POSTGRADUATE PROGRAMMES IN THE DEPARTMENT OF ENGINEERING SCIENCE

“Studying at Oxford has been both challenging, yet a truly rewarding experience (...) the professors at the department are so inspiring.”

Lakshmi Manjoosha Adapa
DPhil Engineering Science
St Edmund Hall
The Department offers six full-time postgraduate degrees: Master of Science by Research (MScR), Doctor of Philosophy (DPhil); and four CDT programmes: DPhil in Renewable Energy Marine Structures (REMS); DEng in REMS; DPhil in Gas Turbine Aerodynamics (GTA); and DPhil in Autonomous Intelligent Machines and Systems (AIMS).

COURSES

“The University of Oxford houses one of the top labs in the field of Aerospace Engineering, a natural choice for my research interests. I have since enjoyed the company of fellow researchers and academics who are smart, helpful and friendly, making life in Oxford a joy both inside and outside the lab.”

Holt Wong
DPhil Engineering Science
Wadham College

THE DEPARTMENT’S RESEARCH GROUPS ARE DIVIDED INTO EIGHT BROAD AREAS:

1. biomedical engineering
2. chemical and process engineering
3. civil and offshore engineering
4. electrical and opto-electronic engineering
5. energy
6. information, vision and control engineering
7. solid mechanics and materials
8. thermofluids and turbomachinery

ENTRY REQUIREMENTS FOR ALL PROGRAMMES

- A high 2:1 minimum or equivalent international qualification in engineering or related discipline relevant for the proposed area of research.
- For applicants with a degree from the USA, the minimum GPA sought is 3.5 out of 4.0.
- A previous master’s qualification is not required.
- Applicants whose first language is not English are usually required to provide evidence of proficiency in English. IELTS: overall score of 7.5 with minimum 7.0 per component. iTOEFL: overall score of 110 with minimum 25 per component.
You will join your supervisor’s research group and laboratory, and enjoy day-to-day contact with your supervisor, post-doctoral researchers and other research students working on broadly similar research themes.

A key aspect of your research experience in the department will be exposure to the broad sweep of today’s engineering research. The department is committed to engineering as a unified subject, allowing interdisciplinary research to flourish.

In the first year, you will develop research skills in two ways. Firstly, you will read the current literature, often in reading groups, and attend research seminars, relevant lectures and training courses. Secondly, you will design and build apparatus, develop software, or do both to address your own research topic. Often there is external involvement and you will develop your work in collaboration with researchers from industry and other research organisations.

As well as ongoing assessment by your supervisors, you will be required to write a report and give a presentation on your research at the end of the first year, and to present a detailed and coherent plan for the remaining years of study. For DPhil, progress towards completion is again formally assessed during the third year. You will be required to submit a substantial thesis at the end of the second year (MSC(R)) or third year (DPhil) which is read and examined by experts in the field, one from the University and one from elsewhere. Often the thesis will result in the publication of at least one journal paper (MSC(R)) or two or three journal papers (DPhil).

**EXPECTED LENGTH OF STUDY:**
- 3 years (DPhil)
- 2 years (MSC(R))

**ANNUAL FEES FOR 2016–17:**
- **Tuition:**
  - Home/EU: c. £4,200
  - Overseas: £18,770
- **College:**
  - Home/EU: £2,933
  - Overseas: £2,933
CENTRE FOR DOCTORAL TRAINING PROGRAMMES

AUTONOMOUS INTELLIGENT MACHINES AND SYSTEMS

Oxford Director: Professor Stephen Roberts

The DPhil provides graduates with the opportunity to develop in-depth knowledge, understanding and expertise in autonomous intelligent systems. The programme provides a comprehensive, state-of-the-art view of autonomous intelligent systems, combining theoretical foundations, systems research, academic training and industry-initiated projects and thus mixing both practical and theoretical aspects of intelligent machines and systems.

The first year is oriented towards developing your knowledge base. You will take 14 courses, each lasting one to two weeks, and your day typically comprises lectures each morning with laboratory sessions each afternoon. You will undertake two 12-week projects, precursors to your DPhil study, to hone your research skills and to shape your main research area. You will meet your supervisors regularly to assess progress and to discuss academic issues.

Years two to four see an increasing emphasis on individual research. A summary of projects is produced at the end of the first year by supervisors, but you will also be encouraged to develop projects based on your own research ideas within the four key research areas of Robotics, vision and perception; Machine intelligence & multi-agent systems; Control & verification; and M2M, secure sensing & actuation. Students will select a project and their main research supervisor at the beginning of year two. In the fourth year, the cohort will be asked to help organise the annual workshop, inviting keynote speakers, participating in the program committee, reviewing papers submitted by 2nd and 3rd year students, and publicising the workshop to universities and industrial partners beyond those directly involved in the CDT.

