Hands-on training in state-of-the-art methods connecting field, wet-lab and computational biology.

In depth interdisciplinary research project to address open questions in this field.
ABOUT THE COURSE

The field of Ecology, Evolution and Development describes how the molecular and genetic regulation of development changes in response to evolutionary forces to generate organismal diversity. Understanding development, and its regulation in ecological and evolutionary contexts, is critical for developing emerging molecular medical techniques, understanding biodiversity and tracing evolution.

The main goal of this MRes is to promote the development of interdisciplinary research skills in preparation for a research career, for example entry into a PhD programme. In particular, this course will provide training in field, laboratory and computational work within the framework of Ecology, Evolution and Development. Students will also undertake a major research project requiring a range of organisational, analytical and communication skills appropriate for researchers in the field.

This MRes aims to prepare you for vocational employment in a wide range of contexts, and will enable students to engage in life-long learning, study and enquiry.

RESEARCH PROJECTS

A key part of the MRes is the research project, carried out over two semesters.

There are a variety of engaging topics to choose from, all supported by leading researchers in the field.

Some examples of projects and supervisors include:

- **Characterisation of the genetic basis of genital evolution between Drosophila species**
  - Supervisor: Alistair McGregor
  - 2nd supervisor: Maria Daniela Santos Nunes
  This project will combine developmental genetics, morphometrics, population genetics, and bioinformatic approaches to measure differences in genital morphology, and identify the underlying developmental genetic changes and evolutionary forces. All facilities required for this project are available in the supervisor’s lab, and will take advantage of the existing microscopy facilities.

- **Maternal regulation of offspring reproductive physiology under a range of environmental conditions**
  - Supervisor: Casper Breuker
  - 2nd supervisor: Leonardo Dapporto
  - External collaboration with the Centre for Ecology and Hydrology
  The research project will combine a number of interdisciplinary approaches, including a field work component, butterfly rearing and manipulation, collecting life-history data in lab, DNA and RNA extraction, sequencing, and bioinformatics. Students will have access to the butterfly experimental lab, and molecular lab.

- **Investigating the function of nuclear envelope components in plants**
  - Supervisor: Katja Graumann
  - 2nd supervisor: John Runions
  The proposed work will explore the functions of the SUN and NEAP proteins in chromatin organisation and nucleo-cytoskeletal interactions throughout plant development. For this project the students will work with the model organism Arabidopsis thaliana and will use essential molecular, microscopy and bioinformatics methods.

MODULES

The course is composed of a one week Research Methods module followed by three further integrated taught modules, and finally a research project that is carried out over two semesters.

Modules:
- Research Methods (10 credits)
- Developmental Biology (20 credits)
- Molecular Ecology and Population Genetics (10 credits)
- Bioinformatics (20 credits)
- Research Project (120 credits)

A variety of teaching and learning methods are used in the course, from lectures and guest seminars, to practical work and the use of state-of-the-art digital tools.

Elements of assessment build on each other towards the research project and the assessment of that module, through a dissertation and oral presentation.
WHY CHOOSE BROOKES?

- Development of interdisciplinary research skills and experience.
- Opportunity to carry out an in-depth research project to address open questions in this field.
- Hands-on research driven training in field work, advanced wet laboratory techniques and state-of-the-art bioinformatics.
- Intensive one week introductory workshop for students from all backgrounds.
- Student support services include Upgrade, to enhance study skills, and access to academic advisors and student support coordinators, for one-to-one advice.
- Teaching by world class researchers in this field with recognised excellence and experience in teaching and learning.

CAREERS AND PROFESSIONAL DEVELOPMENT

Training provided by this course will give you the interdisciplinary research and transferable skills necessary for further research in field, lab and computational biology, in both academic and industrial sectors.

Many of our graduates will go on to study for PhDs in the UK and abroad. Our programme will increase the opportunities for UK graduates to compete for PhD positions here and be eligible to apply for PhD programmes elsewhere in the EU and internationally.

The skill sets developed mean that our graduates will be highly competitive for employment in research support and sales, biotechnology, health care, education, administration, and consultancy.

The one week intensive gave me the opportunity to expand my knowledge of ‘eco evo devo’ from my undergraduate studies.

I was able to combine theory and experimental approaches from these areas to identify and tackle practical research questions hand-on.

This was undertaken in a stimulating, international environment, with students and academics from all over the world.

Matthew Herbert
Attended pilot Research Methods Intensive module
ENTRY REQUIREMENTS
You should normally have (or be about to attain) at least a second class undergraduate honours degree in a relevant scientific subject from a recognised institute of higher education.

EU and international applicants’ qualifications will be evaluated on a case by case basis before any offer of a place on the course is made.

If your first language is not English, then you must satisfy our English language requirement by providing us with evidence of an IELTS score of 6.5 in all elements. If you need a student visa to enter the UK you will need to meet the UK Visas and Immigration minimum language requirements as well as the university’s requirements.

For more information, visit our website: www.brookes.ac.uk/international/how-to-apply/postgraduate/postgraduate-entry-requirements

HOW TO APPLY
If you meet the criteria detailed in the specific entry requirements section, and you are ready to apply, your next step is to complete an application form.

Application is made online through UKPASS at www.ukpass.ac.uk

UKPASS COURSE CODE
52259

CONTACT DETAILS
If you would like more information about the course, please contact:

PROGRAMME ADMINISTRATOR
Tel: +44 (0)1865 483826
Email: ecoevodevo@brookes.ac.uk

FUNDING
Please contact the Programme Administrator to find out whether funding is available to assist with costs.

Self-funding applicants are also welcome to apply.

All applicants (UK, EU and international) will be required to provide details of their funding arrangements prior to enrolment on the course.

COURSE FEES
Information about fees can be found on the course webpage: www.brookes.ac.uk/postgraduate/courses/ecoevodevo

If you have a query, please contact Student Finance:

Tel: +44 (0)1865 483088
Email: finance-fees@brookes.ac.uk
Website: www.brookes.ac.uk/finance

KEY FACTS
DEPARTMENT
Department of Biological and Medical Sciences

COURSE LENGTH
Full-time: 12 months

TEACHING LOCATION
Headington Campus, Gipsy Lane

START DATE
September

Funding
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Self-funding applicants are also welcome to apply.

All applicants (UK, EU and international) will be required to provide details of their funding arrangements prior to enrolment on the course.

All information is correct at the time of going to press. Please refer to the University’s website for the most up-to-date details.

Oxford Brookes University actively supports equality in education and welcomes applications from all people representative of our diverse community. For more details please visit www.brookes.ac.uk/services/hr/eod or phone +44 (0) 1865 485929.

3 December 2015