BC98

Biomedical Sciences

UNIVERSITY OF OXFORD

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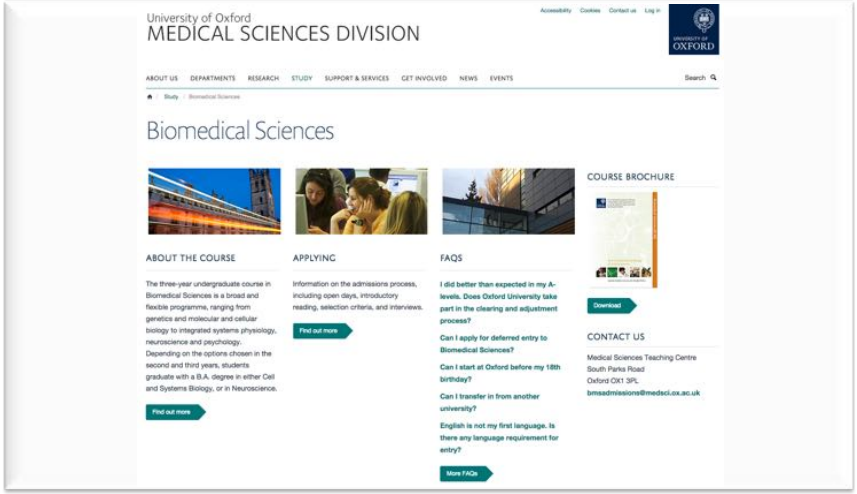
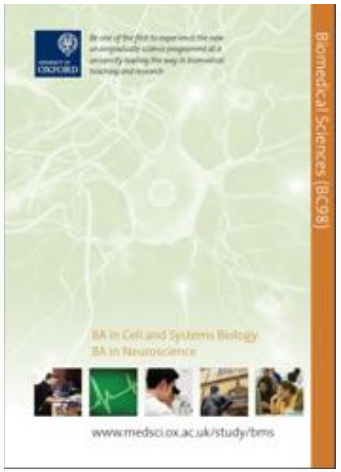
Course Director

http://www.medsci.ox.ac.uk/study/bms



Course leaflet



Biomedical Sciences at Oxford

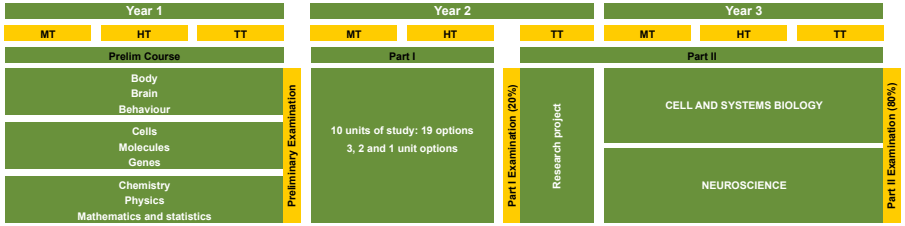
- a 3-year course, replacing Physiological Sciences and PPP (Physiology + Psychology)
- more chemistry, physics and mathematics
- more molecular: integration of biological and molecular processes underlying modern biomedical science
- focus on research: the experimental basis for our current understanding
- two BA degree outcomes:
  Cell and Systems Biology **OR** *Neuroscience*

What can you do with it?

BA degree

Graduate study
taught/research M.Sc.
Ph.D project
Pharmaceuticals/ biotechnology
Graduate-entry Medicine

Course structure



3 blocks, each comprising 3 threads, taken by all students

Study tailored to students' interests

Specialised options, with choices determining final degree subject

Teaching Centre

University teaching takes place in a purpose-built £8m teaching centre, that contains a lecture theatre and seminar rooms practical classrooms and CAL facilities