EXPECTED LENGTH OF STUDY:
4 years

ANNUAL FEES FOR 2016–17:
Tuition:
Home/EU: c. £4,200
Overseas: £18,770
College:
Home/EU: £2,933
Overseas: £2,933

GAS TURBINE AERODYNAMICS

Oxford Director: Professor Li He

The DPhil is a joint programme between the Universities of Cambridge, Oxford and Loughborough, together with leading industrial partners in the field.

Year one is oriented towards developing your knowledge base. Along with students from Cambridge and Loughborough, you will register and study for an MRes degree in Gas Turbine Aerodynamics at the University of Cambridge. The course involves taught lectures and laboratory modules along with several mini projects of three to four weeks each undertaken at the three partner universities, and at some of the sites of the industrial partners. These are precursors to your DPhil study, to hone your research skills and to shape your main research area. You will meet your supervisor regularly to assess progress and to discuss academic issues.

Years two to four see an increasing emphasis on individual research. Oxford’s students register for the degree of DPhil and carry out a research project at the Osney Thermofluids laboratory, an internationally-recognised centre for research in Gas Turbine Heat Transfer and Aerodynamics, and part of Oxford’s Department of Engineering Science. You will benefit from the network of leading experts in the field, and develop a portfolio of academic, laboratory, and career-oriented skills. Throughout the research project, there will be close interaction with an industrial partner. In addition, the full cohort is regularly reunited for CDT seminars and workshop events.

EXPECTED LENGTH OF STUDY:
4 years

ANNUAL FEES FOR 2016–17:
Tuition:
Home/EU: c. £4,370
Overseas: c. £19,525
College:
Home/EU: c. £3,050
Overseas: c. £3,050
CENTRE FOR DOCTORAL TRAINING PROGRAMMES CONTINUED

RENEWABLE ENERGY
MARINE STRUCTURES
DPhil
DEng

Oxford Director:
Professor Byron Byrne

Run in collaboration with Cranfield University the programme is focussed on all types of marine energy (offshore wind, tidal and wave). Taught modules are provided at Cranfield University. The individual research project is based in Oxford (although for the DEng route, much of the day-to-day research is conducted within a sponsoring company).

The first year consists of an initial 11-week programme of taught modules. This initial programme includes four specialised modules (e.g. fluid mechanics and stress analysis) together with a group project and separate courses on a variety of topics in management, innovation and professional development. From January to April students continue with the group project whilst also starting their individual research projects. The group project is completed by April so that the remainder of the first year is spent working on the individual research project. The individual project is typically concerned with experimental, numerical and/or field work within the broad area of geotechnical engineering applications in renewable energy marine structures.

Further taught modules are taken during the second, third and fourth years of the programme. However, the principal focus during these years is on the development of the individual research project. An annual conference is arranged at which students enrolled on the programme present their work.

For the DEng route students conduct much of the individual research project while embedded within a sponsoring company, although periods of time are also spent working in Oxford. Students are assigned one, or more, Oxford academic supervisors. At the end of the programme, students typically submit for examination a portfolio of work though they may submit a thesis if appropriate.

For the alternative DPhil route, students develop their individual research project while working at Oxford within the Civil Engineering Research Group. In this case, students submit a thesis for examination at the end of the programme.

EXPECTED LENGTH OF STUDY:
4 years

ANNUAL FEES FOR 2016–17:

Tuition:
Home/EU: c. £4,200
Overseas: £18,770

College:
Home/EU: £2,933
Overseas: £2,933
STUDENTSHIPS
The Department typically offers a number of funded studentships throughout the year. These are advertised on the departmental website: http://www.eng.ox.ac.uk/study-here/postgraduate/studentships

Please note that a graduate application must be submitted in order for your studentship application to be considered.

FUNDING
The Department holds funding from the Engineering and Physical Sciences Research Council (EPSRC) to support approximately eight Home research students per year. There is no separate application form to apply for these awards.

Up-to-date fees and funding information can be found online. www.ox.ac.uk/admissions/graduate/fees-and-funding/fees-funding-and-scholarship-search

HOW TO APPLY
Please complete an online application. You need to include:

- a research proposal of 1,000 to 1,500 words (c. two A4 pages)
- the names of up to three potential supervisors
- a CV/résumé
- three academic references
- official transcripts detailing your university-level qualifications and marks to date.

Application deadlines for 2016–17 entry:
20th November 2015
22nd January 2016
11th March 2016

“Studying at Oxford is amazing academically and culturally. Beside academic development, I enjoyed gaining invaluable life experiences. As a research student, Oxford provided me with talented people, who are always willing to give useful advice. Oxford opened the door for whole new opportunities or you could say a new life.”

Boontida Meg Uapipatanakul
DPhil Engineering Science
Lady Margaret Hall

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