



Teaching for postdocs in Cambridge



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Topics include:

1. The Tripos system
2. University – Colleges synergy
3. Access and admissions
4. Issues and challenges
5. Teaching in the future



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The Tripos system

- **Many topics in first year or two** which allows:
 - broad coverage of subjects;
 - introduction to non-school subjects;
 - more specialisation in final year/s.
- **Assessment** includes:
 - formal examinations - practicals
 - projects - dissertations.
- **Tripos exam** must be passed at end of each year but need only **2 Tripos** exams for **BA Honours** degree.
- Four year courses can lead to **M.Eng.** or **M.Sci.**

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Natural Sciences Part IA [year 1]

- **Three subjects from 7 choices:**
 - Biology of cells
 - Evolution and behaviour
 - Physiology of organisms
 - Chemistry
 - Geology
 - Materials & mineral sciences
 - Physics
- **plus one of**
 - mathematics
 - quantitative biology
 - elementary maths for biologists

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Natural Sciences Part IB [year 2]

- **Three subjects from 20 choices:**

Animal biology	Biochemistry & molecular biology
Chemistry A	Chemistry B
Ecology	Experimental psychology
Fluid mechanics	Geological sciences A
Geological sciences B	History & philosophy of science
Mathematics	Materials science & metallurgy
Minerals sciences	Molecular & cellular biology
Pathology	Pharmacology
Physics (single subject)	Advanced Physics (double subject)
Plant sciences	Physiology

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Natural Sciences Parts II & III* [years 3 and 4*]

- **One subject from 18 choices:**

Anatomy	Astrophysics
Biochemistry*	Chemistry*
Ecology	Genetics
Geological science*	History & philosophy of sci.*
Neuroscience	Materials sci. & metallurgy*
Pathology	Pharmacology
Physics*	Physiology
Plant sciences	Psychology
Zoology	Part II General

[four year courses]*

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Natural Sciences - change subjects

First year combinations:

Mathematics and physics
Mathematics and computing

Changes after first year:

Chemical engineering
Computer science
Electrical and information sciences
Management studies
Part II Natural sciences (General)

Other subjects?

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Teaching approaches

- **Lectures:**
 - often 3 per topic each week
 - typical undergraduate: up to 12 to 18 hours per week
 - question sheets (and answers!).
- **Practicals:**
 - range from 2 hours to 8 hours
 - continuous assessment
 - use of demonstrators (post-graduates often).
- **Projects.**
- **Dissertations.**
- **Examples classes and seminars.**
- **Supervisions.**

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Supervisions



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What are supervisions?

- 1 hour sessions
- Weekly usually but may vary
- Participants number from 2 to 6
- Facilitated by graduate, post-doc, lecturer, prof.
- Different according to individual and subject
- Arranged by **Colleges** [or departments]
- Accountable to, and responsibility of, **Colleges**
- **NOT** part of University's formal assessment

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What are supervisions for?

- learn discipline of **subject**
- integrate course across subject, field
- tackle assignments and problem solving
- **development** of individuals
- promote understanding **& independence**
- monitor welfare
- **assessment** of progress
- preparation for examinations
- **supervisor's own benefit**

... are fun!

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Running supervisions

- **ask if any questions**
- **discuss set work – properly commented upon!**
- **review lectures, practicals, examples classes**
 - debate topic (including in current news)
 - stepwise discussion and presentation
 - student presentations (to initiate discussion?)
 - brainstorm
 - group problem solving
 - other approaches, e.g. case studies/games
 - provide overview
- **summarise & set work / agenda for next time.**

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Finding supervisions

- lecture lists [\[www.timetable.cam.ac.uk\]](http://www.timetable.cam.ac.uk)
 - own subject
 - other departments - related topics
- approach lecturers directly
- talk in Department (who is leaving?)
- e-mail Directors of Studies in Colleges
- timing?
- need for training & opportunities to do so
- demonstrating in departments also for STEM

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University – Colleges synergy



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Schools, Faculties & Departments

- **Six Schools:**
 - Physical Sciences
 - Biological Sciences, including Veterinary Medicine
 - Technology
 - Arts and Humanities
 - Humanities and Social Sciences
 - Clinical
- **Faculties:** Physics & chemistry, Engineering
- **Departments:** Physics, Chemistry, Earth Sciences