Part I: select 10 units

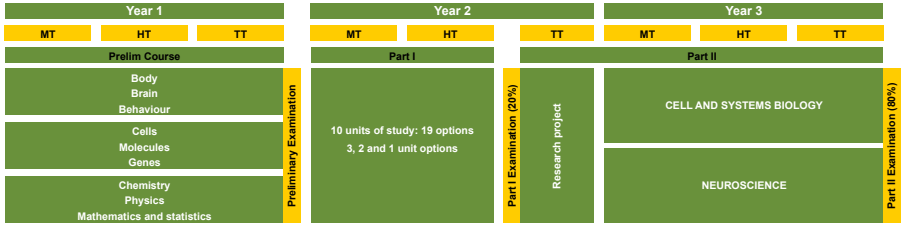
3 unit option
- Immunology and Microbiology

2 unit options
- *Behavioural Neuroscience*
- Cellular Pathology
- *Cognitive Neuroscience*
- Developmental Biology
- *Developmental Psychology*
- Endocrinology
- General Pharmacology
- Integrative Systems Physiology
- *Memory, Attention and Information Processing*
- Molecular Biology
- *Personal, Individual Differences and Psychological Disorders*

1 unit options
- Auditory Neuroscience
- Cellular Physiology
- Genes, Circuits and Behaviour
- Neuropharmacology
- Protein Structure
- Second Messengers and Cascades
- Visual Neuroscience

Italicised options: one required if studying Neuroscience at Part II

Course structure



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Part II

(CELL AND SYSTEMS) NEUROSCIENCE

Ion channels
Synaptic transmission
Sensory processing
Synaptic plasticity
Circadian neuroscience
Degeneration, regeneration and repair
Biology of brain disorders
Sensorimotor integration

MOLECULAR MEDICINE

Gene regulation
Molecular genetics of disease
Fertilisation and early development
Embryonic patterning
Brain development
Chromosome biology
Genes, development and cancer
Molecular and cellular therapies

CARDIOVASCULAR, RENAL AND RESPIRATORY BIOLOGY

Cardiac electricity and rhythm
Cardiac signals, modulators and metabolism
Endocrine and local control of the circulation
Cardiovascular performance and pathology
Neurobiology of breathing
Gas exchange in health and disease
Integration of cellular transport mechanisms
Renal regulation of homeostasis

EXPERIMENTAL PSYCHOLOGY

Anxiety and psychosis
Attention and multisensory perception
Attention: development and disorders
Cognitive and biological factors in personality
Colour vision
Computational neuroscience
Conscious awareness
Education and psychology
Emotion, appraisal and feedback
Gambling: cognitive and biological factors
Language aquisition
Learning theory
Mathematical devlopment
Mind and brain in cognitive neuroscience
Mood and anxiety disorders
Neural basis of decision making
Reading and language
Vision, brain and development

INFECTION AND IMMUNITY

Innate and adaptive immune responses
Leukocyte activation and inhibition
Microbial pathogenesis
Development immunology
Virology
Inflammation biology
Molecular parasitology
HIV and AIDS

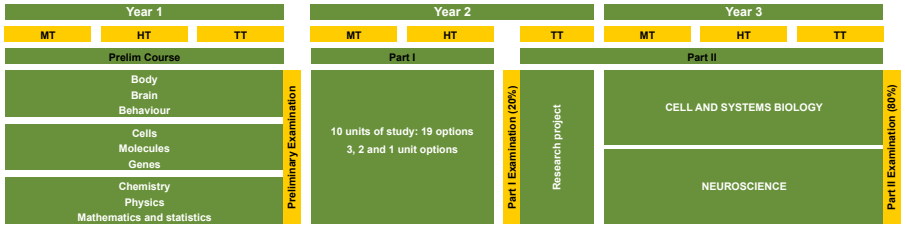
CELLULAR PHYSIOLOGY AND PHARMACOLOGY

Receptors and signals
Signalling and subcellular structure
Intracellular calcium signalling
Transport of ions and non-electrolytes
Time-dependent signalling
Brain signalling
Cellular sensing
Growth and metabolic signalling

Part II

- students study for one of two degree outcomes
  - Cell and Systems Biology
  - Neuroscience
- they study Advanced Options from Faculties of Physiological Sciences and Psychology
  - teaching is shared with EP and Medicine students
- the pattern of advanced options studied determines which degree is awarded

Course structure



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