module organiser: Dr R. Asher  
 DR T. KEMP, DR R. ASHER, DR V. WEISBECKER, DR E. WESTON, DR A. GOSWAMI AND DR R. C. PREECE  
 M. W. F. 10 (Twenty-four lectures, beginning 21 Jan.)

**L2 Conservation Biology**

Module organiser: Prof. A. Balmford  
 DR M. BROOKE, DR M. SPALDING, DR I. HODGE, PROF. W. AMOS, PROF. W. SUTHERLAND, PROF. R. GREEN, DR D. COOMES, DR S. MOON AND PROF. A. BALMFORD  
 M. W. F. 4 (Twenty-four lectures, beginning 21 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 M. BELL, PROF. T. H. CLUTTON-BROCK AND DR W. A. FOSTER  
 Tu. Th. Sa. 10 (Twenty-four lectures, beginning 20 Jan.)  
*All lectures to take place in the Main Lecture Theatre.*

**L5 Genetics, development and animal diversity**

Module organiser: Dr C. Jiggins  
 PROF. W. AMOS, DR G. WALKER, DR N. MUNDY, PROF. M. AKAM AND DR C. JIGGINS  
 M. W. F. 11 (Twenty-four lectures, beginning 21 Jan.)

**L6 Development: Cell Differentiation and Organogenesis**

(Interdepartmental course with PDN)

Module organisers: Prof. H. Skaer and Dr N. Brown  
 PROF. H. SKAER, DR N. BROWN, PROF. S. BRAY, PROF. A. SURANI, DR C. BAKER, DR K. ROEPER, DR P. SCHOFIELD, DR B. DENHOLM, DR M. AGATHOCLEOUS AND PROF. W. HARRIS  
 M. W. F. 2 (Twenty-four lectures plus six journal clubs beginning 21 Jan.)

**L7 Control of Cell Growth and Genome Stability**

Module organiser: Prof. S. P. Jackson  
 DR J. PINES, PROF. S. P. JACKSON, DR K. DRY, DR F. GERGELY, DR M. JACKMAN, DR P. VARGA-WEISZ, DR G. DE LA CUEVA MÉNDEZ, DR A. KAIDI, DR S. POLO AND DR T. LITTLEWOOD  
 M. W. F. 9 (Twenty-four lectures, beginning 21 Jan.)

**Human Biology**

Module organiser: Prof. T. H. Clutton-Brock  
 DR N. MUNDY, PROF. W. SUTHERLAND, PROF. R. FOLEY, DR R. JOHNSTONE, DR R. ASHER AND PROF. A. P. BALMFORD  
 M. W. F. 10 (Six lectures, beginning 29 Apr.)