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University – Colleges provision

- sets the courses
- provides lectures and classes
- sets examinations
- awards degrees
- research facilities
- sport, music, clubs
- select undergraduates
- accommodation & catering for students
- welfare of students
- supervision arrangements
- research opportunities
- sport, music, clubs

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University – Colleges facilities

- Lecture theatres
- Laboratories
- Libraries
- Museums
- Specialist sports, music, theatre, clubs
- Transferable skills
- Accommodation
- Dining halls, catering
- Libraries
- Seminar rooms
- Sports, music, theatre, clubs
- Transferable skills

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Colleges: status and diversity

- 31 colleges
- Status: autonomous institutions
financially self-sufficient
independent from University (legally!)
- Diversity: old and modern
men & women
undergraduate & graduate
sizes and architecture

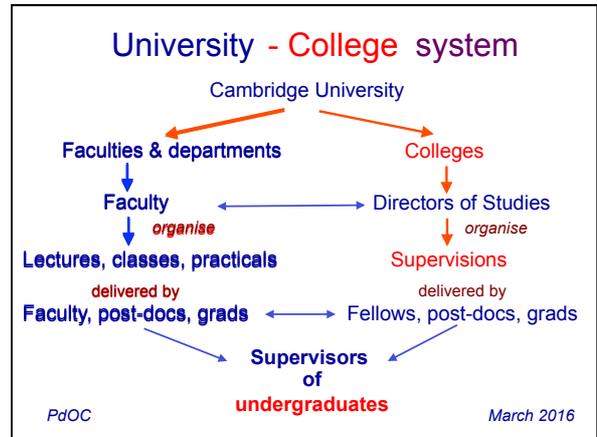
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Colleges: what do they do?

- Education and learning
Directors of Studies supervisions
- Admission of undergraduates (and /or graduates)
- Research
office space research fellowships
- Support & non-academic activities:
Tutors welfare accommodation
social sport music etc

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Directors of Studies

Tasks, generally within Colleges, include:

- greet first-years to discuss academic aims
- provide perspectives on possible courses
- find supervisors (or agree strategy with student)
- meet start and end of term to review progress
- give feed-back on supervisions (via reports)
- available as needed (if or when problems arise)
- become mentor/friend?
- interview prospective students & advise selection
- involvement with College teaching strategy

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3. Access and admissions

- need to change perceptions
- equality of opportunity → outreach activities
- ethnic minorities - Gemma

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3. Access and admissions (cont.)

- Top-up fees:
 - Office of Fair Access (OFFA)
 - Access Agreement
 - additional bursaries and financial support
- Application process:
 - subject tests (medicine, law)
 - electronic applications → CamSIS
 - subject moderation

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4. Challenges

- Undergraduate selection
- Research plus teaching
- International students
- Graduates
- Postdoctoral researchers
- Size of the University
- Staffing and housing

→ opportunities & progress

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5. Teaching in the future

- Accommodate changes in school courses
 - A-levels vs. International Baccalaureate
 - respect and develop additional skills
- Lecturing styles & use of web resources
- Supervision system: preservation & export
- Range of subjects taught in the University?
- College subject grouping?
- Modular degree courses or MOOCs?

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Questions ?

Supervisor resources

- Supervisors entry in Tutors' Guide A-Z
www.admin.cam.ac.uk/committee/seniortutors/
- Web sites of many Cambridge departments
- Introductory 'effective supervision' modules
www.admin.cam.ac.uk/offices/hr/ppd/online/
scroll down page to section "For academics and researchers"
choose "Effective supervision"
requires Raven authorisation
select Sciences or Arts, Humanities, Social Sciences
- Staff Development (PPD) courses

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Training resources

- **CamCORS**
when you first use & add personal details, you will be asked what training completed or anticipated.
- Mandatory training for new graduate supervisors
- Departmental organised courses
- Look on-line www.training.cam.ac.uk/gdp
enter "supervising" in search box to show courses delivered centrally

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Lecturing

- Department: be pro-active so talk in Teaching Office **or** with academic responsible for teaching
- Possible post-grad lecture/s related to your research **or** expertise on technique/computational modelling
- There may be pay for these!
- Consider the Institute of Continuing Education
www.ice.cam.ac.uk Again, be proactive and approach them to make suggestions.

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